

The diachrony of English loanwords in Korean¹

강윤정 (Yoonjung Kang)
University of Toronto Scarborough
yojung.kang@utoronto.ca

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Chungbuk National University
춘계 한국현대언어학회 & 한국중원언어학회 공동 학술대회

1. Introduction

(1) Why loanwords change over time?

- a. Illicit foreign structures are borrowed with modification initially but are imported without modification later. (cf. Crawford 2007, 2008) → Section 2. & 3.
- b. Initial adaptation is variable, but over time, convention gets established and the adaptation pattern becomes more systematic and uniform. (cf. Haugen 1950) → Section 4., 5. & 6.
- c. Changes internal to the borrowing language alter the way foreign inputs are filtered. → Section 6.
- d. Changes in the route/channel of borrowing affect the pattern of adaptation. (Smith 2006, Lee, P.-H. 2007, Heffernan 2007, Kang et al. 2008)
- e. Changes in the source language characteristics get reflected in the adaptation.

(2) Data: English loanwords in **Contemporary Korean** (현대국어 1880-Present)

- a. Enlightenment Period Korean (**EPK**, 개화기 국어 1880-1910): Y.-H. Kang 1971, Park 1997
 - ca. **2,700** loanforms
- b. **1930s**: Lee Jong-Geuk's *Modern Korean Loanword Dictionary* 1937
 - ca. **18,000** loanforms
- c. Present Day Korean (**PDK**, 현재국어): *The National Institute of the Korean Language* 1991, 2002, 2003, etc., Google searches
 - NIKL 1991: ca. **5,000** loanforms
- d. Data are entered into MS Excel files. For each variable under investigation, relevant items are selected and coded for various factors (position within a word, following vowel quality etc.)

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2. Adaptation to Importation: Word-initial /l/ and /r/ of English

(3) Native restriction: Initial liquid avoidance (두음법칙)

- Even in the earliest stages (EPK, 1930s), the restriction against initial liquid was mostly violated and word-initial /l/ and /r/ were adapted as ‘ㄹ’ mostly.
- But, there are several examples of repair that are not attested in PDK.
- The repairs for /l/ and /r/ diverge even though they are allophones of a single phoneme in Korean. Indication that the adaptation refers to phonetic similarity.

➤ /l/-initial words:

<ul style="list-style-type: none"> ▪ [l] → [n]: EPK <li style="text-align: right; padding-right: 20px;">1930s 	<i>London</i>	→ 논돈, 년던, 론돈...
	<i>lemur</i>	→ 니물
	<i>lemonade</i>	→ 나무네, 네모나데...
	<i>lysol</i>	→ 니솔
	<i>let in</i>	→ 네트인

cf. [l] → [ɰl] (Shin 2000): *learn* → 을러언

➤ /r/-initial words:

<ul style="list-style-type: none"> ▪ V insertion: EPK <li style="text-align: right; padding-right: 20px;">1930s 	<i>Russia</i>	→ 아라샤, 아라사, 러시아...	
	<i>rightfield</i>	→ 으라잇필드	
	<i>Robinson Crusoe</i>	→ 으라빈손 크루소	
	<i>round</i>	→ 으라운드	
	<i>reporter</i>	→ 으레포:터	
	<i>republic</i>	→ 으리퍼블릭	
	<i>relay</i>	→ 으릴레이	
	▪ [l] → [n]: 1930s	<i>racket</i>	→ 나켈트
		<i>rail</i>	→ 네:루

3. Adaptation to Importation: Adaptation of /ʃ/

(4) Modern Korean (18-19th century): Sibilant + j avoidance (*sj, *s'j)

- /j/ deletes following sibilants: j → ∅ / (c, c^h, c'), **s, s'** ____
- Early Middle Korean (14-15th century) > Modern Korean (18-19th century)

so ‘pond’	sjo ‘ox’	>	so
səm ‘stair’	sjəm ‘island’	>	səm

(5) Yod-dropping in derived environment in native words in Contemporary Korean

- EPK and 1930s (Han 2005, Park 2004)

/mosi-ʌtaka/ [mosʌtaka] ‘to bring(hon.)’

cf. PDK [mosjʌtaka]

/ha-si-ʌs-sipnita/ [hasʌs*imnita] ‘do-hon.-past-state (polite)’

cf. PDK [hasjʌs*imnita]

(6) Adaptation of /ʃ/ in EPK²

a. Complication: Spurious <j>

- Post-sibilant yod dropping in Modern Korean led to confusion and variation in spelling.
- Both <jV> and <V> are used interchangeably to represent simple /V/ following sibilants, regardless of whether the word originally had /j/ or not.
- Bilingual textbooks specifically mention that <jV> means /V/ following sibilants.

<saram> ~ <sjaram> ‘person’ [saram]
 <c^hΛim> ~ <c^hjΛim> ‘first’ [c^hΛim] (D-S Kim 1998, Park 2004).

b. Spurious <j> is also found in loanword transcription as well and English /s/ is often transcribed as <sj>, as well as the expected <s>. /ʃ/ show similar variation in transcription (Han 2007b).

- /s/:

without <j>	<i>Sardinia</i>	살디니아
	<i>Harrison</i>	하리손
with <j>	<i>Massachusetts</i>	맛샤추셋철
	<i>Saint</i>	세인트
- /ʃ/

without <j>	<i>Shannon</i>	사논 ~ 쇠논
	<i>Fashoda</i>	파소다
with <j>	<i>Pasha</i>	파샤
	<i>Chateau</i>	샤토

- We cannot be sure whether <j> in /ʃ/ transcription is phonologically real or not.

c. But, there are reasons to believe that not all occurrences of <j> in post-alveolar consonant adaptation are dummies.

- <j> occurs more frequently for /ʃ/ than for /s/.
- Vowel context effect (*Cje) is present for /ʃ/ but not for /s/:

cf. [j] is systematically deleted post-consonantly before a front vowel in Contemporary Korean (Hong 1994, H. Kang 1997, H. Choi 2002, M. Chung 2002, Cha and Ahn 2004, Han 2005, Y. Kim 2000)

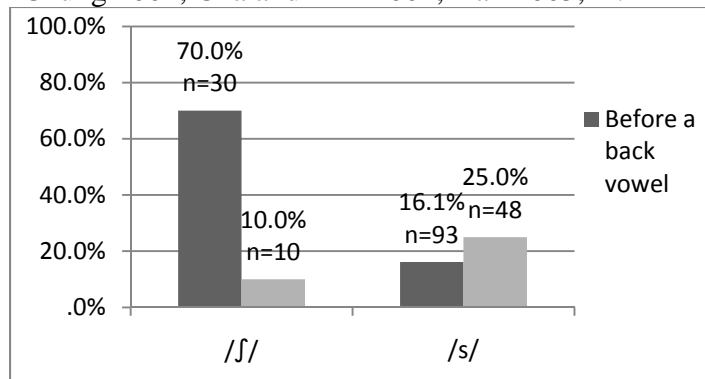


Figure 1. The rate of <j> occurrences before front vs. back vowels in the adaptation of English /ʃ/ and /s/ in EPK

² In addition to Y-H. Kang (1971) and Park (1997), the data for post-obstruent adaptation are drawn from Han (2007a). I would like to thank Professor Han Sung-Woo for generously sharing the list of loanwords he compiled from three major newspapers published during the Enlightenment Period.

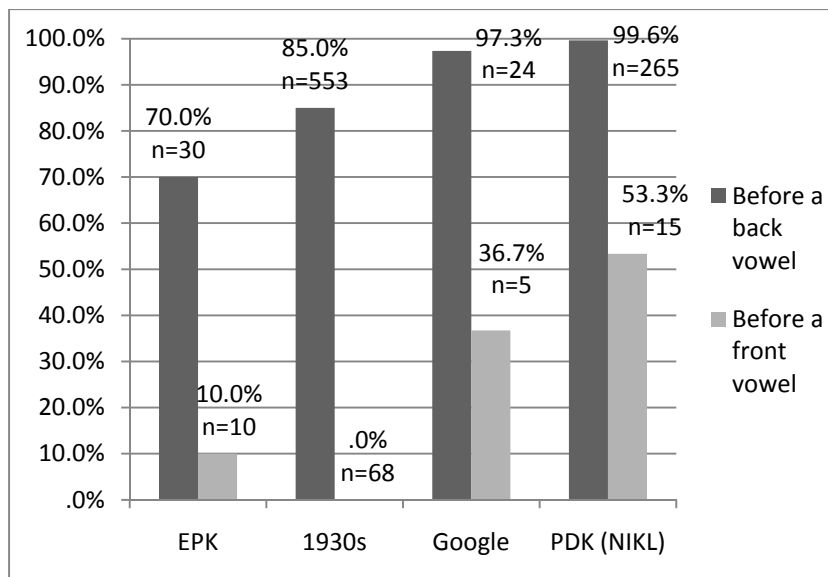


Figure 2. The (average) rate of <j> occurrences before front vs. back vowels in the adaptation of English consonants /ʃ/ in Contemporary Korean

(7) Adaptation of /ʃ/ in 1930s

a. Spelling reforms

- A series of spelling reforms in native words to bring the written forms closer to the spoken forms were implemented in the 1910s and the 1920s.

- The rate of spurious <j> in /s/ and /z/ adaptation in Lee's dictionary is less than 1% (/s/ as [sj]: 7 out of 889)

b. 85% <j> before back vowels and 0% before front vowels

- before back vowels *shock* 속크, 쇼크, 속, 속크, 쏘크
 Shylock 샤일럭, 샤일록
- before front vowels *sherry* 세리, 웨리
 shepherd 세바트, 세버드, 세파:드, 세퍼드, 웨퍼:드

(8) Adaptation of /ʃ/ in PDK

a. Categorical <j> before a back vowel. Substantial occurrences before a front vowel (*je)

- shepherd* 세퍼드, 세퍼드
Bolsheviki 볼세비키, 볼세비키

Age	20s	30s	40s	50s	60s	70s
Proportion of /sje/ responses	34.58% (N=39)	19.95% (N=40)	18.73% (N=42)	14.02% (N=42)	11.81% (N=42)	0.91% (N=5)

Table 1 The rate of English /ʃe/ or /ʃɛ/ being pronounced as /sje(i)/ by Seoul Korean speakers of different age groups based on H.-W. Choi (2001)

4. Regularization of adaptation: Coda /r/

(9) PDK: adapted as “null”

bar 바
concert 콘서트
service 서비스

(10) EPK & 1930s:

a. Coda ‘ㄹ’

harmony 할모니, 하모니
cork 콜크, 고루구
service 썰비스, 써비스

b. ‘ㄹ’ with vowel insertion: often non-English proper nouns or Japanese-style loans

hormone 호르몬, 흘몬, 호루몽

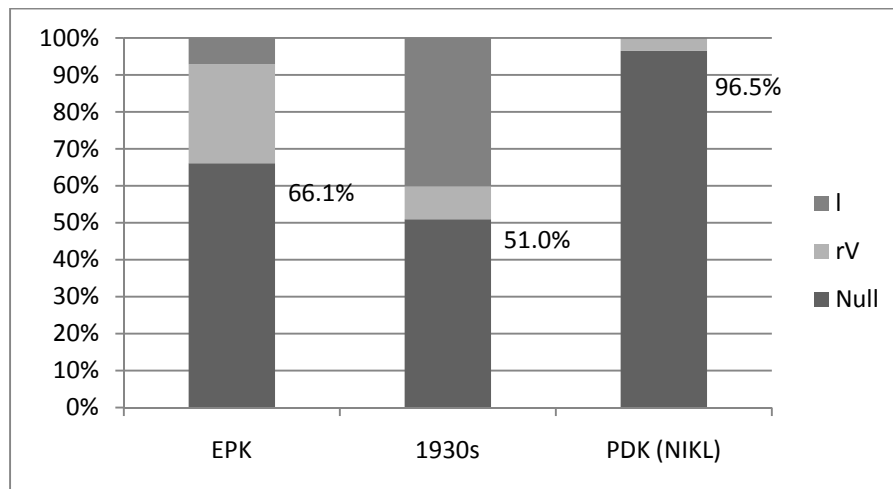


Figure 3. Adaptation pattern of English coda /r/ in Contemporary Korean

5. Regularization of adaptation: Post-alveolar consonants (Kang, in press)

(11) English post-alveolar consonants (/ʃ ʒ tʃ ʒ/ (r)/) are produced with variable lip rounding (cf. Hubbell 1950, Jones 1950, Kurath 1964, Gimson 1980, Rogers 2000, Liker et al. 2007, Collins and Mees 2008).

(12) In PDK, lip rounding is almost never reflects in adaptation.

(13) In EPK and 1930s: the English affricates are often adapted with [w] reflecting the lip rounding feature.

- EPK /tʃ/: *chain* 체인, 체인
- /ʒ/: *Virginia* 버쥬니아, 버쥬니아, 버지니아, 버지니아, 버디니아
- 1930s /tʃ/: *chance* 찬스, 찬쓰, 짠쓰, 찬쓰, 찬스, 찬쓰
- /ʒ/: *G* 쥬:, 짜:

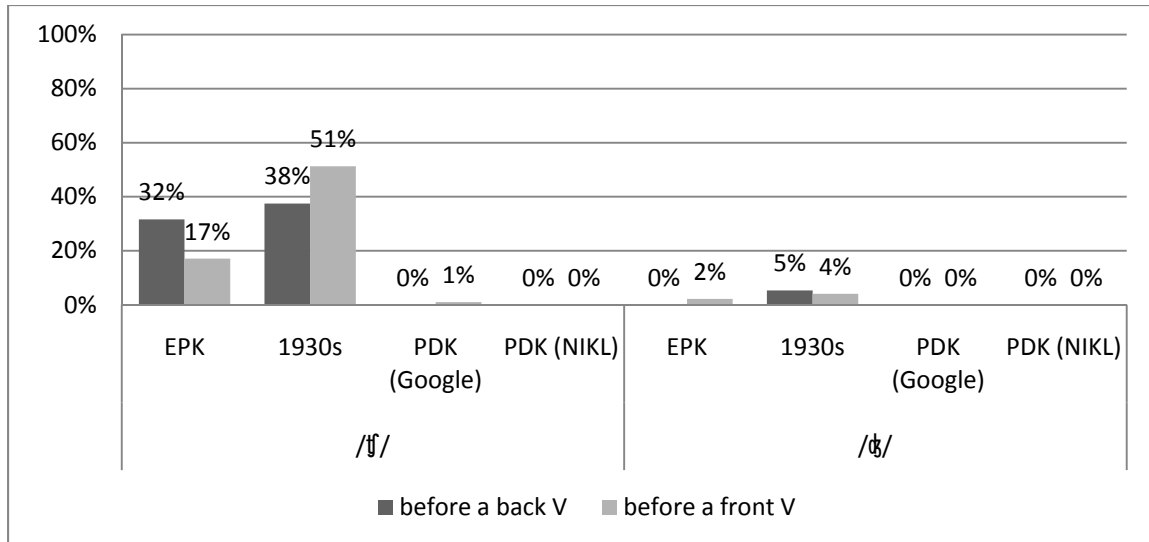


Figure 4. The (average) rate of <w> occurrences before front vs. back vowels in the adaptation of English consonants /tʃ/ and /dʒ/ in Contemporary Korean

- (14) Initial stages of adaptation tend to show sporadic adaptation pattern but over time, the adaptation pattern often becomes more uniform and regular.
- The regularization can take place at different levels of phonological structure
 - o Phonemes or features: post-alveolar affricates
 - o Positional allophones: English coda /r/

6. Language internal change: Adaptation of voiced stops (cf. Kang 2008)

(15) PDK

- a. English voiced stops are adapted as lenis stops of Korean in general but in word-initial position, English voiced stops are realized with a fortis stop in some lexical items.
- b. The fortis realization is possible on when the initial stop is prevocalic, but preconsonantal.
- c. Oh (2009)'s survey finds that between 10~20% of the words show fortis adaptation.
 - Word-initial, prevocalic
 - Fortis *bonus* → /p'onʌs'i/
 - Fortis *dollar* → /t'alla/
 - Fortis *gas* → /k'as'i/
 - Lenis *belt* → /pelt^hi/
 - Lenis *disk* → /tisik^hi/
 - Lenis *guide* → /kaiti/
 - Word-initial, preconsonantal
 - Lenis, *Fortis *drama* → /tirama/, */t'irama/
 - Lenis, *Fortis *black* → /pillæk/, */p'illæk/
 - Word-medial, Word-final
 - Lenis, *Fortis *double* → /t'ʌpil/, */t'ʌp'il/
 - Lenis, *Fortis *board* → /p'oti/, */p'ot'i/

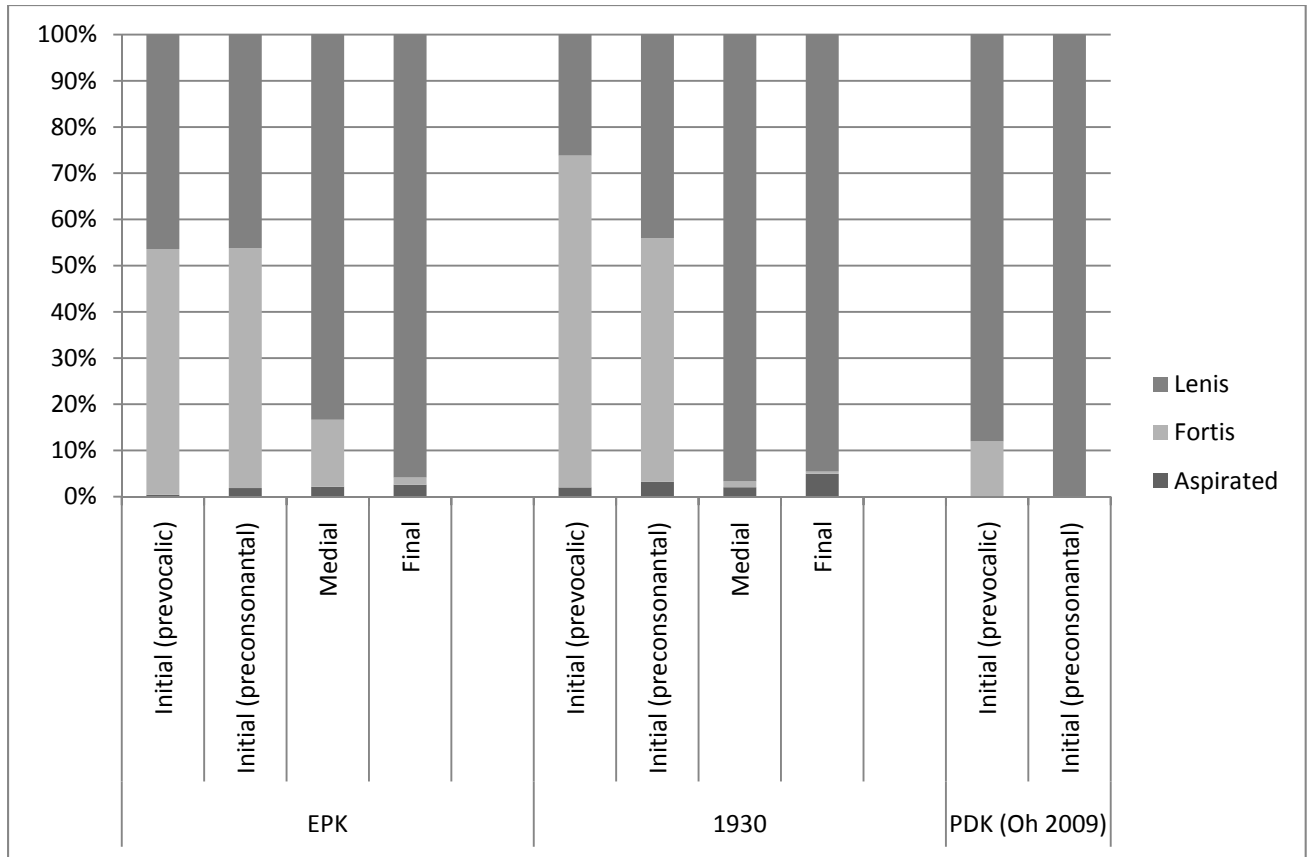


Figure 5. The pattern of voiced stop adaptation in Contemporary Korean by word position

(16) EPK

a. Word-initial voiced stops are adapted as fortis in over 50% of the cases and fortis adaptation is attested equally often in prevocalic and preconsonantal positions.

➤ Word-initial, Prevocalic

gallon 갈논, ᄁ가론, ᄁ갈논, ᄁㄱ/론, ᄁ가론, ᄁ가론

banana 바나나, ᄁㅂ/나나

Dublin 다부린, 더블린, ᄁ더블닌, ᄁ더블린

➤ Word-initial, Preconsonantal

Greece 그리쓰, 그리스, ᄁ그리쓰, ᄁ그뤼쓰

Dresden 드레스덴, ᄁ드레스덴

blue 블루, ᄁ블뉴

b. Fortis adaptation is also substantially attested in word-medial position but not in word-final position.

➤ Word-medial

Elizabeth 엘라자 베드, 열잡예, 엘리사ㅅ베트

Dundee 둔딤-, ᄁ던ㅅ디

Michigan 미쉬간, 미쉬ㅅ간, 미시ㅅ간, 미시칸, 미싱안

(17) 1930s (cf. S. Kim 2003)

a. The pattern becomes more uniform by position:

➤ word-initial: 70% fortis

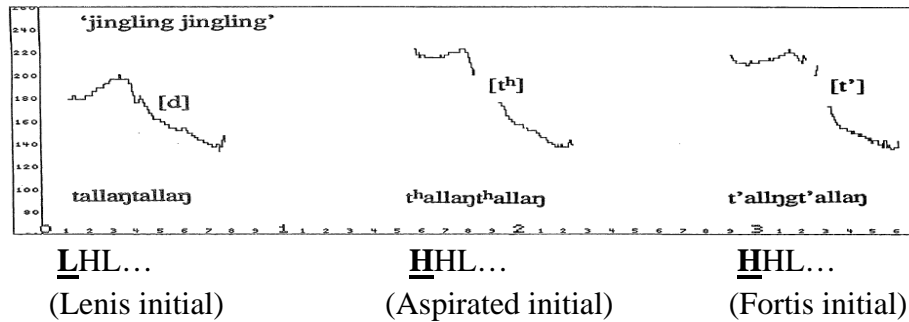
➤ Medial and final: mostly lenis

b. Word-initially, stops are more often adapted as fortis prevocalically than preconsonantly.

- Word-initial, Prevocalic
 - back* 바크, 백, 백크
 - doctor* 딱터, 독타, 딱터, 딱트, 딱틀
 - gang* 강구, 갱, 갱, 갱그, 캉, 캉크, 갱, 갱그, 강, 강크
- Word-initial, Preconsonantal
 - blouse* 블라우스, 부라우스
 - drill* 드릴, 도릴, 도리루, 트릴, 드릴
 - glass* 글라쓰, 구라스

- (18) Phonetic correlates of Korean laryngeal contrast (Cho et al. 2002 for a recent review)
- a. VOT: Aspirated > Lenis > Fortis
 - But, the ranges overlap and VOT alone is not sufficient to distinguish the three-way contrast (cf. C-W. Kim 1965).
 - b. F0: Aspirated, Fortis > Lenis
 - c. H1-H2 (breathiness): Lenis > Aspirated > Fortis\
 - d. In phrase-initial position, the F0 difference induced by the laryngeal feature of the consonant is phonologized (Jun 1993, Kim and Duanmu 2004, Silva 2006, Kenstowicz and Park 2006, Park and Iverson 2008, etc.)

Accentual phrase initial tones in Chennai dialect (From Jun 1993)



- (19) Conflicting cues in the English voiced stops
- The VOT of English voiced stops (0~35ms: Lisker and Abramson 1964) is best matched by the **fortis** stops of Korean.
 - **F0** is lowered following English voiced stops (Hombert et al. 1979, Kingston and Diehl 1994, among others). In terms of F0, English word-initial voiced stops are better matched by the **lenis** stops of Korean.
- (From Hombert et al. 1979)

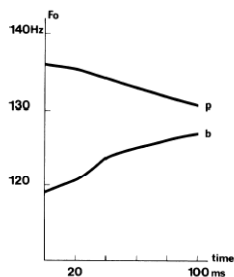


FIGURE 1. Average fundamental frequency values (in Hz) of vowels following English stops (data from five speakers). The curves labeled [p] and [b] represent the values associated with all voiceless and voiced stops, respectively—regardless of place of articulation. The zero point on the abscissa represents the moment of voice onset; with respect to stop release, this occurs later in real time in voiceless aspirated stops.

Cue	English word-initial voiced stops	Best match in Korean
VOT	Short VOT	Fortis stops
F0	Low F0	Lenis stops

(20) In Contemporary Korean, **F0 outweighs VOT**

- Kim et al. (2002): Cross-splicing experiment

		Percentage of Responses		
		Lax	Tense	Aspirated
Same spliced	$C_{\text{lax}}V_{\text{lax}}$	99	0	1
	$C_{\text{tense}}V_{\text{tense}}$	0	98	2
Different spliced	$C_{\text{lax}}V_{\text{tense}}$	7	92	1
	$C_{\text{tense}}V_{\text{lax}}$	66	4	30

(21) Silva (2006): An apparent time study of phonetic correlates of laryngeal contrast

- VOT becomes less distinctive in younger speakers and F0 remains stable.
(From Silva 2006)

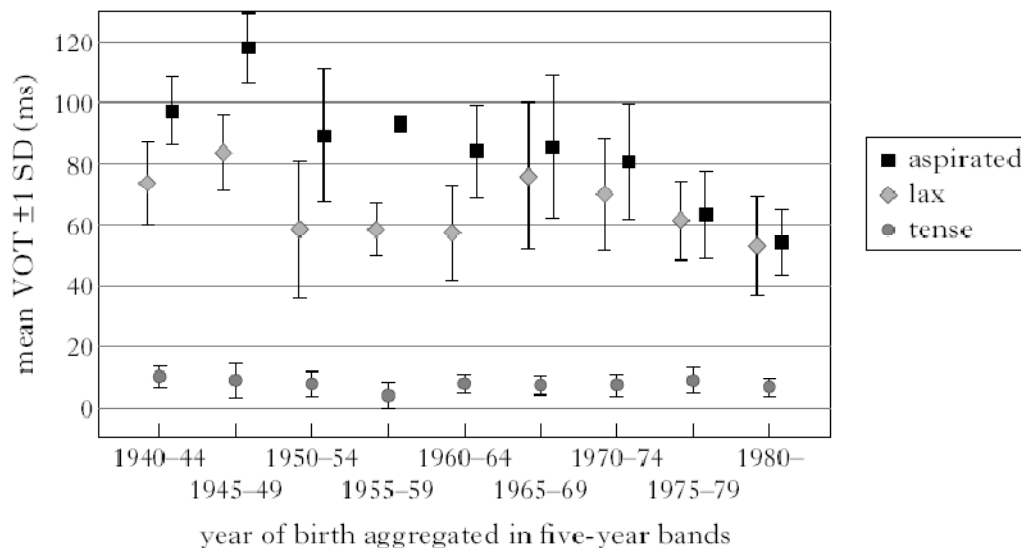


Figure 1

Mean VOT values and range (1 standard deviation) over time. Each marker represents the mean VOT value for speakers aggregated into five-year bands, based on year of birth.

(22) **NIKL Phonetic database (2003)**

- 120 Seoul speakers balanced for gender & age, reading passages from novels (930 sentences in all)
- /t/ and /t^h/ initial sentences
 - 동대문맞은쪽길가에앉아서방망이를깨아파는노인이있었다.
 - 토끼는깜짝놀라서소리쳤어요
 - 똑같은쌀, 똑같은술으로밥을지어먹었는데어째서한국사람만이승냥을만들어마셨을까?

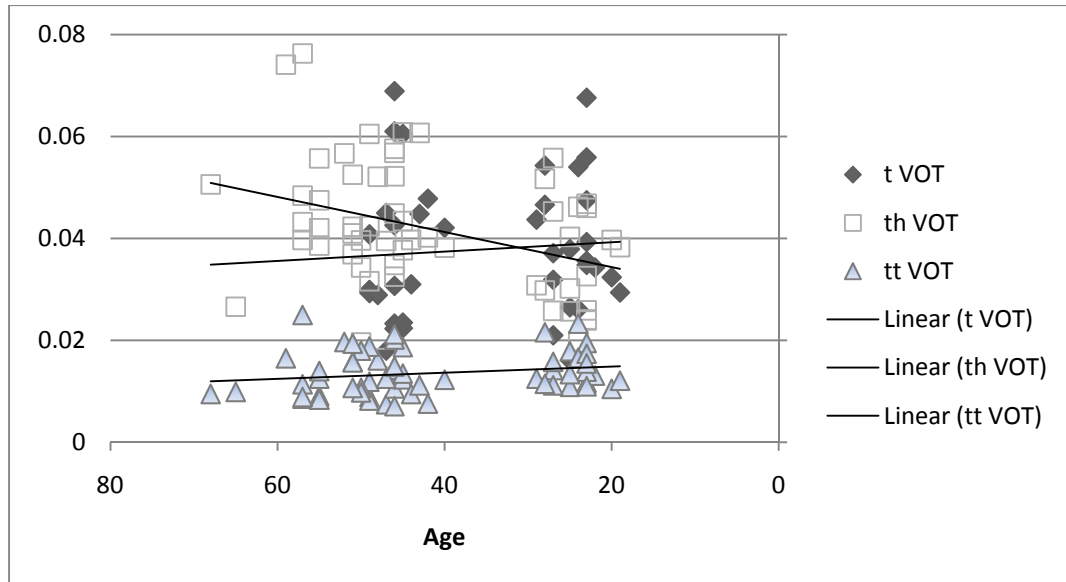


Figure 6. VOT of sentence-initial coronal stops in NIKL (2003) phonetic database, by age. (cf. Park, S.-J. in preparation)

➔ It is not implausible that earlier in Contemporary Korean, the VOT played a more important role in laryngeal contrast of Korean.

(cf. Kang and Han, in preparation: Acoustic study of 1930s Korean)

- Proposal: the shift in the adaptation pattern is a reflection of a change in the cue weighting for laryngeal contrast in Korean.
 - EPK, 1930s: VOT > F0 ➔ English word-initial voiced stops are perceived to be more similar to fortis stops of Korean.
 - Now: F0 > VOT ➔ English word-initial voiced stops are perceived to be more similar to lenis stops of Korean.

(Cf. See Lee, P.-H. 2007 and Oh, M.-R. 2009 for alternative views on the origin of fortis adaptation of English voiced stops.)

(23) Context effect: Fortis adaptation: #_Vowel > #_Consonant

a. Syllable structure restriction and epenthetic vowel

- Korean does not allow a cluster of stop + liquid in the onset. The structure is adapted with vowel epenthesis.

plug ➔ p^hullʌki

truck ➔ t^hirʌk

cream ➔ k^hirim

- If a voiced stop in this position were to be adapted as a fortis stop, a prominent high F0 and non-breathy voice quality would fall on the epenthetic vowel.

drama ➔ Lenis stop adaptation: t̬irama

L

Fortis stop adaptation: t^hirama

H

- A preference for the lax stop adaptation in this context may be due to avoidance of a prominence (high pitch) falling on an epenthetic vowel.
(cf. HEAD-DEP of Alderete 1995; Shinohara 1997; Kenstowicz 2003)

7. Conclusion

- (24) A multitude of factors shape the adaptation pattern in loanwords and a diachronic study of loanwords affords us a better understanding of origins and evolution of adaptation patterns.
- a. Regularization
 - Perceptual mapping is primary in initial adaptations.
 - But, over time, regularization takes place, often based on the phonological categories of the input language, and at later stages, what started out as a phonetic adaptation can morph into phonological adaptation.
 - b. Language internal change
 - Diachronic change in adaptation pattern can provide indirect evidence for language-internal changes in the host language.
- (25) Future studies: More careful look at the effect of Japanese-mediated loans in the development of adaptation patterns. (cf. Kang et al. 2008)

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