

# A diachronic study of yod-dropping in Korean: a loanword connection

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Yoonjung Kang  
University of Toronto  
[yoonyung.kang@utoronto.ca](mailto:yoonyung.kang@utoronto.ca)

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## 1. Introduction

### (1) Place of articulation of Korean affricates

- Posterior coronal: palatal (or post-alveolar)
  - ❖ Huh 1964, K.-M. Lee 1972, 1978, Kim and Ahn 1983, Ahn 1985, Sohn 1987, Cho 1990, H.-B. Lee 1993, K.-S. Kang 2006, 2009...
- Anterior coronal: (denti-)alveolar
  - ❖ Skaličková 1960, H. Kim 1999, 2001, 2004, Anderson et al. 2003, Baek 2003, Kochetov et al. 2009...

	stops /t t* t <sup>h</sup> /	affricates /c c* c <sup>h</sup> /	fricatives /s s* s <sup>h</sup> /
[continuant]	-	-	+
[strident]	-	+	+
[posterior]	-	?	-

### 1.1. Phonological evidence for the “Posterior” view

(2) The phonological evidence for the “posterior” view comes from the interaction of affricates with high front vocoids /i j/.

(3) “Palatalization” (Late Middle Korean 16-17<sup>th</sup> century)

- Coronal stops become affricates before a front high vowel or glide.
  - t, t<sup>h</sup>, (t\*) > c, c<sup>h</sup>, (c\*) / \_\_\_\_ (h) i or j
- Early Middle Korean (14-15<sup>th</sup> century) > Late Middle K. (16-17<sup>th</sup> century)
  - a) t<sup>h</sup>i- > c<sup>h</sup>i- ‘hit’
  - tjəpsi > cəpsi ‘plate’
- Present Day Korean: “palatalization” applies across morpheme boundaries only.<sup>1</sup>
  - b) /mat-i/ [maci] ‘the eldest’
  - /kat<sup>h</sup>-i/ [kac<sup>h</sup>i] ‘together’
  - cf. /titi-ta/ [titita] (<tjɨtjɨta) \*[cicita] ‘to tread’

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<sup>1</sup> Diphthongization of /ij/ to /i/ in early 19<sup>th</sup> century made the palatalization opaque within a morpheme.

(4) Yod-Dropping (Modern Korean, 18-19<sup>th</sup> century)

- Palatal glide /j/ is deleted following affricates.
- $j > \emptyset / c, c^h, (c^*) \text{ \_\_\_}$
- Analysis: an OCP constraint on sequences of palatal consonants (\*Pal.\*Pal.) motivates this deletion.
- EMK (14-15<sup>th</sup> century) > Modern K. (18-19<sup>th</sup> century)
  - a)  $ca\eta$  ‘seal’       $cja\eta$  ‘soy sauce’      >       $ca\eta$
  - $c^ho$  ‘vinegar’     $c^hjo$  ‘candle’      >       $c^ho$

(5) Epenthetic vowels in loanwords

- The default epenthetic vowel is /i/.
  - $milk \rightarrow milk^hi$
  - $boat \rightarrow p^*ot^hi$
- But following English post-alveolar affricates, which are adapted as corresponding Korean affricates, the epenthetic vowel is /i/.
  - $orange \rightarrow orenci$
  - $bench \rightarrow penc^hi$

## 1.2. Arguments against the “Posterior view” (H. Kim 1999, 2001)

(6) “Palatalization”

- The so-called “palatalization” can be more properly analyzed as *assibilation* before a high (front) vowel.
- Coronal stops can assibilate before /i/ without a change in place of articulation in other languages (Finnish, Lomongo, Axininca Campa, and Romanian)
  - a) Romanian
    - $inalt$  ‘high’ (m.)                       $inaltsi$  ‘m. pl’
    - $brad$  ‘fir-tree’                               $brazi$  ‘pl.’

(7) Yod-Dropping

- Yod-Dropping in Mod. K. was in fact more general and affected all sibilants not just affricates.
- /j/ deletes following all **sibilants** (both affricates and fricatives).
  - $j \rightarrow \emptyset / c, c^h, (c^*), s, s^* \text{ \_\_\_}$
- Palatal place is not a necessary condition for Yod-Dropping  
cf. English Yod-Dropping affects not only post-alveolars but coronals in general or even noncoronals in some varieties.
- Early Middle Korean (14-15<sup>th</sup> century) > Modern Korean (18-19<sup>th</sup> century)
  - a)  $ca\eta$  ‘seal’       $cja\eta$  ‘soy sauce’      >       $ca\eta$
  - $c^ho$  ‘vinegar’     $c^hjo$  ‘candle’      >       $c^ho$
  - b)  $so$  ‘pond’       $sjo$  ‘ox’                      >       $so$
  - $s\text{əm}$  ‘stair’       $sj\text{əm}$  ‘island’              >       $s\text{əm}$

(8) Epenthetic vowels in loanwords

- Epenthetic vowel quality is dependent on the place feature of the **English** input consonants not the place of the Korean correspondents.
- English coronal fricatives
  - a) alveolar: *bus* → p\*Λs\*ɪ
  - post-alveolar: *Bush* → pus\*ɪ
- English affricates
  - b) alveolar: *sports* → sip<sup>h</sup>oc<sup>h</sup>ɪ
  - post-alveolar: *bench* → penc<sup>h</sup>ɪ

(9) The facts in (6)-(8) show that these phenomena do not constitute positive evidence for the posterior place of articulation of Korean affricates. At the same time, note that these facts are still compatible with the affricates having posterior coronal place.

### 1.3. Yod-dropping in Contemporary Korean (1890-now)

(10) **Morpheme structure constraints** \*[Tj], \*[Sj], \*[Cj] (where *T*: coronal stops, *S*: coronal fricatives, *C*: coronal affricates): within a morpheme in native words, there is no sequence of coronal obstruent and /j/ as a result of the two historical changes discussed above.  
cf. Clements and Hume 1995: \*CorCor

	EMK	LMK	ModK
coronal stop + j:	[Tj]	> palatalization [Cj]	> yod-dropping [C]
coronal fricative + j:	[Sj]		> yod-dropping [S]
coronal affricate + j:	[Cj]		> yod-dropping [C]

(11) **Derived environment:** Such sequences can arise through morpheme concatenation and glide formation and an asymmetry between [Cj] and [Sj] (and [Tj]) emerges in PDK.

	Enlightenment Period Korean (EPK, 1890-1910)	1930s	Present Day Korean (PDK)
Fricative + j	yod-drop: *[Sj]	yod-drop *[Sj]	<b>no yod-drop: [Sj], OK</b>
Affricate + j	yod-drop: *[Cj]	yod-drop *[Cj]	yod-drop: *[Cj]

(12) EPK and 1930s Korean (Han 2005, Park 2004)

cf. /jΛki-Λ/ → [jΛkjΛ] ‘to consider’

a) \*[Sj]: yod dropping

/mosi-Λtaka/ [mosΛtaka] cf. PDK [mosjΛtaka] ‘to bring(*hon.*)’

/ha-si-Λs-sipnita/ [hasΛs\*imnita] cf. PDK [hasjΛs\*imnita] ‘do-*hon.*-past-state(polite)’

b) \*[Cj]: yod dropping

/p\*aci-Λ/ [p\*acΛ], \*[p\*acjΛ] ‘to fall out’

/cic<sup>h</sup>i-ΛsΛ/ [cic<sup>h</sup>ΛsΛ], \*[cic<sup>h</sup>jΛsΛ] ‘to be tired’

- (13) Present Day Korean
- a) [Tj], [Sj]: no yod dropping  
 /pʌ<sup>h</sup>i-ʌ/ → [pʌ<sup>h</sup>tʃʌ] ‘to withstand’  
 /masi-ʌ/ (→ [masjʌ]) → [mafʌ] ‘to drink’
- b) \*[Cj]: yod dropping  
 /kaci-ʌ/ (→ [kacjʌ]) → [kacʌ] ‘to have’  
 /tac<sup>h</sup>i-ʌ/ (→ [tac<sup>h</sup>jʌ]) → [tac<sup>h</sup>ʌ] ‘to get hurt’

- ⇒ Yod-dropping in derived environments in PDK selectively targets the affricates.  
 cf. Yod-dropping in English affected post-alveolar (and cluster) contexts and then spread to other coronals and non-coronals (Wells 1982).  
 ⇒ Palatal place is not a necessary condition for yod-dropping but it may be a favored context.  
 ⇒ This pattern is a fairly recent development.

#### 1.4. Yod-dropping in English loanwords

- (14) [Tj] and [Sj] are allowed in English loanwords in Present Day Korean.

- a) English coronal stop + j sequences are adapted as [Tj].

*tuna* → t<sup>h</sup>juna  
*duo* → tjuo

- b) English post-alveolar fricatives are adapted as [Sj]

*shopping* → sjop<sup>h</sup>ij  
*show* → s\*jo

- (15) How are English post-alveolar affricates adapted?

A: If Korean affricates are **anterior** coronals, [Cj] is expected, similar to (13b), /ʃ/ → [Sj].

B: If Korean affricates are **posterior** coronals, [C] is expected.

B-i: English affricates are perceived as [C].

B-ii: English affricates are perceived as [Cj] but the native phonotactic constraint selectively drops [j] following affricates due to its more posterior place and [C] emerges.

- (16) Current Normative Convention (Ministry of Education 1979)

➤ /ʃ/ → [Sj]

➤ /tʃ/, /dʒ/ → [C], no mention of /j/ for affricate adaptation

- (17) Actual data: transcriptions of English post-alveolar affricates vary between <C> and <Cj>.

*choice* → <c<sup>h</sup>oisi> ~ <c<sup>h</sup>joiisi>

*junior* → <cuniʌ> ~ <cjuniʌ>

<> mark the orthographic representation.

- (18) H. Kim (2009): English postalveolar affricates are adapted as [Cj].

➤ But, available evidence suggests that the <j> in these words are not actually pronounced except in a very careful speech (K. Kang 2003, 2009, NAKL 2003).

- (19) K. Kang (2003): <j> spelling is spurious. E. postalveolar affricates are adapted as [C].

➤ But, then why are these words spelled with <j> at all as in (16)?

## 1.5. Today's talk

- (20) A diachronic development of the <j> distribution in post-alveolar obstruent adaptation
- Enlightenment Period (1890-1910)
  - The 1930s
  - Present Day Korean (1990s-now)
- (21) A detailed look at the adaptation pattern of /ʃ/ vs. /tʃ ɕ/ in Contemporary Korean
- to examine how “real” the <j> spelling in affricate adaptation is in the larger context of general foreign word transcription convention of the time.

## 2. Background in Korean phonology

- (22) Phoneme inventory of Contemporary Korean (1890-now)<sup>2</sup>

i	(y)	ɨ	u	<table border="1"> <tr> <td>p p<sup>h</sup> p*</td> <td>t t<sup>h</sup> t*</td> <td>k k<sup>h</sup> k*</td> <td></td> </tr> <tr> <td></td> <td>c c<sup>h</sup> c*</td> <td></td> <td></td> </tr> <tr> <td></td> <td>s s*</td> <td></td> <td>h</td> </tr> <tr> <td>m</td> <td>n</td> <td>ŋ</td> <td></td> </tr> <tr> <td></td> <td>L ([l/r])</td> <td></td> <td></td> </tr> <tr> <td>w</td> <td>j</td> <td></td> <td></td> </tr> </table>	p p <sup>h</sup> p*	t t <sup>h</sup> t*	k k <sup>h</sup> k*			c c <sup>h</sup> c*				s s*		h	m	n	ŋ			L ([l/r])			w	j		
p p <sup>h</sup> p*	t t <sup>h</sup> t*	k k <sup>h</sup> k*																										
	c c <sup>h</sup> c*																											
	s s*		h																									
m	n	ŋ																										
	L ([l/r])																											
w	j																											
e	(ø)	ʌ	o																									
(æ)		a																										

- (23) Syllable template: CGVC

- (24) Co-occurrence restrictions on GV sequences (Cho 1988, Kang 1997)

*ji	*jɨ	ju	wi	*wi	*wu
je	jʌ	jo	we	wʌ	*wo
(jæ)	ja		(wæ)	wa	

- (25) Deletion of post-consonantal /j/ before front vowels in native Korean words

- a) PDK (Hong 1994)

/kjecip/ [kecip] ‘girl (pejor.)’  
 /hjet<sup>h</sup>æk/ [het<sup>h</sup>æk] ‘benefit’  
 /kjæ/ [kæ] ‘that kid’  
 cf. /jesul/ [jesul] \*[esul] ‘arts’

- b) 1930s Korean (Han 2005)

/kjesitaka/ [keʃitaka] ‘stay (hon.)-while’  
 /hæsikje/ [hæʃike] ‘sundial’

- c) EPK (Y. Kim 2000, p.69)<sup>3</sup>

/kwankje/ [kwanke] ‘relation’  
 /cihje/ [cihe] ‘wisdom’

<sup>2</sup> Vowels in parentheses are not present in PDK but were present in EPK and 1930s Korean.

- /e/ – /æ/ merger: began around the 1950s and almost complete now.
- /y/ and /ø/ diphthongization: varied between monophthong and diphthongs ([wi], [we]) in EPK and 1930s but mostly realized as diphthongs in PDK.

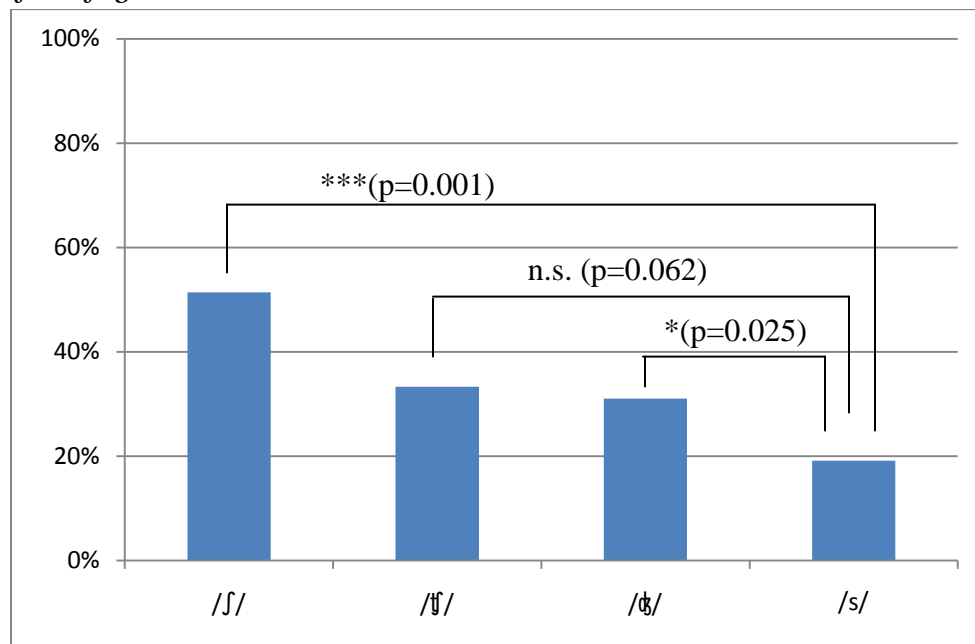
<sup>3</sup> The pronunciation for the EPK data is deduced based on the written form.



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

(32) Reason #1: Difference in the rate of <j> occurrences

➤ /ʃ/ > /tʃ ɟ/ > /s/

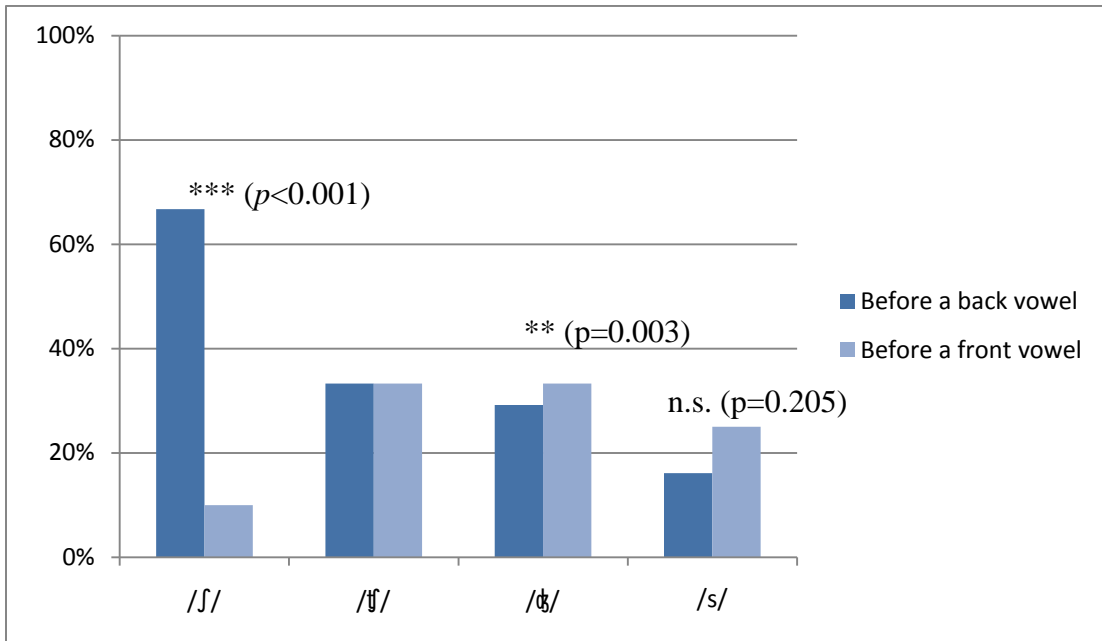


**Figure 1.** The rate of <j> occurrences before vowels that allow /j/ in the adaptation of English consonants in the Enlightenment Period

- The difference between /ʃ/ and /s/ is substantial.
- There is a marginal difference between /tʃ ɟ/ and /s/.

(33) Reason #2: Vowel context effect

- Recall the native phonotactic restriction against [consonant + **j** + front vowel] sequences. cf. (21)
- If <j> represents actual /j/ at some level, we expect <j> to be avoided before a front vowel.
- A significant vowel context effect in the right direction is found for /ʃ/ only.



**Figure 2.** The rate of <j> occurrences before front vs. back vowels in the adaptation of English consonants in the Enlightenment Period

⇒ <j> in /ʃ/ likely represents “real” /j/ at some level but less so for the affricates.

### 3.2. The 1930s

(34) Data Source

➤ Lee Jong-Geuk's *Modern Korean Loanword Dictionary* (1937)

➔ /tʃ/ (N=540), /dʒ/ (N=714), and /ʃ/ (N=798)

(35) 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.

➤ At the same time, the 1930s precede the establishment of the first systematic guideline on foreign word transcription (1941).<sup>5</sup>

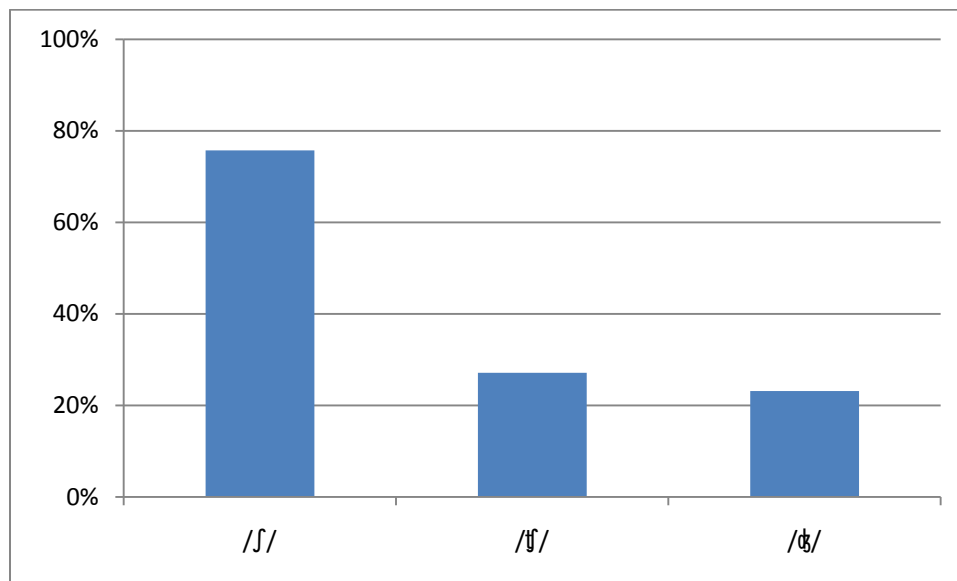
➤ The rate of spurious <j> in /s/ and /z/ adaptation in the same data source is less than 1%.

▪ /s/ as [sj]: 7 out of 889

▪ /z/ as [cj]: 1 out 145

(36) The rate of <j> occurrences: /ʃ/ >> /tʃ dʒ/ >> /s z/

(p<0.0001) (p<0.0001)

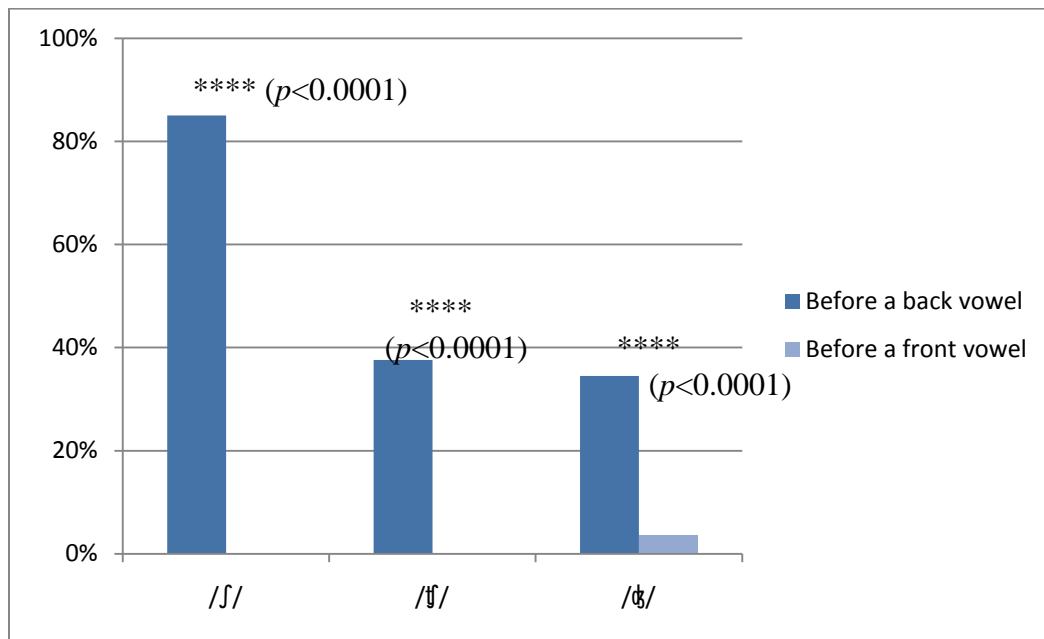


**Figure 3.** The rate of <j> occurrences front vs. back vowels in the adaptation of English consonants in *Modern Korean Loanword Dictionary* (1937)

➤ The rate is substantially higher for /ʃ/ than for /tʃ dʒ/ and substantially higher for /tʃ dʒ/ than for /s z/.

<sup>5</sup> The data for /tʃ/ adaptation in 1930s Korean were discussed in Kang and Hong (2009).

(37) The vowel context effect is (close to) categorical for all three consonants.



**Figure 4.** The rate of <j> occurrences before front vs. back vowels in the adaptation of English consonants in *Modern Korean Loanword Dictionary* (1937)

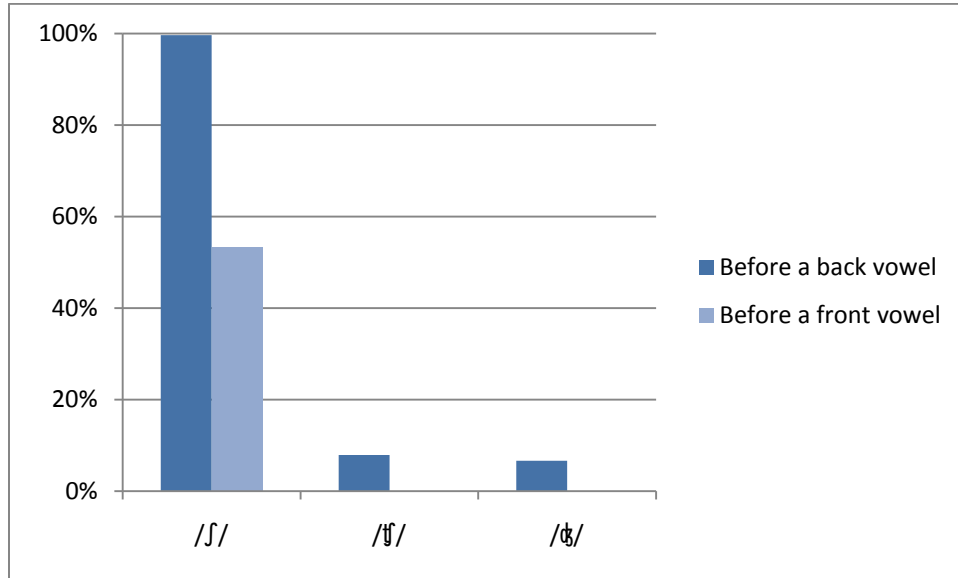
- ⇒ <j> in all three consonants likely represent “real” /j/.
- ⇒ /j/ occurs at a far higher rate for /ʃ/ than for /tʃ/ dʒ/.

### 3.3. PDK

(38) Data Sources

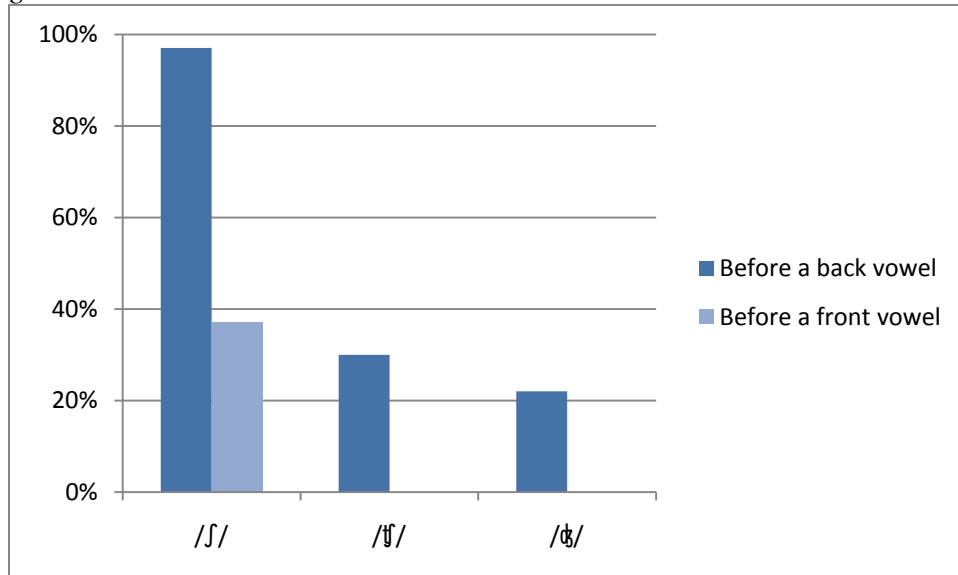
- *The National Academy of the Korean Language* (1991): a compilation of English loanwords in magazines and newspapers published in 1990. → /tʃ/ (N=210), /dʒ/ (N=215), and /ʃ/ (N=285)
- Google searches (July–August 2009): loanforms of 183 English words that contain one of the three English post-alveolar obstruents. → /tʃ/ (N=74), /dʒ/ (N=62), and /ʃ/ (N=47)

(39) NAKL



**Figure 5.** The rate of <j> occurrences before front vs. back vowels in the adaptation of English consonants in NAKL (1991)

(40) *Google*<sup>6</sup>



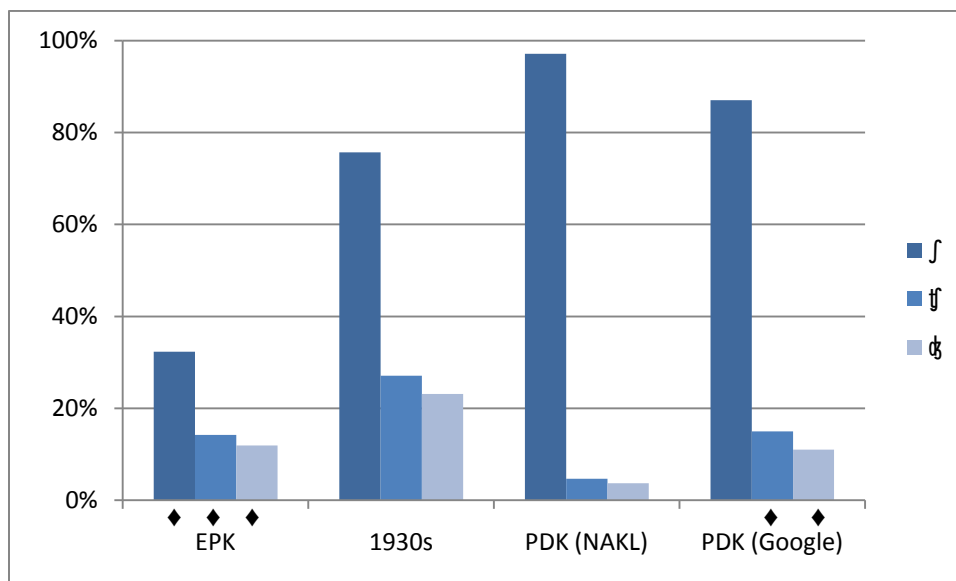
**Figure 6.** The average rate of <j> occurrences before front vs. back vowels in the adaptation of English consonants in *Google* searches (2009)

<sup>6</sup> <j> occurs for /z/ in back vowel contexts at the rate of 5%.

- Close to categorical occurrence of /j/ for /ʃ/ before a back vowel.
- A substantial rate of /j/ for /ʃ/ even before a front vowel.
- A slight decline in the rate of <j> for affricates.

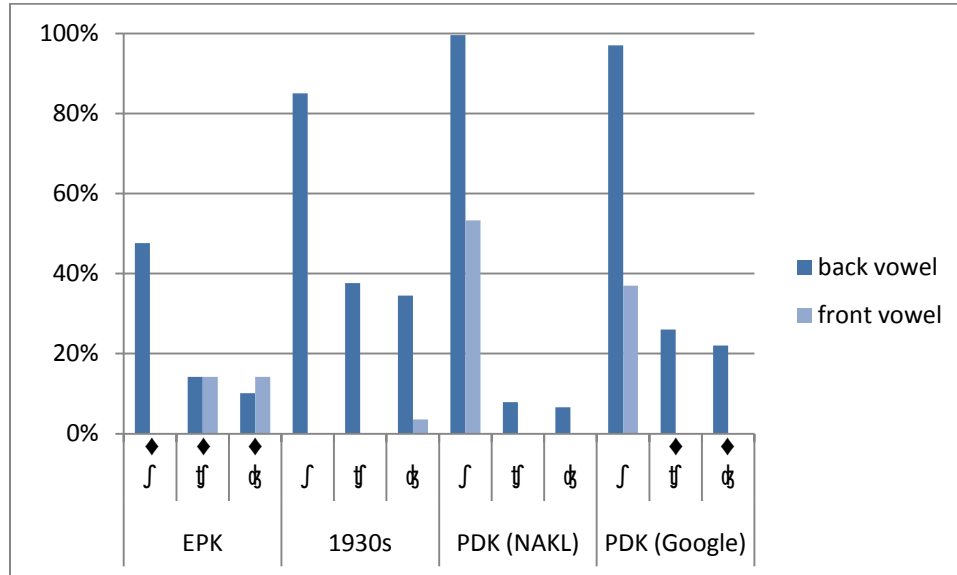
### 3.4. Summary

(41) Fricative vs. Affricate: [Sj] for /ʃ/ occurs at a far higher rate than [Cj] for /tʃ ɕ/.



**Figure 7.** The rate of /j/ occurrences for /ʃ tʃ ɕ/ in three times periods of Contemporary Korean. (◆: estimated rate of actual /j/ by subtracting the rate of spurious <j> in alveolar sibilant adaptation in the same data source.)

- (42) Vowel context effect: <j> occurs at a higher rate before a back vowel than before a front vowel and in many cases, <j> is categorically absent in front vowel contexts. Exception to this pattern is found:
- in the affricate adaptation in EPK where the vowel context does not have any effect on the distribution of <j>.
  - in the PDK /ʃ/ adaptation, where /j/ occurs at a substantial rate even before front vowels.



**Figure 8.** The rate of /j/ occurrences for /ʃ ʧ ʤ/ by vowel context in three times periods of Contemporary Korean.

- (43) Increase in /sj/ adaptation for /ʃ/: over time, the rate of /ʃ/ adapted with <j> has steadily increased, indicating the gradual relaxation of native phonotactic restriction against fricative + j sequences. Also in PDK, /sj/ adaptation occurs at a substantial rate even in front vowel contexts, where /j/ is usually avoided.
- (44) <j> in affricates: /j/ rate in affricates, however, did not increase significantly over time. Initially there was a slight increase from EPK to the 1930s and then the rate decreased in PDK.

## 4. Discussion

### 4.1. Anterior or Posterior?

(45) (=15) How are English post-alveolar affricates adapted?

A: If Korean affricates are **anterior** coronals, [Cj] is expected, similar to (13b), /ʃ/ → [Sj].

B: If Korean affricates are **posterior** coronals, [C] is expected.

(46) Support for the “Anterior” view (A)

- The <j> found in the affricate adaptation is not all spurious.
  - <j> occurs at a higher rate for the affricates than for English alveolar consonant adaptation (/s z/).
  - For the most part, its distribution is sensitive to the phonotactic restriction (\*consonant + j + front vowel).
- Korean affricates are less “palatal-like” than English affricates → occurrences of [Cj]

(47) Support for the “Posterior” view (B)

- At the same time, the rate of <j> is substantially lower for the affricate adaptation than for the corresponding fricative adaptation.
- Korean affricates are more “palatal-like” than Korean fricatives → less occurrences of [Cj].

(48) This ambiguous patterning of the affricates is in fact compatible with the phonetic characteristics of the affricates.

a) Articulatory studies

- ❖ X-ray (Skaličková 1960), static palatography (H. Kim 2001, Anderson et al. 2003), MRI (H. Kim 2004) and Electropalatography (Baek 2003 and Kochetov et al. 2009)

➤ Main constriction

- i. Anterior, definitely not “palatal” (although most are based on the stop portion of affricates not the fricative portion).
- ii. Some find that the affricate (c c<sup>h</sup> c\*) constriction is relatively more posterior than that for (denti-) alveolar stops (t t<sup>h</sup> t\*) and fricatives (s s\*), but others do not find such difference.

➤ Tongue body position: fronter and higher for affricates than for stops and fricatives.

b) Acoustic studies

- ❖ H. Kim (2001), Hwang (2003)

➤ Main constriction

- i. Frication noise: lower COG (frequency) for affricates (c c<sup>h</sup> c\*) than fricatives (s s\*) → compatible with more posterior constriction for affricates

➤ Tongue body position

- i. F2 transition: higher F2 transition for affricates (c c<sup>h</sup> c\*) than for stops (t t<sup>h</sup> t\*) and fricatives (s s\*) → fronter (and higher) tongue body position for affricates

c) Affricates are definitely **not palatal** but **more palatal-like** than anterior stops and fricatives.

d) “The anterior/posterior distinction is **relative**, and does not seem to be tied to any specific articulatory landmark (such as the corner or the centre of the alveolar ridge).” (Kochetov, Colantoni, Kang, and Radišić 2009)

(49) Further support for the intermediate phonetic characteristics of Korean affricates from interlanguage phenomenon

- English speakers' perception of Korean consonants (Schmidt 2007)
  - Korean affricates are transcribed as alveolar stops at a substantial rate
  - /c/: 13%, /c<sup>h</sup>/: 39%, /c\*/: 18%
- Korean speakers' production of Japanese alveolar affricate [ts] (Yamakawa et al. 2006)
  - Japanese contrasts alveolar and alveolo-palatal affricates [ts] vs. [tɕ] before /u/
  - Japanese alveolar affricates, as in *matsu* 'pine, wait' and *tsuma* 'wife', produced by Korean learners of Japanese tend to be heard as alveolo-palatal affricates, i.e., *machu* and *chuma* with [tɕ], by native Japanese listeners.
  - This indicates that Korean speakers replace the Japanese affricates with the Korean affricates in their Japanese production and that the Korean affricates are not quite alveolar and in fact closer to the Japanese alveolo-palatal affricate than the alveolar affricate, at least as perceived by the native Japanese speakers.

## 4.2. Diachrony

(50) Erosion of \*[Sj] in Contemporary Korean

- Loanwords led the way.
- The change in the native pattern may possibly be due to the contact with English.

	<i>EPK</i>	<i>the 1930s</i>	<i>PDK</i>
Native MSC	*	*	*
Native Derived	*	*	OK
Loanwords (back vowel)	48%♦	85%	97% (Google)

(51) \*[Cj]

- No consistent upward trend for [Cj]

	<i>EPK</i>	<i>the 1930s</i>	<i>PDK</i>
Native MSC	*	*	*
Native Derived	*	*	*
Loanwords (/tʃ/, back vowel)	14%♦	35%	26% (Google) ♦

- Initial increase: erosion of \*[Cj] due to contact?
- Subsequent decrease
  - There is a possibility that Korean affricates became “more posterior” over time in Contemporary Korean, possible due to the influence of English affricates.

(52) Diachronic study of Acoustic data (Chung 2002)

	<i>1950s</i>	<i>1960s</i>	<i>1970s</i>	<i>1980s</i>
<b>Proportion of affricates realized as “alveolar”</b>	13.6% (N=1402)	7.6% (N=2426)	3.4% (N=2245)	0% (N=unknown)

**Table 1** The rate of affricates realized as “alveolar” in news broadcast data (From Chung 2002)

(53) Survey of descriptions of POA of affricates in the phonetic/phonological literature (Choi 1977)

- “Alveolar” : 1934, 1937, and 1947 → found in earlier years
- “Alveolo-palatal”, “Pre-palatal” or “palatal”: 1937, 1955, 1960, 1963, 1964, 1965, 1966, 1967, 1976, and 1977 → tend to be later

### 4.3. Implication for contrast and feature theory?

(54) Modified Contrastive Specification and the Contrastivist Hypothesis (Dresher et al. 1994, Hall 2007, Dresher 2009)

- Only minimal specification enough to make distinction among phonemes should be visible to phonology.
- For three-way contrast, three features are redundant, at least one of them should be “mute” in phonology.

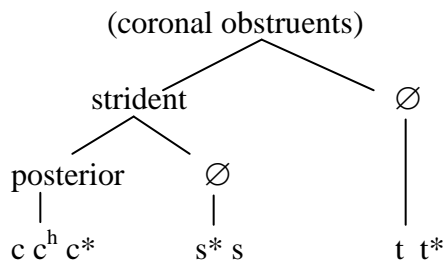
	stops /t t* t <sup>h</sup> /	affricates /c c* c <sup>h</sup> /	fricatives /s s* s <sup>h</sup> /
[continuant]	-	-	+
[strident]	-	+	+
[posterior]	-	+	-

- The recent development in yod-dropping pattern activated **[posterior]**.
- Under the Contrastivist Hypothesis, this activation can be possible only if one of the other features ([cont] or [strident]) are/becomes inactive.
- Evidence that [strident] was active around Late 19<sup>th</sup> century

- Yod-dropping targets sibilants.
- Fronting of /i/ to /i/ following sibilants

silh-ta	‘to dislike’	>	silh-ta
simkʌp-ta	‘flavorless’	>	siŋkʌp-ta
s*is-ta	‘to wash’	>	s*is-ta
cimsɔjŋ	‘animal’	>	cimsiŋ
c <sup>h</sup> i-ta	‘to hit’	>	c <sup>h</sup> i-ta

- Not clear evidence for [continuant] I know of.



## 5. Conclusions

- (55) The ambiguous patterning of English affricate adaptation is compatible with the intermediate phonetic characteristics of Korean affricates.
- (56) A relative definition of [posterior] seems more useful/relevant.
- (57) Contemporary Korean: An asymmetry between affricates and other coronal obstruents emerged in Yod-Dropping, activating [posterior] feature in coronal obstruents.
- (58) This development is likely related to contact with English.

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