

Neutralization and anti-homophony in Korean

Daniel Silverman
McGill University
dan.silverman@mcgill.ca

- Obstruent coda neutralization in Korean is a case *par excellence* of neutralization, and suggests that phonological systems are not influenced by functional considerations such as *contrast maintenance*.
- However, a language could *never* evolve towards a state in which its communicative function becomes genuinely eroded.
- The real question: does neutralization induce extensive homophony?
- Real-world knowledge plays a great role in disambiguating homophonous forms, but in many cases neutralization is tolerated *exactly because* the phonology and/or morphology provides an “escape hatch”; the threat of ambiguity is curtailed.
- The proposal: in Korean, coda neutralization developed *exactly because* the language had morphological means to countervail the threat of homophony/ambiguity.

Goals of this presentation:

- Exemplify the neutralization pattern of Korean coda obstruents.
- Investigate the extent of potential and actual homophony.
- Trace the historical development of the pattern.
- Consider phonetic and morphological motivation for the sound change.

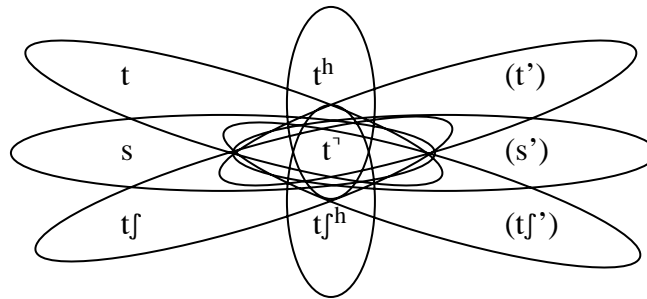
(1) Obstruent onset and coda contrasts in Korean:

	<i>Onsets</i>				
	<i>Labial</i>	<i>Coronal</i>			<i>Velar</i>
	Stop	Stop	Fricative	Affricate	Stop
Lenis	p	t	s	tʃ	k
Aspirated	p ^h	t ^h		tʃ ^h	k ^h
Glottalized	pʼ	tʼ	sʼ	tʃʼ	kʼ
<i>Codas</i>	p̚	t̚			k̚

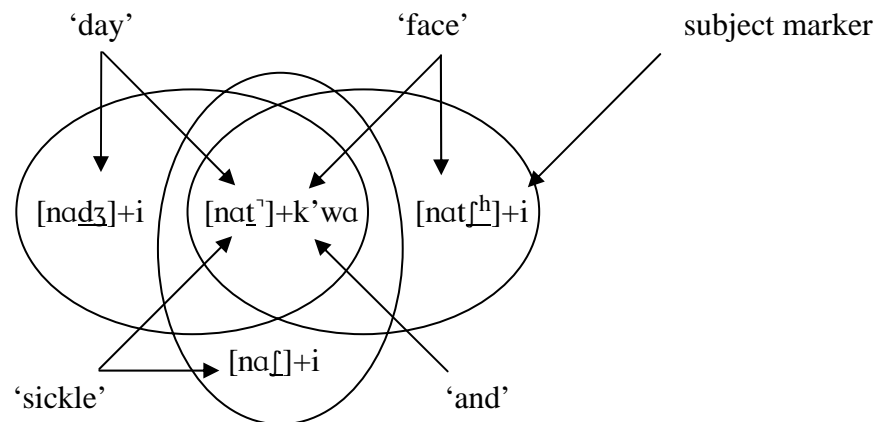
(2) A few examples (from Jun, in progress):

Stem-Final C	(i) Locative (-e)	(ii) Nominative (-i)	(iii) Isolation Form	gloss
<u>Coronal</u>	os-e	oʃ-i	ot ^ˀ	‘clothes’
	pat ^h -e	patʃ ^h -i	pat ^ˀ	‘field’
	nadʒ-e	nadʒ-i	nat ^ˀ	‘day’
	pitʃ ^h -e	pitʃ ^h -i	pit ^ˀ	‘light’
<u>Labial</u>	pab-e	pab-i	pap ^ˀ	‘rice’
	ip ^h -e	ip ^h -i	ip ^ˀ	‘leaf’
<u>Velar</u>	kug-e	kug-i	kuk ^ˀ	‘soup’
	pak’-e	pak’-i	pak ^ˀ	‘outside’
	puək ^h -e	puək ^h -i	puək ^ˀ	‘kitchen’

(3) Potential neutralizations among coronal obstruents in Korean:



(4) Neutralization may induce homophony—a counter-functional development:



(5) Moreover, nouns often appear unsuffixed.

Isolation Form	Gloss
ot̚	‘clothes’
pat̚	‘field’
nat̚	‘day’
pit̚	‘light’
pap̚	‘rice’
ip̚	‘leaf’
kuk̚	‘soup’
pak̚	‘outside’
puək̚	‘kitchen’

- Shouldn’t this neutralization induce *massive* homophony?
- Are Korean speakers constantly misunderstanding each other?
- Of course not: the *potential* for homophony is not manifested to any significant degree.

(6) Distribution of final obstruents for 35,908 nouns, from The Sejong Project (<http://sejong.or.kr/english/index.html>), a 1.5 million word corpus.

<u>Labial</u>		<u>Coronal</u>		<u>Velars</u>	
p	1164	t	1	k	3508
p ^h	38	t ^h	16	k ^h	12
p’	0	t’	0	k’	4
		tʃ	72		
		tʃ ^h	74		
		tʃ’	0		
		s	257		
		s’	0		

- Clearly, the opportunities for neutralization are rather limited, and the chances of homophony are extremely low.

(7) Exhaustive list of *possible* homophonic nouns in the corpus (most likely candidates are **bold**. (NNG = General noun, NNP = Proper noun, NNB = (a type of) bound forms, e.g. classifiers, unit of measure, NR = ???).

Transliteration	Noun Type	Freq.	Hangul	Source	Gloss
{Cham-Kkoch}	NNG	3	참꽃	native	real-flower 'Rhododendron weyrichii'
{Cham-Kkoch}	NNP	2	참꽃	native	real-flower 'Rhododendron weyrichii'
{Cin-Tal-Rae-Kkoch}	NNG	22	진달래꽃	native	azalea; <i>Rhododendron mucronulatum</i>

{Cin-Tal-Rae-Kkoch}	NNP	2	진달래꽃	native	azalea; <i>Rhododendron mucronulatum</i>
{i-Keos}	NNG	4	이것	native	this-thing
{i-Keos}	NP	1466	이것	native	this-thing
{in-Theo-Nes}	NNG	93	인터넷	Eng. Loan	internet
{in-Theo-Nes}	NNP	2	인터넷	Loan	internet
{Keos}	NNB	40544	것	Native	thing
{Keos}	NNG	9	것	Native	thing
{Mas}	NNG	392	맛	Native	taste
{Math}	NNG	3	말	Native	???
{Mu-eos}	NNG	3	무엇	Native	what
{Mu-eos}	NP	2156	무엇	Native	what
{Myeoch-Myeoch}	NNG	2	몇몇	Native	several
{Myeoch-Myeoch}	NR	14	몇몇	Native	several
{Nach}	NNG	91	낯	Native	face
{Nas}	NNG	25	낫	Native	sickle
{No-Reus}	NNB	143	노릇	Native	job, function
{No-Reus}	NNG	14	노릇	Native	job, function
{Pat}	NNG	2	받	Native	???
{Path}	NNG	380	밭	Native	field
{Pic}	NNG	128	빚	Native	debt
{Pich}	NNG	726	빛	Native	light
{Pyeos}	NNG	6	뿔	Native	crest (of a fowl)
{Pyeoth}	NNG	32	별	Native	sunshine
{Sae-u-Ceoc}	NNG	2	새우젓	Native	pickled shrimps % I think this is spelled wrong
{Sae-u-Ceos}	NNG	8	새우젓	Native	pickled shrimps
{Such}	NNG	14	숯	Native	charcoal
{Suth}	NNG	7	술	Native	(hair) density
{Teoch}	NNG	31	덧	Native	trap
{Teos}	NNG	4	덧	Native	a short time
{a-Rap}	NNG	6	아랍	Loan	Arab
{a-Rap}	NNP	36	아랍	Loan	Arab
{a-Sap}	NNG	2	아삽	Sino	(a kind of) shovel
{a-Sap}	NNP	7	아삽	Sino	(a kind of) shovel
{Cheop}	NNB	8	첩	Sino	a dose of
{Cheop}	NNG	14	첩	Sino	mistress or album??
{ip}	NNG	1139	입	Native	mouth
{iph}	NNG	158	잎	Native	leaf
{Kyo-Hyeop}	NNG	4	교협	Sino	a council for teachers
{Kyo-Hyeop}	NNP	27	교협	Sino	a council for teachers

{Man-Kuk-Kong-Peop}	NNG	4	만국공법	Sino	world-wide public law
{Man-Kuk-Kong-Peop}	NNP	3	만국공법	Sino	world-wide public law
{Mil-Cip}	NNG	21	밀집	Sino	crowd
{Mil-Ciph}	NNG	2	밀짚	Native	wheat straw
{Mu-Ryeop}	NNB	305	무렵	Native	time, around
{Mu-Ryeop}	NNG	2	무렵	Native	time, around
{o-Ci-Rap}	NNG	4	오지랍	Native	% spelled wrong: the bottom is correct
{o-Ci-Raph}	NNG	3	오지랖	Native	the front of an outer garment
{Peop}	NNB	259	법	Sino	law
{Peop}	NNG	698	법	Sino	law
{Phyeong-Hyeop}	NNG	2	평협	Sino	% I guess some kind of council
{Phyeong-Hyeop}	NNP	2	평협	Sino	% I guess some kind of council
{Sang-eop}	NNG	162	상업	Sino	commerce
{Sang-eop}	NNP	3	상업	Sino	commerce
{Seo-ul-Ko-Peop}	NNG	12	서울고법	Sino	Seoul high court
{Seo-ul-Ko-Peop}	NNP	15	서울고법	Sino	Seoul high court
{Seo-ul-Tae-Peop}	NNG	12	서울대법	Sino	Seoul supreme court
{Seo-ul-Tae-Peop}	NNP	6	서울대법	Sino	Seoul supreme court
{Sin-Hyeop}	NNG	2	신협	Sino	some kind of council
{Sin-Hyeop}	NNP	38	신협	Sino	some kind of council
{The-ip}	NNG	2	테입	Loan	tape
{The-iph}	NNG	9	테잎	Loan	tape

- **Ten (10) likely cases in all.**
- **Low token frequency for one or both members.**
- As for *verb roots*, they are obligatorily suffixed, and many of these suffixes are vowel-initial. Homophony is extremely rare here as well. (I'm currently compiling the list of relevant verb roots.)
- Isn't it remarkable that the system has so little homophony? Well, it's not magic...
- Let's delve into history a bit...

(8)

1300 years ago	1100 years ago	500 years ago	400 years ago
Sino-Korean vocabulary, with its unreleased final stops, is well-established, supplanting many native nouns with two-root compounds.	Root-final [t ^h], [tʃ], and [s ^h] are still found in final position, and before consonants, in native Korean	Influenced by the Sino-Korean root-structure, [t ^h], [tʃ], and [tʃ ^h] become [tɿ] in these positions. But verbs alternate, and Sino-Korean nouns are compounds.	[s] alternates with [tɿ] in these positions as well. Still, there are few adverse functional consequences.

- Korean has witnessed a massive influx of Chinese words in its distant past, which served to supplant a significant portion of its native vocabulary, particularly its *noun* inventory.
- During the era of borrowing, Chinese only had [pɿ, tɿ, kɿ, m, n, ŋ] in root-final position, while native Korean had all the contrasts that are now neutralized ([t, t^h, t', s, s', tʃ, tʃ^h, tʃ']). These root-final consonants may even have been present in word-final position.
- The influx of Chinese nouns into Korean eventually led to a reduced set of word-final obstruents, even for native words, which previously possessed releases.
- Loss of release is a common development.
- These changes rendered the native Korean vocabulary *more similar in structure* to the Sino-Korean vocabulary: final stops in the Sino-Korean vocabulary were always unreleased, and so the evolution towards unreleased final stops in the native vocabulary rendered the two systems more similar to each other in this respect.
- This is a rather common phenomenon: upon the influx of foreign elements, the phonological properties of a language may change; incoming patterns may eventually modify, or even supplant native ones.
- Why didn't this induce massive homophony?
- This reduction in contrastive sounds was offset by the compounding process, which greatly increased the opportunity for nouns to contrast with each other.
- Most Korean nouns of Chinese origin are actually compounds of *two* Chinese roots.

(9) Schematic:

Native Korean nouns:

XYtɿ

XYt^h

XYs

XYtʃ

Sino-Korean nouns:

ABC+XYtɿ

DEF+XYtɿ

GHI+XYtɿ

JKL+XYtɿ ...etc.

- For example, [ho], meaning “good”, cannot stand on its own, but it often combines with other roots: [ho+gi] good opportunity, [ho+sa], happy event.
- So, any limitations on the number of possible contrasts imposed by the smaller inventory of Chinese root-final consonants was offset by these roots' combination and recombination into new and varied compounds.
- In its pre-history, Korean was probably perfectly happy with its many root-final consonants that always manifested themselves because they were released.

- However, due to the influx of Sino-Korean morphemes, with its system of unreleased root-final consonants, the *possibility* of the sound change was “encouraged”, and ultimately *actualized*.
- That is, since the extensive Sino-Korean vocabulary had a fairly simple system of root-final consonants, this eventually had the effect of triggering a change in the native system of word-final consonants (which is a common sort of sound change even without any external “encouragement”).
- So when native Korean roots stood alone, and when they were followed by a consonant, they eventually came to conform to the Sino-Korean pattern that was so extensive.
- **It’s likely that unreleased stops became so pervasive *only* because communication was not adversely affected, due to the compounding of Sino-Korean nouns.**
- **The new prevalence of nouns with unreleased root-final consonants may have triggered the loss of releases in the verb system as well, which was tolerated because the many vowel-initial suffixes which accompany verbs results in alternations which salvage the contrasts that are dependent on the stop release.**
- ***Indeed, it is almost unimaginable that Korean would have tolerated the development of unreleased stops if it would have resulted in extensive homophony and ambiguity of word meaning.***
- (1) Q: Is it just a fortuitous coincidence that both verbs and nouns—for completely different reasons—are so rarely homophonous?
- (2) Q: Could this situation have been brought about by design, in the sense that Chinese nouns were *intentionally* turned into compounds of two morphemes in order to increase the number of possible contrasts, and the replacement of native Korean verbs with single Chinese roots was *intentionally* resisted?
- A: (1) No. (2) No.
- There is no *intention* involved. Rather, the Korean phonological system simply evolved passively as a consequence of its communicative function.

What does the Korean pattern suggest?

- Neutralization is counter-functional only to the extent that it induces homophony.
- Neutralization is unlikely to induce significant homophony/ambiguity of word meaning.
- Neutralization may become extensive, but only provided that significant homophony is not induced.