

Variation of consonant-final nouns in Heritage Korean in Toronto: Default preference or statistical knowledge

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Heritage Speakers

- “individuals raised in home where a language other than English is spoken and who are to some degree bilingual in English and the heritage language” (Polinsky and Kagan 2007, p.369, attributed to Valdés 2000)
- early exposure to L1 at home
- limited access to learning data
- little/no formal schooling in the language
- Incomplete acquisition (fossilization of an intermediate stage of acquisition)
- Attrition and reanalysis

Morphology of heritage language

- Overregularization in morphological paradigms, elimination of irregulars and infrequent forms
 - Russian (Polinsky 2008); Korean (Choi 2003); Spanish (Montrul 2002); Finnish (Halmari 1998, 2005); Yiddish (Levine 2000); Czech (Dutkova 1998); Italian (Caruso 2004); Polish (Cozen 2003)
- Not necessarily due to contact with dominant language
 - Also found under the dominance of a language with rich morphology
 - Turkish in Netherlands (Backus 1999), Russian in Finland (Leisio 2001)

Paradigm Uniformity, a default preference?

- Paradigm uniformity as default preference
 - High ranking OO-faithfulness constraints in the initial state of UG (McCarthy 1998, Hayes 2004, Tessier 2006)
- Paradigm leveling is a case of analogical extension
 - There is no case of paradigm leveling in the absence of dominant model in the language (Garrett 2008)
- Intermediate stages of acquisition
 - Child language (Tessier 2007, Do 2010a, b)
 - **Heritage language**
 - “incomplete acquisition” or “attrition”

Korean consonant inventory

p p ^h p'	t t ^h t' c c ^h c' s s'	k k ^h k'	
m	n	ŋ	h
	L ([l/r])		
w	j		

Neutralization and alternation

- Coda neutralization in obstruents

/p p^h p'/ → [p]

/k k^h k'/ → [k]

/t t^h t' s s' c c^h c' h/ → [t]

- Coda cluster simplification

– CC → C in coda (syllable template: CGVC)

- Alternation

	___in (TOP.)	___#	___to ('also')	
/ap ^h /	a.p ^h -in	ap	ap-t'o	'front'
/kaps/	kap.s'-in	kap	kap-t'o	'price'

Neutralization

- Neutralization of underlying contrast

	___in (TOP.)	___#	___to ('also')	
/hɪlk/	hɪlk-in	hɪk	hɪk-t'o	'soil'
/hɪk/	hɪk-in	hɪk	hɪk-t'o	'black'
/nat ^h /	nat ^h -in	nat	nat-t'o	'individual'
/nac ^h /	nac ^h -in	nat	nat-t'o	'face'
/nac/	nac-in	nat	nat-t'o	'day'
/nas/	nas-in	nat	nat-t'o	'sickle'

Adult Korean

- Reanalysis based on the unsuffixed form as base

Kwak 1984, J. Choi 1986, Ko 1989, AKS 1990-1995, H. Kang 1992, Kenstowicz 1997, Hayes 1998, H. Sohn 2001, Albright 2002, 2005, 2009, Y. Kang 2002, 2003, 2005, 2007, K-J. Lee 2002, NIKL 2004, E. Kang et al. 2004, S., Idsardi 2005, Park 2006, Davis and Kang 2006, Jun 2007, 2010, Jun and Lee 2007, Silverman 2009, Ito 2010, etc.

- In Homeland Korean: extension of *frequent* patterns (alternation or leveling)

- Labial, dorsal stops, clusters: Leveling

[mulip] ~ [mulip^h-i] ‘knee’ ⇒ [mulip] ~ [mulip-i]

- **Coronal obstruents: Alternation**

[k’ot] ~ [k’oc^h-in] ‘flower’ ⇒ [k’ot] ~ [k’os-in]

[k’ot] ~ *[k’ot-in]

- Lexical gap: there is no /t/-final nouns in Present Day Korean

Child or Heritage Korean?

- Child Korean?
 - Not aware of any study that observes such leveling.
- Heritage Korean?
 - Anecdotal observation of leveling that is unattested in homeland Korean: [ot] ~ [os-in]
⇒ [ot] ~ [ot-in]
 - No systematic study
- Preference for paradigm uniformity in the absence of statistical basis of analogical extension?

Participants

- **Heritage speakers**
 - born and raised in N. America
 - primary caregivers must be Native speakers of Korean
 - full fluency is not required
 - **7 (3 female, 4 male)**
- **Native speakers**
 - have resided in Korea until 16yrs of age or older
 - from Seoul and surrounding area
 - **9 (5 female, 4 male)**
- **Others**
 - Born and raised in Korea and came to N. America at the age of
 - 3yr, 5yr, 6yr, 7yr, 9 yr, 13 yr, 14yr, 15 yr...
 - Born in Canada, moved to Korea at 6-12, moved back to Canada
 - Born and raised in Canada, visited Korea every year until 14yr. Of age
 - **10 (7 female, 3 male)**
- All are students of University of Toronto Scarborough (age: 17-24)

Task

- Sentence completion

- The experimenter (the second author) pronounces a noun in isolation and prompts the participant to complete a sentence using the noun.

e.g. Noun: /pam/ ‘chestnut’

‘___+subj. is big’ / ___**i** k^hita/ → [pam-i k^hita]

‘___+top. is big’ / ___**in** k^hita/ → [pam-in k^hita]

- Two rounds: once with a subject marker and once with a topic marker
- 7 different sentence frames are used to make the sentence semantically natural when combined with the target word.
- For each sentence type, between 1 and 6 practice items, which were all sonorant final and distinct from the target items, were presented before the test items were given.

Material

- Sonorant-final (N=33)
 - no alternation
 - /nun/ ‘eye’ [nun] ⇒ [nun-i] [nun-in]
- Plain stop-final (N=11)
 - no alternation
 - /pap/ ‘meal’ [pap] ⇒ [pap-i] [pap-in]
- Other obstruent/cluster-final (N=41)
 - Alternation
 - /pak*/‘outside’ [pak] ⇒ [pak’-i] [pak’-in]
 - /kaps/‘price’ [kap] ⇒ [kaps’-i] [kaps’in]
- Total: 85 nouns * 2 suffixes → 170 sentences

Material

Sonorant-final	/m/	7
	/n/	6
	/ŋ/	7
	/l/	13
Coronal obstruent	/c/	3
	/c ^h /	5
	/s/	10
	/t ^h /	9
Labial obstruent	/p/	6
	/p ^h /	7
Dorsal obstruent	/k/	5
	/k ^h /	2
	/kʻ/	1
Cluster	/ks/	1
	/lk/	2
	/ps/	1

Language background

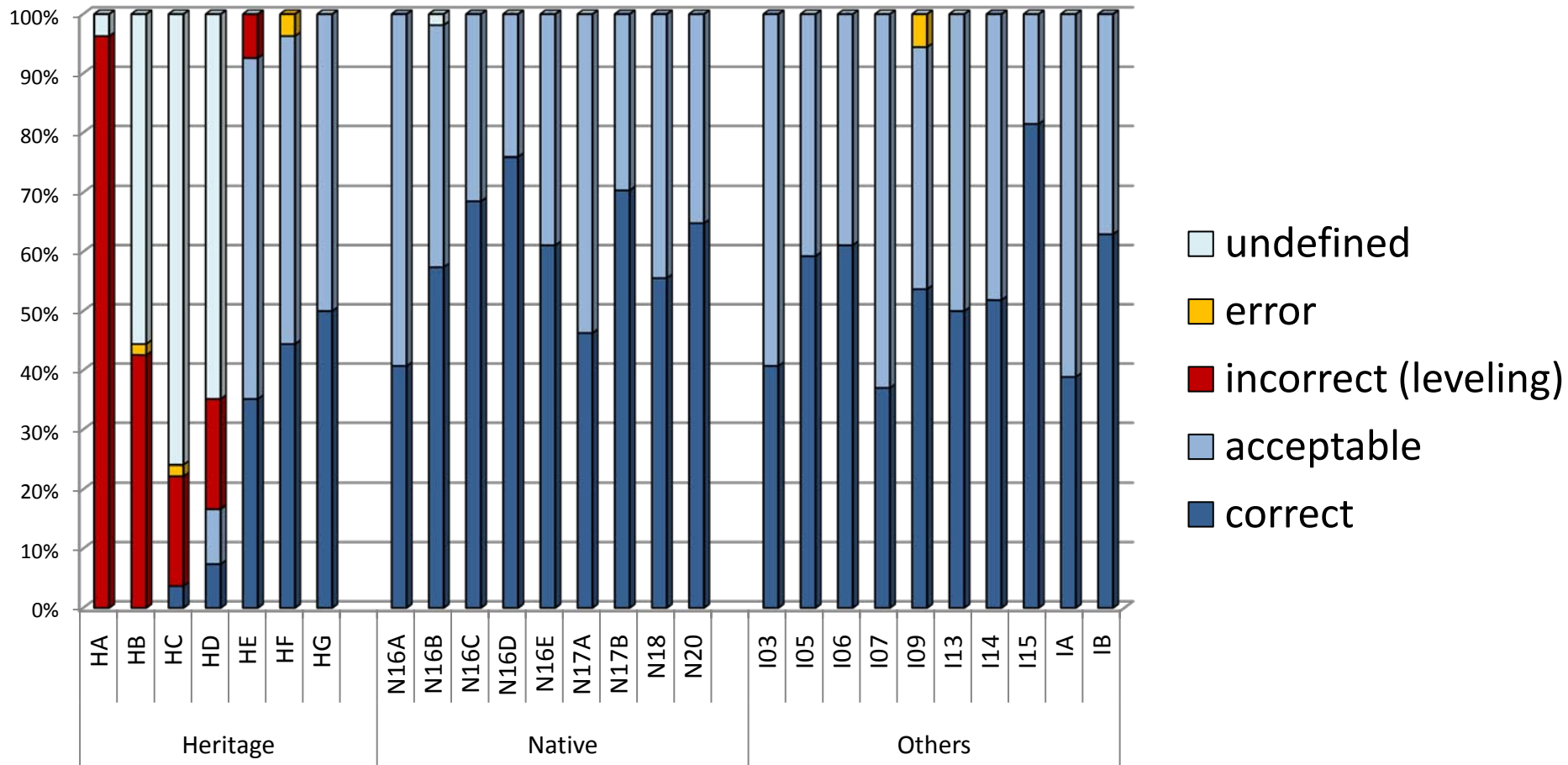
- Lexical knowledge
 - Translation: Korean → English
 - 76 Korean nouns (Frequency count based on NIKL2002)
 - 19 words from the *high* frequency range (500+ count)
 - 38 words from the *mid* frequency range (100~499 count)
 - 19 words from the *low* frequency range (10~99 count)
- Questionnaire (cf. Kim Hi-Sun 2005)
 - 14 Questions including: language background, language usage, and self assessment of Korean language abilities

Types of responses for coronal obstruents

- **“Correct”**: produced with the “original” consonant
/k'oc^h/ ‘flower’:[k'ot] → [k'oc^h-i]
- **“Acceptable”**: produced with a coronal obstruent other than [t]
(usually [s])
/k'oc^h/ ‘flower’:[k'ot] → [k'os-i]
- **“Incorrect”**: produced with [t], reanalysis → **leveling**
/k'oc^h/ ‘flower’:[k'ot] → [k'ot-i]
- **“Error”**: produced with a consonant that is not a coronal obstruent, in compatible with any reanalysis based on the unsuffixed form
/k'oc^h/ ‘flower’:[k'ot] → [k'ok-i]
- **“Undefined”**: produced with an error such that the final consonant is produced in the coda position or with a wrong lexical item
/k'oc^h/ ‘flower’:[k'ot] → [k'ot-ka] (wrong suffix allomorph)
/pak'/ ‘outside’:[pak] → [pak'ac^h-i] (wrong lexical item)

Results: coronal obstruents

N=54 (27 words * 2 suffixes)



Results: coronal obstruents

- **LowHeritage** group: 4 heritage speakers (HA, HB, HC, HD) show a qualitatively different pattern.
 - very few or no “correct” or “acceptable” responses
 - a considerable number of leveling responses
 - a high percentage of “undefined” (i.e., suffix or lexical errors)
- **HighHeritage** group: 3 heritage speakers (HE, HF, HG) show a pattern similar to that of native speakers.
 - Mostly “correct” or “acceptable” responses
- **Interim conclusion: Yes, heritage speakers DO produce non-alternating paradigm that is not supported by an analogy to an existing pattern. → evidence for default preference for paradigm uniformity?**

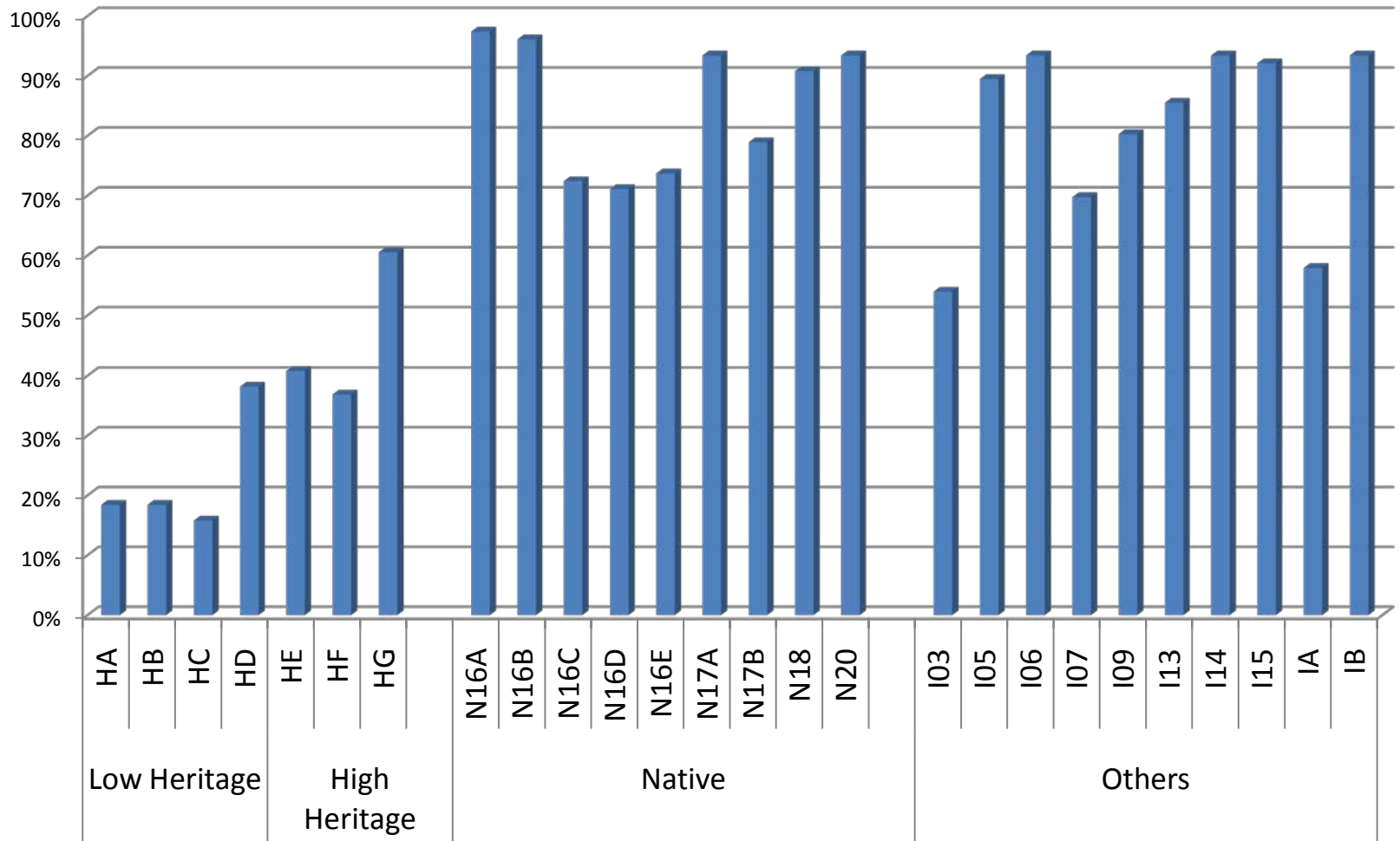
What differentiates the two groups of heritage speakers?

- Self report of Korean usage → not really
- Self assessment of Korean language abilities → not really
- **Lexical knowledge (Translation task) → yes!**
- **Noun-suffix formation errors → yes!**

Lexical knowledge

- Assumptions:
 - Learners start out with initial preference for paradigm uniformity and with increased exposure to learning data (i.e., no /t/-final nouns), they *outgrow* the default preference.
 - Speakers' level of lexical knowledge correlates with their level of exposure to learning data (cf. Polinsky 2008)
- Prediction:
 - Group that produces non-alternation responses (LowHeritage): lower level of lexical knowledge
 - Group that patterns like native speakers (HighHeritage): higher level of lexical knowledge

Lexical knowledge: translation (N=76)



Lexical knowledge

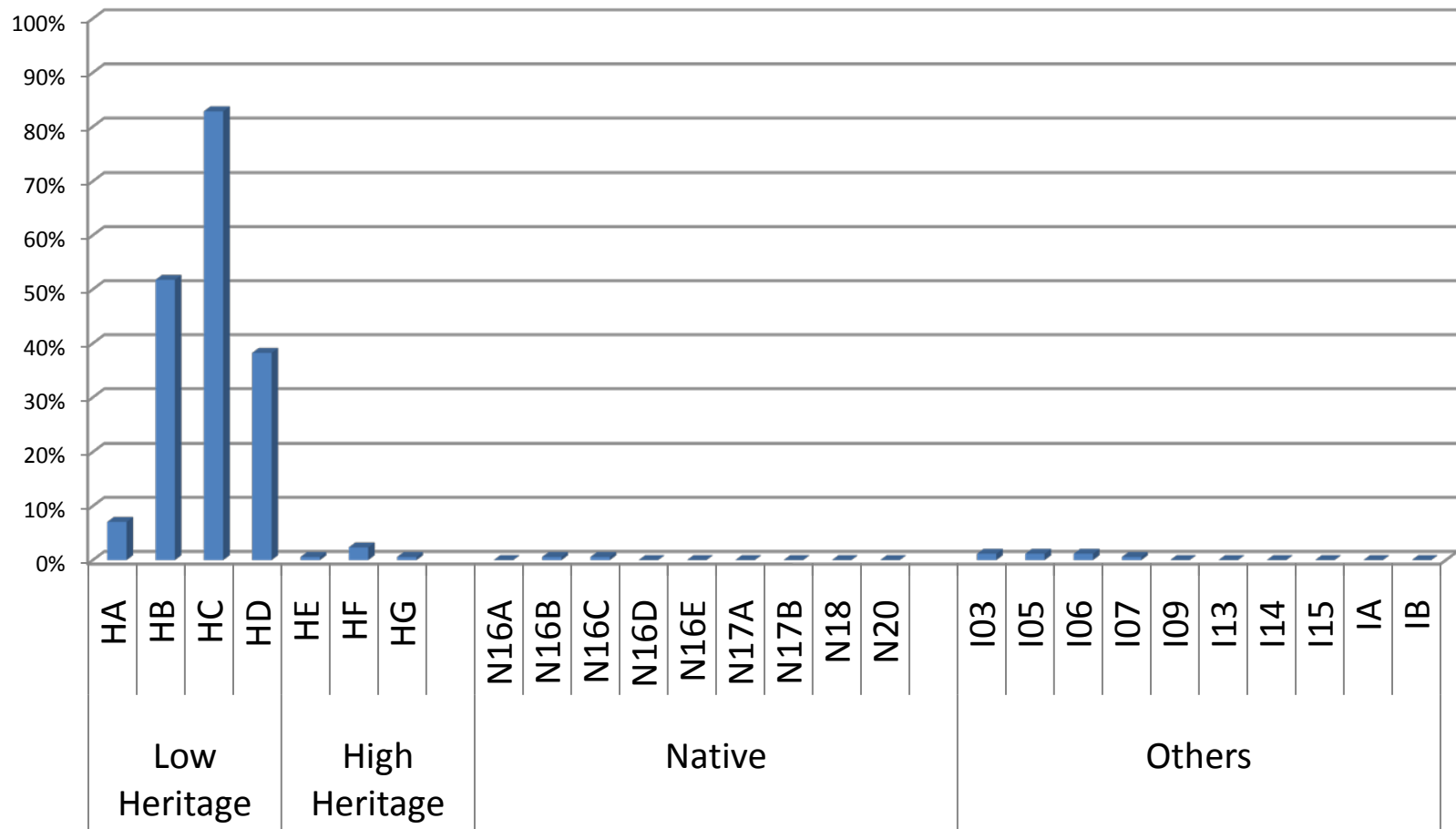
- The prediction is mostly borne out.
 - Overall, the LowHeritage group shows a low percentage of correct responses in the translation task than the HH group.
- But, speaker HD (from LowHeritage group) shows lexical knowledge comparable to that of HighHeritage group.
- Lexical knowledge (\approx exposure to learning data) may not be the sole factor.

Noun-suffix formation errors

- LowHeritage speakers produced a substantial number of errors in forming noun-suffix combinations.
 - No suffix (suffix deletion)
 - Pause between noun and suffix
 - Wrong suffix
 - Wrong allomorphs
 - [-ka] or [-nɪn] (should be used after V-final nouns) instead of [-i] or [-ɪn] (used after C-final nouns)
 - Stacking
 - e.g., [-i-ka], [-i-nɪn]
- Child Korean also shows many of the similar errors (Y. Kim 1994)

Suffix Errors

N=170 (85 words * 2 suffixes)



Interaction of lexical knowledge and suffix error

- The non-alternation responses are produced by the speakers who do not have the mastery of noun-suffix combination.
- Interpretation 1: The input pattern (i.e., no /t/-final nouns) is “learned” only when the relevant structure is in place (Dresher 1999). Before the statistical pattern can be learned, the **default leveling preference** prevails.
- Interpretation 2: Can the leveling pattern be an **artifact of the experimental task**, not a genuine reflection of grammatical preference?

HA & HB

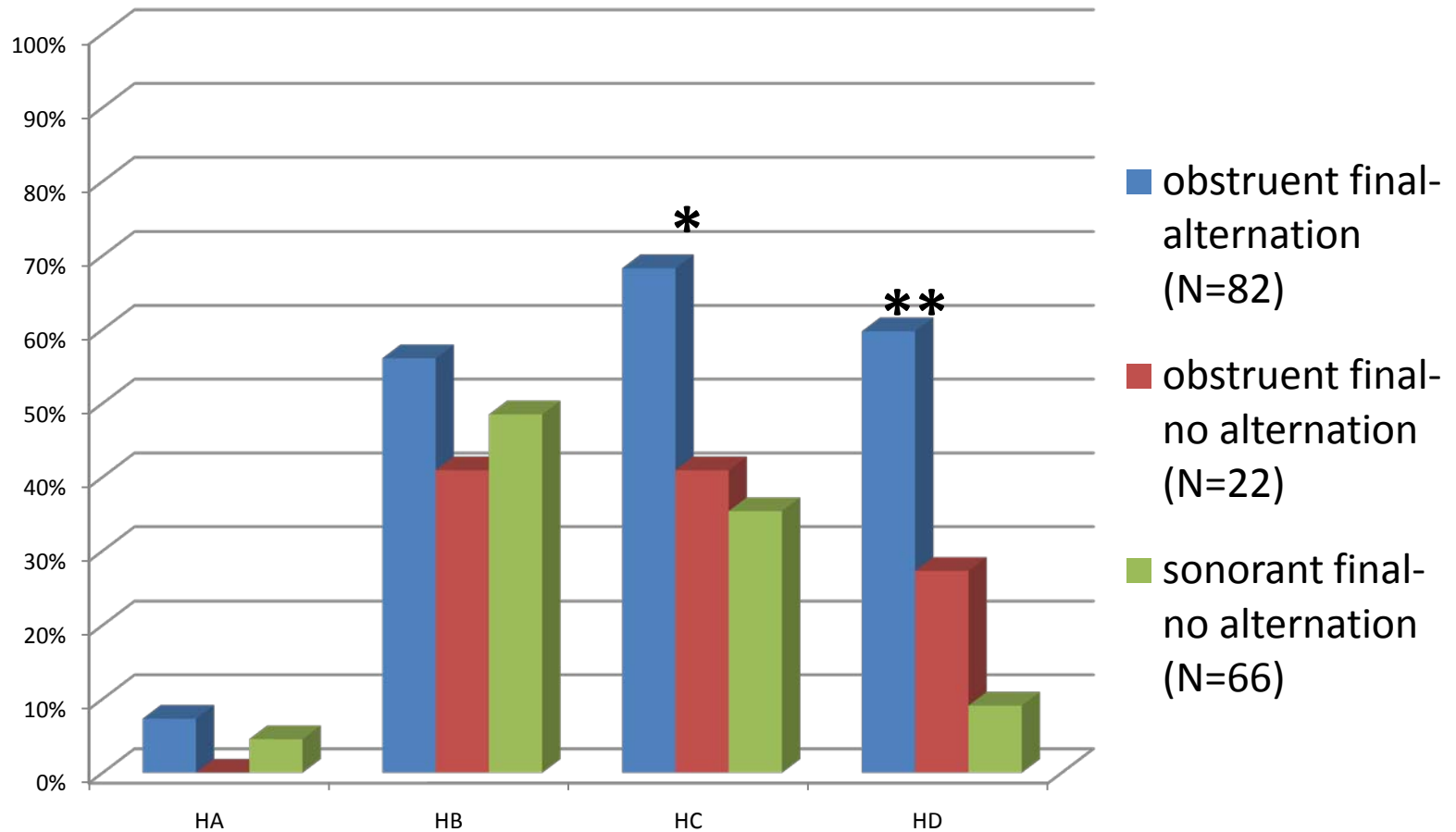
- They never produced any alternation in the entire experiment, not only for coronal obstruent-final nouns but for all other nouns.
- This could be an indication
 - That default leveling preference is still undominated in their grammar,
 - or
 - That they are mechanically adding suffixes to the noun forms provided in the prompt.

HC & HD

- These speakers produced *some* tokens of alternation.
 - Some are responses found in native speakers as well (=learned)
 - But, there were some that were innovative reanalyses that are not attested in native speaker data.
 - /kaps/ [kap] → [kap^h-in] ‘price’
 - /tʌc^h/ [tʌt] → [tʌc-in] ‘trap’
- These speakers’ leveling production cannot be attributed solely to experimental artifact.
- Also, there is evidence that these speakers tend to avoid a construction where alternation is expected.
 - Do (2010a, b): Child Korean, preference for construction that does not involve irregular alternation in verbs.

Suffix errors that force non-alternation:

e.g. /ap^h/ [ap] → *[ap-ka] cf. [ap^h-i]



HC & HD

- These speakers are in a transitional stage, where
 - they are starting to register the UR of the final consonant in the learning data
 - they tacitly know which nouns alternate and which do not
 - but they still avoid producing alternation.

Conclusion

- Some heritage speakers do produce an innovative non-alternation that does not have a precedent in the learning data.
 - These speakers tend to have low lexical proficiency and have not fully mastered the noun-suffix structure.
- Two of the speakers (HA & HB) produce only non-alternating patterns:
 - They are not yet at the stage where the UR of noun-final consonant can be properly learned
 - They retain default preference for non-alternating paradigm.
- Two of the speakers (HC & HD) are in a transitional stage:
 - They are producing some instances of alternation as well as innovative leveling of alternation.
 - They avoid constructions that involve alternation.
 - They have tacit knowledge of UR of the nouns but still show preference for uniform paradigm.

Selected References

- Choi, Hye-Won. 2003. Paradigm Leveling in American Korean. *Language Research* 39,1. 183-204.
- Do, Young-Ah. 2010a. Why do Korean children learn some alternations before others? The 46th Annual Meeting of the Chicago Linguistic Society. Apr. 8-10, 2010. University of Chicago, Chicago.
- Do, Young-Ah. 2010b. Satisfying output-to-output faithfulness by excessive morphology: Evidence of Korean acquisition. The 36th annual meeting of the Berkeley Linguistics Society. Feb. 6-7, 2010. University of California, Berkeley, Berkeley.
- Garrett, Andrew. 2008. "Paradigmatic uniformity and markedness", in *Explaining linguistic universals: Historical convergence and universal grammar*, ed. by Jeff Good (Oxford: Oxford University Press), pp. 125-143
- Kim, Sung-Yeon and Jayeon Lim. 2007. Errors and strategies observed in Korean heritage learners' L2 writing. *Foreign languages education* 14, 4, 93-112.
- Lee, Sun-Hee, Seok Bae Jang, Sang-Kyu Seo. 2009. Annotation of Korean learner corpora for particle error detection. *CALICO Journal*, 26, 3, 529-544.
- Polinsky, Maria and Olga Kagan. 2007. Heritage Languages: in the 'Wild' and in the Classroom. *Language and Linguistics Compass* 1,5, 368-395.
- Polinsky, Maria. 2008. Gender under incomplete acquisition: heritage speakers' knowledge of noun categorization. *Heritage language journal*, 6, 1, 40-71.
- Tessier, Anne-Michelle. 2006. Testing for OO-Faithfulness in Artificial Phonological Acquisition. 2006. In the proceedings of BUCLD30.