

Variation, change, and child language learners: A case study of variable voicing in English plurals

This paper investigates the diachronic development and synchronic patterning of a little-studied variable: the voicing of stem-final fricatives in some English plural nouns (e.g. *hou[z]es* ~ *hou[s]es*). We document both internal and external constraints on this variation, and suggest that they may have their source in processes of first language acquisition. This study thus sheds light on the role that child language learners may play in shaping patterns of language variation and change.

Several English words ending in voiceless fricatives traditionally form their plurals through a process of regressive voicing: e.g. *wife* [waɪf] → *wives* [waɪvz]; *path* [pæθ] → *paths* [pæðz]; *house* [haus] → *houses* [haʊzəz]. This pattern has its roots in Old English (OE), where plurals were formed with an [-əs] suffix, and voiceless fricatives underwent regular intervocalic voicing (e.g. [pɑθ] → [pɑðəs]; Ringe and Eska, 2013). However, a number of changes in the history of English destroyed the environment for regular voicing. We thus investigate the extent to which voicing persists, whether it is being lost, and whether any diachronic developments proceed similarly across the three fricatives (/f/, /θ/, /s/).

We consulted three dictionaries of present-day American English (AmE) to identify 20 /f/-final, 14 /θ/-final, and 6 /s/-final words which may voice in the plural. We then auditorily coded the voicing of the stem-final segment for all plural tokens of each word in the Switchboard (Godfrey and Holliman, 1997), Fisher (Cieri et al., 2004), and Philadelphia Neighborhood (Labov & Rosenfelder, 2011) corpora of AmE. Data (N=2158) were analyzed using mixed-effects logistic regression in R.

We find that stem-final plural voicing occurs 70% of the time in our dataset, and the rate of voicing significantly differs across the three fricatives, with /f/-final stems voicing significantly more than either /s/-final ($p = 0.001$) or /θ/-final ($p < 0.001$). Additionally, /s/-final words (tokens of *house* and its compounds) show change in apparent time, with younger speakers voicing less than older ($p = 0.001$), but the other two fricatives show no significant effect of age ($p > 0.1$; Figure 1).

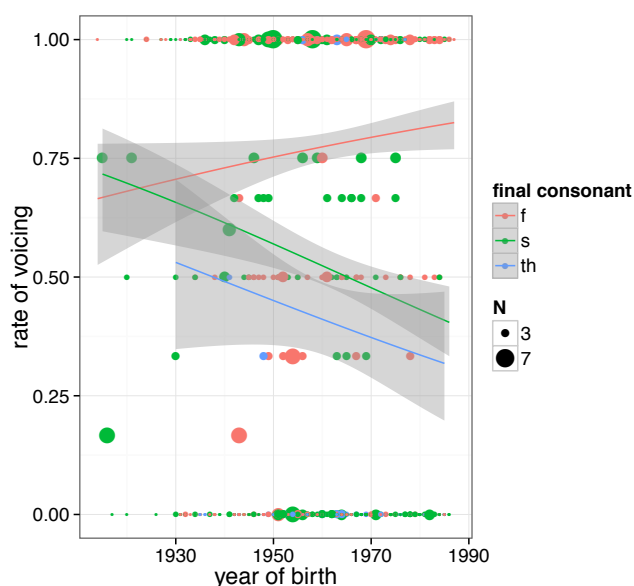


Figure 1. One dot per speaker.

We propose that these results can be explained by two constraints on first language acquisition. The first is Yang's (2005a) Tolerance Principle, which asserts that language

learners can tolerate a productive rule with listed lexical exceptions so long as the number of those exceptions does not exceed a critical threshold. We demonstrate that the accumulation of exceptions to the regular OE voicing rule throughout the history of English must have caused it to become difficult for children to learn, leading to variability and loss. Then, we invoke Yang's (2005b) principle of Salvation by Volume, by which learnability correlates with frequency. We show that this can explain the apparent-time difference in patterning of the three fricatives: /f/-final words, which show both a high voicing rate and apparent-time stability, are also much more frequent than /s/- or /θ/-final words. We conclude with general discussion of the role of child language learners in the patterning of language variation and change.

References

- Cieri, Christopher et al. 2004. Fisher English Training Speech Parts 1 and 2. Philadelphia: Linguistic Data Consortium.
- Godfrey, John J., and Edward Holliman. 1997. Switchboard-1 Release 2. Philadelphia: Linguistic Data Consortium.
- Labov, William, and Ingrid Rosenfelder. 2011. The Philadelphia Neighborhood Corpus.
- Ringe, Donald, and Joe Eska. 2013. *Historical Linguistics: Toward a Twenty-First Century Reintegration*. New York: Cambridge University Press.
- Yang, Charles. 2005a. On productivity. *Linguistic Variation Yearbook* 5:265–302.
- Yang, Charles. 2005b. The origin of linguistic irregularity. In *Language Acquisition, Change and Emergence: Essays in Evolutionary Linguistics*, ed. James W. Minett and William S.-Y. Wang, 297–328. Kowloon, Hong Kong: City University of Hong Kong Press.