



Adult learners' (non-)acquisition of speaker-specific variation

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Research Question

Can learners acquire speaker-specific patterns of variation?

Background

Sociolinguistic variation is conditioned over language-internal linguistic variables as well as language-external social variables. We know that learners can acquire both aspects of variation, but exactly how they do so is not well understood. Although people are very able to learn probabilistic information (Romberg & Saffran, 2010), experiments (and naturalistic studies, Singleton & Newport, 2004) show that learners do not always replicate the probabilities involved in linguistic variation (Hudson Kam & Newport, 2005, 2009).

From the perspective of a learner, variation that differs according to social variables (e.g., variation that differs according to the gender or age of the speaker or interlocutor) is further complicated by the fact that the social variables are not directly apparent to the learner – they are cultural constructions. How then, might a learner acquire socially conditioned variation (which we know they do)?

One possibility is that they learn patterns associated with individuals and over time figure out what individual speakers with similar patterns of variation have in common, eventually leading to patterns of variation that conditioned by more abstract social factors. This idea is consistent with social-constructivist theories of language acquisition, and with data showing that learners can acquire other aspects of language as being particular to specific speakers (e.g., vocabulary or even language).

Overview of Experiment

Adult learners were exposed to a miniature artificial language with input from two different (female) speakers. Each speaker had a different characteristic pattern of variable determiner production. Participants produced novel utterances prompted either by one of the input voices or a novel voice and their determiner use patterns were examined.

Method

Participants:

- 19 adult native English-speakers

Presentation:

- videotape exposure – videos contained short vignettes accompanied by a spoken sentence describing the event, sentences were spoken at a slow to normal rate with normal English intonation and stress
- 8 input sessions – 25-30 minutes each
- no direct instruction in vocabulary or grammar

The language:

- has semantics
- 36 nouns (in two classes) and 12 verbs (Transitive & Intransitive)
- 1 negator and 2 determiners (1 per noun class)
- 13,200 semantically possible sentences has semantics
- basic sentence structure: (Neg) - V - SubjN Det - (ObjN Det)
- example sentences:
fimm rungmawt poe blergenfall kaw (the bowling ball hits the bowling pin)
sig mirt bampogen kaw (the wooden block isn't moving)

References

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Method, cont.

Experimental manipulations:

- determiners occurred probabilistically with nouns
- different probabilities were associated with Subj vs. Obj nouns (as in Hudson Kam, 2014)
- the particular probabilities were different for the two speakers
 - Speaker 1: subject = 80%, object = 20%, overall = 60%
 - Speaker 2: subject = 20%, object = 80%, overall = 40%
 - overall for the language as a whole = 50%
- varied which speaker participants heard first (in input)
- also varied identity of prompt voice at test (half Sp1, half novel voice)

Sentence production test:

- participants saw a 24 novel scenes and were told which verb to use in the novel sentence they were to produce
- 12 nouns each occurred 3 times in the tests, once in each of the 3 syntactic positions
- responses were videotaped and coded for determiner use

Predictions

Previous experimental studies of probability learning in language suggest different possible outcomes:

- learners may acquire patterns associated with both speakers (Weiss, Gerfen, & Mitchel, 2009)
- in the absence of any additional information about the change in speaker, learners may only learn the patterns associated with the first speaker in their exposure (Gebhart, Aslin, & Newport, 2009)
- due to the complexity of learning multiple probabilistic patterns, learners may acquire the overall probabilities rather than any speaker-specific patterns (Hudson Kam & Newport, 2009)

Results

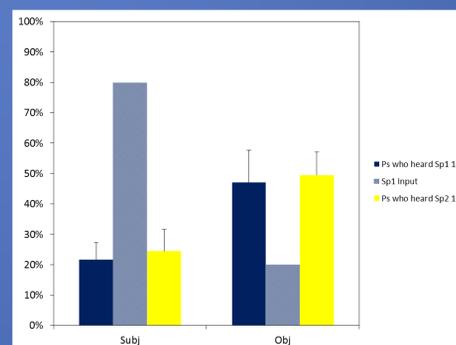
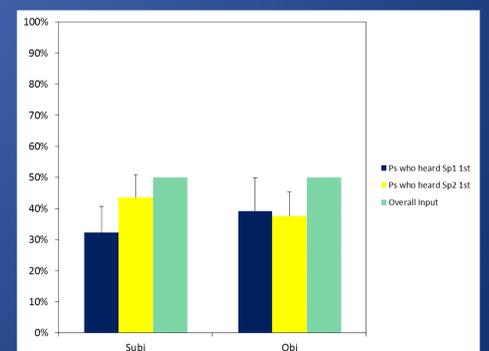


Figure 1: Percentage of NPs produced with determiners in response to Sp1 voice prompt compared to Sp1 input.

Figure 2: Percentage of NPs produced with determiners in response to novel voice prompt compared to overall input.



Conclusion

- Participants show no evidence of having learned Sp1's patterns, independent of whether or not they heard her voice first during the exposure stage.
- Instead, they seem actually to be replicating Sp2's patterns in response to a familiar voice at test, even though her voice was never heard at test.
- In response to the novel voice prompts participants' determiner productions were more in line with the overall probabilities.

Speaker-specific probabilities may not be an entry into social conditioned variation. Instead, the social categories may be required a priori.