

Phonemic contrasts are generally hyperarticulated in infant-directed speech (Burnham et al., 2002; Kuhl et al., 1997).

•There is evidence for individual differences in this tendency. These differences can have important consequences for language acquisition:

•Cristià (2011) showed that mothers' acoustic differentiation between /s/ from /ʃ/ was greater in speech to older (12- to 14month-old) children than to younger (4- to 6-month-old) ones, and that the older children whose mothers had more-robust differentiation of the /s/-// contrast in their production had better perception of the contrast than those that did not. •Liu, Kuhl, & Tsao (2003) found that Mandarin-acquiring infants whose mothers produced a more-expanded vowel space perceived the /c/-/tc / better than those whose mothers did not •Cristià and Liu et al.'s results suggest a much finer-grained relationship between production and perception in learner-input dyads.

Perhaps adults perceive in fine detail the degree to which a child's production (mis-)matches the adult forms, and modify their speech to children accordingly. This can serve both as corrective feedback and as enhanced input.

How can we gather large data sets on input to children?

- Naturalistic data
- Data from interactions with virtual agents

Listen-Rate-Say: A Paradigm for Studying Speech Input to Children

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A Case Study: Julien and Munson (2012)

Examined the relationship between adults' perception of the accuracy with which English-acquiring children produce the sibilant fricatives /s/ and /ʃ/ and their subsequent productions of /s/ and /ʃ/

Advantages of this approach:

- We can relate perceived accuracy to production characteristics token by token.
- Data collection is efficient (~200 productions in approximately 20 minutes)
- The recording environment is very favorable





Julien and Munson found that people produced fricatives with shorter duration when they were perceived to be target-appropriate than when they were perceived to be errors

This tendency was mediated by the amount of time the participants spend with children in an average week.





The duration of individual fricatives for one participant, plotted relative to that participant's perception of how accurately the target was produced. Blue=target/s/, red=target /ʃ/.

Future Directions

- realistic



• Extend this paradigm to other developing contrasts and to virtual interactions with younger children Make the virtual agents more

 Better understand the nature of individual differences in tokenspecific hyperarticulation