

# Thursday

September 22, 2022

09:30–10:30

## How to interpret variable input

Ana T. Pérez-Leroux  
University of Toronto

Generative approaches to language acquisition study how grammar (the mental symbolic system that underlies human language) grows in the minds of children. Despite their great diversity (Longobardi, 2018), human languages exist within a limited space of formal possibilities. In this presentation I review recent work on the acquisition of variable phenomena, exploring a potential integration of developmental sociolinguistics into a generative framework.

There is growing consensus that grammar grows from the interaction between statistical learning and innate structural biases that support inferences (i.e., rules; Yang, 2016) about sentences poorly represented in experience (Lidz & Gagliardi, 2015). Under minimalist assumptions, what children learn is the encyclopedic and functional lexicon of a language (Chomsky 2001), through their visible distributions (Gleitman et al., 2005). Distributional learning gives us categories, but is it sufficient to guide how children learn the interpretation of those categories? Are further constraints required? The literature articulates a range of what I will call contrast inferences. These are implicit assumptions that listeners and learners make about the expressive choices of speakers. Contrast inferences include various lexical learning biases (Mutual exclusivity, Marchman & Wachtel, 1988; Principle of contrast, Clark, 1993; Morphological Uniqueness, Pinker, 1984; etc.) as well as semantics and pragmatic principles such as Maximize resuppositions (Heim, 1982), scalar implicatures (Schlenker 2012), etc.

I rely on three types of data from recent work to explore the role that learning and contrast inferences play in incorporating noisy and sparse input into the developing grammar:

- I. Data on language phenomena with scarce and opaque input, including recursive nominal modification (Pérez-Leroux, Roberge, & Brunner, to appear), and undetected ambient variability in Korean scope; Han, Musolino and Lidz 2016))
- II. Data on phenomena undergoing sociolinguistic variation and diachronic change, including children's incrementation of epistemic reading of modals (*the cat must be fed ... because he is hungry vs. because he is not hungry*, Cournane 2016, Cournane & Pérez-Leroux, 2020), the selection of English possessives (*the tail of the cat/the cat's tail*; Hall & Pérez-Leroux, 2022), and form selection in future contexts (*the boy will/is going to/can go down the slide*; Hall & Pérez-Leroux, in prep).
- III. Studies examining the impact of phonetic variability on the acquisition of functional categories, including plurals across dialects of Spanish (Miller & Schmitt, 2010) and gender agreement in Spanish-English bilinguals (Pérez-Leroux et al, 2022).

In the course of acquisition, children map formal contrasts in a layered process. Contrast inferences constrain how children interpret distributional variability in grammatical, discursive, or social terms. Distributional learning yields categories and paradigmatic contrasts; it also supports learning meanings, but additional constraints are necessary. Once differences in elements in related distributions are detected, contrasts are mapped at different levels of linguistic knowledge: lexicon (different words), grammar (different categories/sentences), truth functional semantics (different truth values relative to the world), perspectival semantics (nontruth functional distinctions that reflect speaker perspectives on a situation or referent),

pragmatics (attributions to discursive meanings, including politeness/familiarity, etc.) and, finally, sociolinguistics (attributions to speakers' social affiliations). By driving learners to interpret all variation, at one level or another, contrasts inferences support both grammatical and sociolinguistic development.

## References

- Chomsky, N (2001). Derivation by phase. In *Ken Hale: A Life in Language*, edited by Michael Kenstowicz, 1-52. MIT Press, Cambridge, MA.
- Clark, E. V. (1993) *The Lexicon in Acquisition*. Cambridge: Cambridge University Press.
- Cournane, A. (2015). *Experimenting with language change in the domain of modality*. Ph.D. dissertation, U. of Toronto.
- Cournane, A. & A. T. Pérez-Leroux. (2020). Leaving obligations behind: Epistemic incrementation in preschool English. *Language Learning and Development*, 270-291. <https://doi.org/10.1080/15475441.2020.1738233>
- Gleitman, L., Cassidy, K., Nappa, R., Papafragou, A., & Trueswell, J. (2005). Hard words. *Language Learning and Development*, 1, 23-64.
- Hall, E., & A. T. Pérez-Leroux, (in prep). Child learners and the future of future temporal reference.
- Hall, Erin & A. T. Pérez-Leroux. (2021). Two roles for development in language change. *Proceedings of the 46th Boston University Conference in Language Development*. Somerville, Cascadilla Press.
- Han, C., J. Musolino & J. Lidz, (2016). Endogenous sources of variation in language acquisition. *Proceedings of the National Academy of Sciences*, 113, 4, 942-947. doi 10.1073/pnas.1517094113.
- Heim, Irena. (1982). *The semantics of definite and indefinite noun phrases*. Ph.D. Dissertation, U. of Massachusetts.
- Lidz, J. & A. Gagliardi. (2015) How Nature Meets Nurture: Universal Grammar and Statistical Learning. *Annual Review of Linguistics*, 1,333-353.
- Longobardi, G. (2018) Principles, Parameters, and Schemata : A radically underspecified UG. *Linguistic Analysis*, 41, 517-558. ISSN 0098- 9053 orcid.org/0000-0003-1819-5283
- Markman, E. M., & Wachtel, G. F. (1988). Children's use of mutual exclusivity to constrain the meanings of words. *Cognitive Psychology*, 20, 121-157.
- Miller, K., & Schmitt, C. (2010). Effects of variable input in the acquisition of plural in two dialects of Spanish. *Lingua*, 120, 1178-1193.
- Pérez-Leroux, A. T., Y. Alvarez, L. Colantoni, A. Cuza, I. Marinescu, & J. Yang. (2022). The phonetic and morphosyntactic dimensions of grammatical gender in Spanish heritage language acquisition. Ms. under review.
- Pinker, S. (1984). *Language Learnability and Language Development*. Cambridge, MA: Harvard University Press.
- Schlenker, P. (2012). "Maximize Presupposition" and Gricean reasoning. *Natural Language Semantics*, 20(4), 391-429. <http://www.jstor.org/stable/43550309>
- Yang, C. (2016). *The price of productivity*. Cambridge, MA: MIT Press.