

CONOR FRYE'S

DEFENSE

PHONEMIC VARIABILITY IN WORD LEARNING

ABSTRACT:

Language learning processes are often examined by learning of miniature languages in the lab, where controlling and measuring learning of a full language is infeasible. Most work on learning words assumes that these meaningful chunks of sound are composed of smaller, equally meaningful phonemes. However, recent evidence suggests that crystallized phoneme categories do not fully explain how words are learned. It points, instead, to flexible representation of phonemes in terms of gradient similarity in word learning by adults and children.

This dissertation proposes a shift in the current understanding of the role of phoneme categories in word learning. I present a set of three studies consisting of 6 experiments, which challenge the current understanding of phoneme representation. Each study presents learners with novel words, learned as labels for novel objects, which are either phonemically consistent (object 1 is a "deev") or variable (object 1 is called both "deev" and "teev"). In the first study, three experiments assess whether the adult word learning system is more flexible in its word representations than previously described and finds repeated examples that within certain boundaries such flexibility is easily achieved. The second study relies on eye-tracking measures, a more sensitive measure of recognition difficulty, to extend the behavioral results from the first, as well as demonstrate that recognition is similarly rapid for phonemically-consistent and phonemically-variable words illuminating some of the underlying responses of the adult word-learning system. The third study explores how such flexibility changes across developmental time, testing 3-5-year-old children on their ability to learn flexible vocabularies as well as distinguish minimal pairs. This final study suggests that, though children are capable of learning phonemically-variable words, the flexibility experienced by adults is due to extended time, practice, or experience with a language, and not available immediately to learners.

These findings contribute to the general field of word learning across three main avenues: the first, by demonstrating incredible flexibility in sound category interpretation across adult learners of different linguistic backgrounds, counter to prevailing assumptions, and adding nuance to the research on bilingual advantages in word learning. Secondly, by adding to the general understanding of word learning by contributing new accuracy and time course data on positional and segmental importance to speech sound flexibility in word learning. And finally, by providing data points to extrapolate a developmental time course for these abilities, contributing to our picture of spoken language development over a lengthy developmental time scale.

CONOR FRYE TO
DEFEND

MONDAY,
MARCH 12TH, 2018
AT 9:00AM

COGNITIVE SCIENCE
BUILDING,
ROOM 003

COMMITTEE MEMBERS:

Sarah Creel, Chair, Cognitive Science
Seana Coulson, Cognitive Science
Marc Garellek, Linguistics
Tamar Gollan, Psychiatry
Marta Kutas, Cognitive Science