

# Semantic Development: An Interdisciplinary Approach

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## Workshop Plan

Most research on language development has concentrated on how children acquire lexical representations, syntax, and phonology. In contrast, there has been relatively little work on the acquisition of the formal semantic component of language. Historically, work on logical development has been mainly concerned with the argument schemas that underlie deductive argument. But recently there has been an explosion of research on the logical capacities that underlie the semantics of natural language and mathematical cognition. The proposed full-day workshop will explore current investigations of Semantic Development, with a focus on how recent work in psychology and numerical cognition is related to formal semantic models of linguistic competence. Recent empirical work has documented rich non-linguistic quantitative capacities in human adults, pre-linguistic infants, and various non-human animals. These systems support the representation and tracking of objects, the chunking of object arrays into sets, and the discrimination of relative numerosities. Studies have also established that these systems of representation become associated with linguistic quantity representations in development. For example, number words are associated with approximate number representations in human adults. Similarly, infants' ability to track small sets of objects appears to support (and constrain) their ability to learn words like 'two.' Quantifiers like 'more' and 'most' also draw on these non-linguistic systems for the purposes of meaning verification. However, attested non-linguistic systems are unable to represent many critical formal aspects of language and of mathematical competence. This suggests that formal representations may not originate solely from non-linguistic sources. But if this is true, what is their origin, and how do they become related to non-linguistic representations? Do non-linguistic systems supply content that is constitutive of later semantic competence, or do they act as systems of meaning verification, which do not supply content, but allow semantic learning hypotheses to be tested in the world? These questions will form the core of the proposed workshop.

## Participants

Susan Carey, David Barner, Lance Rips, Luca Bonatti, Lisa Feigenson, Justin Halberda, Fei Xu, Noah Goodman, Ira Noveck, Sarah-Jane Leslie, Jesse Snedeker, Sandeep Prasada, & Anna Papafragou.

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