Controlling the flow of information to learn language

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Conceptual Analysis of Dissertation Area

Abstract

Human language learning is a remarkable feat. At first, children are unable to produce or comprehend any language. But within the first years of life, they quickly transition to using language to communicate their thoughts and desires. To achieve this transition, children must become proficient at extracting meaning from an information source that is dynamic and unfolds rapidly in time. Moreover, they must do this despite limitations in cognitive resources such as attention, memory, and processing speed, which place constraints on the amount of information that children can process. So how do children learn from a complex and dynamic signal such as language? In this paper, I argue that self-generated control over the *flow* of information during interaction plays an important role in language learning. First, I review work on children’s limited information processing abilities and the role of infant-directed speech to overcome these constraints. Then, I describe formal models of self-generated control over learning, including early selective attention (Kidd, Piantadosi, & Aslin, 2014), information gathering (Gureckis & Markant, 2012), and decision-making (Ratcliff & McKoon, 2008). I conclude by mapping concepts from the formal modeling work to the language-learning context.