Constructing Meaning in Small Increments

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Abstract

Humans comprehend natural language sentences in real time, processing the elements of each sentence incrementally with immediate interpretation, while working within the limitations of general cognitive abilities. While much research has been devoted to human sentence comprehension, a detailed computational theory of how this is done has been lacking. In this work we explore some fundamental principles of human sentence comprehension, propose a novel computational theory of knowledge representation and incremental processing to comprehend sentences using general cognitive abilities, and discuss results of an implementation of this theory in a robotic agent. We then explore the theorys implications for future work in various areas of cognitive science.