

Oren Sadeh-Leicht

The Psychological Reality of Grammar

The Theta Principle in Parsing Performance

This dissertation presents evidence for the psychological reality of a grammatical principle: the Theta Principle. It adopts a grammar-derived model of human natural language processing – the thematic parser.

It is shown that processing difficulty of garden path constructions (*The horse raced past the barn fell*) and center-embeddings (*The mouse the cat the dog chased bit died*) correspond to a local violation of the Theta Principle.

A grammatical account is suggested for the difficulty of center-embeddings, in contrast to what has been thought about these constructions in the past fifty years. The explanation provided relies on the discovery that center-embeddings are instances of strong islands.

Given that processing difficulty in garden paths and center-embeddings is regarded as a local violation of the Theta Principle, these seemingly disparate phenomena are united within a single account.

In addition, the dissertation provides experimental evidence for the validity of the parsing model. The experimental paradigm employed is Magnitude Estimation, which is used to measure subtle differences in grammaticality judgments in offline experiments. The method was validated as a technique suitable for real-time parsing research and the experimental evidence provided is within this paradigm.

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