A COMPUTATIONAL MODEL OF COGNITIVE CONSTRAINTS IN SYNTACTIC LOCALITY

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This dissertation is broadly concerned with the question: how do human cognitive limitations influence difficult sentences? The focus is a class of grammatical restrictions, locality constraints. The majority of relations between words are local; the relations between question words and their governors are not. Locality constraints restrict the formation of these non-local dependencies. Though necessary, the origin, operation, and scope of locality constraints is a controversial topic in the literature.

The dissertation describes the implementation of a computational model that clarifies these issues. The model tests, against behavioral data, a series of cognitive constraints argued to account for locality. The result is an explanatory model predictive of a variety of cross-linguistic locality data. The model distinguishes those cognitive limitations that affect locality processing, and addresses the competence-performance debate by determining how and when cognitive constraints explain human behavior. The results provide insight into the nature of locality constraints, and promote language models sensitive to human cognitive limitations.