

THE INTERPRETATION OF QUANTIFIERS:
SEMANTICS & PROCESSING

A Dissertation Presented

by

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ABSTRACT

THE INTERPRETATION OF QUANTIFIERS: SEMANTICS & PROCESSING

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The primary goal of this study is to develop a theory of the processing of doubly-quantified sentences such as *A squirrel picked up every nut*, particularly how the scope ambiguity in such sentences is resolved. The research departs from most psycholinguistic work in drawing upon current linguistic theories of LF, the syntax-semantics interface, and formal semantics.

First, I investigate the issue of how structural factors affect quantifier scope preferences. I argue that the processor takes an economic stance towards scope assignment. The preferred relative scoping of two quantified phrases is computed from the 'required' LF structure— the LF constructed from required grammatical operations acting on S-structure. Furthermore, I contend that when *every* has scope over *a*, the processor does not commit to how many entities the *a*-phrase represents.

Next, I present an analysis of the semantic differences between *each* and *every* with respect to event distributivity, in preparation for considering the scope behavior of these quantifiers. I demonstrate that a sentence containing *each* can only be true of an event which has a totally distributive event structure, where each individual object in the restrictor set of the quantified phrase is associated with its own subevent, and all the subevents are differentiated on some relevant dimension. *Every* is subject to the weaker requirement that there be at least two different subevents.

Finally, I apply the semantic analysis of *each* and *every* to the question of how individual quantifiers affect scope preferences. *Each* has often been said to have a stronger preference for wide scope than *every*. I argue that this observation arises from cases where *each* takes wide scope in order to fulfill its condition requiring total event distributivity and differentiation of subevents. Otherwise the scope behavior of *each* and *every* is quite similar; they preferentially take wide scope only when that is the scoping computed off the required LF structure. More generally, I hypothesize that a quantifier's scope behavior is driven by the lexical condition(s) which are part of its meaning.

Experimental evidence is presented in support of each of these claims.

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