Dany Jaspers

Operators in the Lexicon
On the Negative Logic of Natural Language

Operators in the Lexicon begins with an old chestnut: why are there no natural single word lexicalizations for negations of the propositional operator and and the predicate calculus operator all: neither *and* nor *null*?

To find an explanation for this gap, Boethius’ Square of Oppositions is taken to pieces in chapters two and three and reduced to two relations. In chapter four, S. Löbner’s discovery that I-corner operators such as some, or, one are the pivotal items of their calculi is explained by appeal to C.S. Peirce. The latter proved that the logical vocabulary of the proposition calculus can be generated from a single negative truth function. It is shown that a modified version of this operator is the ultimate source of the asymmetrical two-dimensional architecture of natural logic across calculi. Furthermore, it is the only primitive required for a lexical decomposition of the operators involved.

Chapters five and six are concerned with the semantic variability and meaning shifts by which pivots stand out. An analysis of the indefinite article a and the negative polarity item any provides evidence that natural logic is a fully-fledged 2D Cartesian coordinate system with the pivot as its origin. For the data involved, the Gricean account of implicatures in terms of social ethical principles of cooperation is supplemented with an explanation in terms of an individual cognitive drive to dispel the “irritation of doubt” which characterizes I-corner expressions, an instinct for better knowledge.

Chapter seven, finally, solves the lexical gap in terms of selection restrictions and presupposition.

This study is of relevance to anyone interested in the study of negation, semantics and logic.