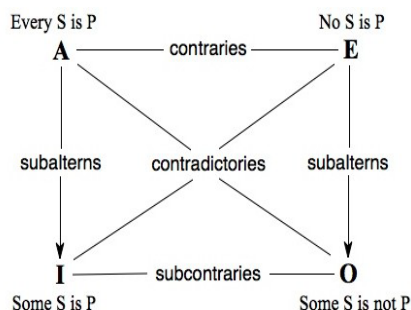


Negation and scalar implicature: the first 750 years

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As described 50 years ago (Horn 1972), the post-Aristotelian square of opposition for quantificational determiners



and Boolean connectives conceals a significant typological asymmetry in lexicalization potential, an asymmetry that has been advanced as a semantic universal. The contradictory of **I** values (*some, or*) lexicalizes in many (although not all) languages, as in *none, nor, neither*, but the contradictory of **A** values (*all, and*) never lexicalizes. No natural language has a single-word equivalent corresponding to the values in the southeast corner of the square, **nall* ('not all'/'some not'), **nand* ('not and'/'or not'), or **noth* ('not both'). More generally, across languages and categories (quantificational adverbs, modals), lexical realizations are common and morphologically simplex for **A** and **I** values, less frequent and typically complex for **E**, and generally unavailable for **O**. The initial approach to motivating these lexical gaps and preferences invoked the interplay of Gricean pragmatics and an implicit reference to economy or cost: given the quantity implicature from **I** to **O** (and vice versa), lexicalizing both **I** and **O** would be superfluous. Moreover, no natural language lexicalizes "two-sided" values like *some but not all* or exclusive *or*, each of which can be expressed as a conjunction of the two subcontraries. Not only are such values expressed by the pragmatically enriched interpretation of the corresponding **I** (or **O**) statement, they are also crucially non-monotonic, and monotonicity is a significant constraint on simplex logical operators (Barwise & Cooper 1981; Carcassi et al. 2021). But while such considerations successfully predict $\{A, E, I\} \gg \{A, E, I, O\}$, they are also consistent (on the same grounds of economy) with $\{A, E, O\} \gg \{A, E, I, O\}$. It is the markedness of negative expressions that dictates $\{A, E, I\} \gg \{A, E, O\}$ —and indeed, typological studies of inventories confirm the general pattern $A, I \gg E \gg O$. Given the inherent complexity of negative statements, it is always the **I** rather than the **O** vertex that is lexicalized. While subsequent work has challenged the initially posited explanatory mechanism based on quantity implicature and the markedness of negation and proposed rival accounts, recent explorations utilizing computational models and drawing on experimental studies (Katzir & Singh 2013; Steinert-Threlkeld 2019; Uegaki 2022; Züfle & Katzir 2022) support and extend the view that a full explanation of the lexicalization asymmetry requires attention to the interaction of informativity (given pragmatic enrichment) and simplicity.

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