Now You Need It, Now You Don't: Alternatives and Contrariety

Introduction. Scalar implicatures (SI) arise when the use of a logically weaker statement implicates that a logically stronger alternative statement could not have been used. The major theories of SI have much in common: a set of alternatives of the asserted sentence S, Alt(S), is defined, and Alt(S) is then subject to SI, a negative inference. This is necessary for deriving only the attested SIs. I argue, contra Katzir 2007, that SI may target alternatives that are structurally strictly more complex than the assertion, which is unsurprising under the assumption that Alt(S) falls under the logic of contraries.

Symmetry in Alt(S). In (1), both (1b) and (1c) unilaterally entail (1a), but only one SI is attested. This, in essence, is the symmetry problem (Kroch 1972, von Fintel and Heim 1997).

(1) a. Felix ate some of the carrots. assertion
b. Felix ate all of the carrots. a ⇝ ¬b (attested SI)
c. Felix ate some but not all of the carrots. a ⇝ ¬c (unattested SI)

Neo-Griceans, who use substitution from Horn-scales (Horn 1972) to define Alt(S), avoid symmetry by banning scales with monotonicity-mismatching scalemates (Horn 1989, Matsumoto 1995). Katzir (2007) defines Alt(S) in terms of structural complexity: any viable alternative to S must be at most as complex as S, which is not true of (1c). He further shows that SIs can arise from monotonicity-mismatched alternatives, and therefore monotonicity plays no decisive role in defining Alt(S). I argue against a complexity restriction on Alt(S).

A counterexample to structural complexity. The relevant evidence is due to Horn's (1989) discussion of O-to-E drift, which he analyses as positive R-implicature. If monotonicity no longer restricts Alt(S), it is informative to observe which inferences arise in extended singular squares where the A and E vertices are mediate contraries, I and O are their outer negations, and Y is the unexcluded middle (I ∧ O). Note that A-Y-E are all symmetric.

(2) a. A → I: Tim is *happy* → ¬(Tim is *sad*)
Y → I: (¬*sad* ∧ ¬*happy*) → ¬*sad*
SI: ¬*sad* ⇝ (¬*sad* ∧ ¬*happy*)

b. E → O: Tim is *sad* → ¬(Tim is *happy*)
Y → O: (¬*sad* ∧ ¬*happy*) → ¬*happy*
SI: ¬*happy* ⇝ *sad*

If we reason in terms of negative SI, (2a) looks like the standard case: ¬*sad* implicates ¬*sad* ∧ ¬*happy*. On the other side (where presumably the same mechanism is at work), however, ¬*happy* implicates *sad*, and it is the strictly more complex alternative (¬*sad* ∧ ¬*happy*) that is negated. It is possible for ¬*sad* to implicate either of the alternatives depending on the context: this further supports the need for the more complex alternative. The reasoning in (2) is identical to (1), which suggests that this evidence is relevant to SI and Alt(S).

The logic of contraries and Alt(S). In (1-2), the symmetric alternatives are in fact contraries: they unilaterally entail each other's outer negations. Inside symmetric sets of contraries with an all-to-all contrary relation (as in logical hexagons), the logical space is divided exhaustively and exactly one contrary is always true at a time. For (1a), the relevant full symmetric set of contraries consists of the outer negation of (1a) and the stronger alternatives in (1b) and (1c): ¬(1a) is false, but one contrary must be true, so it must be either (1b) or (1c).

Conclusion. Observed SIs arising from strictly more complex alternatives show that structural complexity (Katzir 2007) does not define Alt(S). I propose that Alt(S) falls under the logic of contraries, which implies that Alt(S) always contains symmetric alternatives. The contradictory of a weak S is always false: the question, then, is to know which of the remainining contraries is true and which is (or are) false. Brutal negative SI is unsuitable for such strenghtening, and therefore trends in selection of the implicated stronger alternative should be explained by means of another type of strengthening.

References.

von Fintel, K. and Heim, I. 1997. Classnotes on pragmatics. MIT.

Horn, L. 1972. On the Semantic Properties of Logical Operators in English. UCLA.
1989. A Natural History of Negation. Chicago, University of Chicago Press.

Katzir, R. 2007. Structurally defined alternatives. Linguistics and Philosophy 30, 669-690.
2013. A note on contrast. Natural Language Semantics 21: 333-343.

Kroch, A. 1972. Lexical and inferred meanings for some time adverbs. Quarterly Progress Report of the Research Laboratory of Electronics 104. MIT.

Matsumoto, Y. 1995. The Conversational Condition on Horn Scales. Linguistics and Philosophy 18, 21-60.