Scalar Implicatures: Exhaustivity and Gricean Reasoning

BENJAMIN SPECTOR

Abstract

This paper shows that both scalar implicatures and exhaustification of answers can be understood as the outcome of a pragmatic reasoning based on Gricean maxims. I offer a formalization of the Gricean reasoning that solves some of the problems (cf. Chierchia, 2002) faced by standard neo-Gricean accounts. I further show that positive and non-positive answers pattern very differently, in a way that can be predicted by stating carefully, for a given question-answer pair, what counts as an 'alternative answer'—this notion plays the same role as that of 'scalar alternative' in previous approaches. The general approach is very similar in spirit to van Rooij and Schulz (2004).

10.1 Imperfections of Standard Neo-Gricean Accounts

According to neo-Gricean accounts, scalar implicatures are computed as follows: given a sentence $S$ containing a scalar term $t$, $S$ is to be compared to all sentences which can be obtained from $S$ by replacing $t$ with a term belonging to $t$'s scale. For any such scalar alternative $S'$ such that $S'$ asymmetrically entails $S$, the hearer infers that $S'$ is not part of the speaker's beliefs. (Hereafter, rule R1; this derives the

Questions in Dynamic Semantics.
Maria Aloni, Alastair Butler and Paul Dekker (eds.).
Current Research in the Semantics/Pragmatics Interface, Vol. 17.
Copyright © 2007 by Emerald Group Publishing Limited
so-called clausal\textsuperscript{1} or primary\textsuperscript{2} implicatures). The underlying principle motivating this inference is Grice’s first maxim of Quantity. Assuming further that the speaker is maximally informed, the hearer infers that $S'$ is in fact false according to the speaker (hereafter, rule R2).

(1) A or B
(2) A and B

Suppose the speaker utters a sentence of the form of (1). Its unique scalar alternative is (2). Since (2) is logically stronger than (1), (2) is not part of the speaker’s beliefs. Moreover, if the speaker is maximally informed, (2) is false, so that or in (1) is interpreted as exclusive, even though its literal linguistic meaning is that of inclusive disjunction.

Whatever the merits of this approach (in particular, the fact that it predicts that the exclusive reading of or should disappear in monotone decreasing contexts, due to the reversal of entailment patterns), it has been shown to be inaccurate in many cases, especially when a scalar term is interpreted under the scope of some operators. For instance, Chierchia (2002) points out that the neo-Gricean procedure yields too weak results for a sentence like (3):

(3) Each of the students read *Othello* or *King Lear*.

(3) (sometimes) implicates (4)\textsuperscript{3}:

(4) Each of the students read *Othello* or *King Lear* and not both.

The neo-Gricean account predicts a much weaker implicature, namely (5):

(5) It is not the case that each of the students read *Othello* and *King Lear*.

Another problem is that the neo-Gricean account can also lead to too strong predictions. Take a sentence of the following form:

(6) (A or B) or C

Scalar alternatives of (6):

a. (A and B) or C
b. (A or B) and C
c. (A and B) and C

All these alternatives are stronger than (6), so that (6) should implicate that they are all false (by rule R2). In particular, a. should be false, in

\textsuperscript{1}Gazdar (1979)
\textsuperscript{2}Sauerland (2004)
\textsuperscript{3}In section 10.3.3, I account for the fact that this inference is not systematic.