



Quantity Implicatures

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A seemingly simple issue

How do interpretations like the following arise?

- (1) Betty smoked some of her cigars.
 \leadsto She didn't smoke them all.
- (2) Betty may have been drinking.
 \leadsto The speaker isn't sure if Betty has been drinking.
- (3) Betty had a sherry or a brandy.
 \leadsto She didn't have both.

Upper-bounded construals aren't mandatory

- (4) Betty smoked some of her cigars and she may even have smoked them all.
≠ Betty smoked some but not all of her cigars and she may even have smoked them all.
- (5) If Betty smoked a cigarette or a cigar, she will be fined.
≠ If Betty smoked one but not both, she will be fined.
- There seems to be a general feeling that, as a rule, *some* is interpreted as “some but not all” (and similarly for other scalar expressions).
 - That intuition is probably wrong.

“If I say to any one, ‘I saw some of your children to-day’, he might be justified in inferring that I did not see them all, not because the words mean it, but because, if I had seen them all, it is most likely that I should have said so.”

Enter pragmatic theory:

Conversational implicatures (Grice 1975)

Cooperative Principle

“Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.”

(6) A: I am out of petrol.

B: There is a garage round the corner.

Enter pragmatic theory:

Conversational implicatures (Grice 1975)

Submaxim of Quantity

“Make your contribution as informative as is required (for the current purposes of the exchange).”

(7) A: Where does C live?

B: Somewhere in the South of France.

👉 Relevance is essential: it wouldn't do to require that the speaker make his utterance as informative as possible:

(8) Fred is snoring.

↗ Bujumbura is not the capital of Burundi.

Conversational implicatures are abductive inferences

- A conversational implicature is a byproduct of diagnosing the speaker's beliefs and desires.
- Alternative diagnoses are always possible in principle.

(9) Somebody hasn't eaten his porridge yet.

- Hence, there cannot be anything like a calculus for computing conversational implicatures.
- The best we can hope to do, as theorists, is analyse patterns of (conversational) inference.

Scalar implicatures (Horn 1972)

- Scalar implicatures are a species of quantity implicature that hinges on scalar expressions like *some*, *may*, *or*, etc.
- Scalar expressions line up in scales:

$\langle \textit{some}, \textit{many}, \textit{most}, \textit{all} \rangle$

$\langle \textit{may}, \textit{must} \rangle$

$\langle \textit{or}, \textit{and} \rangle$

- Scales play a key role in the derivation of scalar implicatures (details to be discussed shortly).
- For many researchers, the concept of “scalar implicature” is more linguistic than pragmatic.

- What are scales?
- Where do they come from?
- How exactly are they involved in the derivation of scalar implicatures?

The generative view (Gazdar 1979, Soames 1982)

- “Scales are, in some sense, ‘given to us’.” (Gazdar 1979)
- Scales serve to generate alternatives: sentences the speaker could have used instead of the one he did in fact use.
- Scalar implicatures are derived by denying that the speaker agrees with these alternatives.

NB: Form comes first.

The generative view: an example

- S's utterance : “Wilma smoked many of her cigarettes”
- Scale : $\langle \text{some, many, most, all} \rangle$
- Alternatives : “Wilma smoked most of her cigarettes”
“Wilma smoked all of her cigarettes”
- Implicatures : $\neg \text{BEL}_S(\text{W smoked most of her cigarettes})$
 $\neg \text{BEL}_S(\text{W smoked all of her cigarettes})$

The generative view: some issues

- It remains unclear where scales come from.
- The generative view creates an implausible chasm between scalar and non-scalar quantity implicatures:

(10) Betty had a sherry or a brandy.

$\leadsto \neg \text{BEL}_S(\text{B had a sherry and a brandy})$ [a]

$\leadsto \neg \text{BEL}_S(\text{B had a sherry})$ [b]

$\leadsto \neg \text{BEL}_S(\text{B had a brandy})$ [c]

(11) A: Where does Clyde live?

B: Somewhere in the South of France.

\leadsto B doesn't know exactly where Clyde lives.

- The generative view is mistaken about the interaction between alternatives and implicatures.

(12) You can have fruit or cheese.

\leadsto You can have fruit.

\leadsto You can have cheese.

(13) Julius may be American or Canadian.

\leadsto He may be American.

\leadsto He may be Canadian.

What's the problem?

These inferences are puzzling because:

- φ entails “ φ or ψ ”.
- If φ entails ψ , then “May φ ” entails “May ψ ”.
- Hence, “May φ ” entails “May φ or ψ ”, and *not* vice versa.

(14) Julius is American or Canadian.

- Alternatives : Julius is American
Julius is Canadian
- Implicatures : $\neg \text{BEL}_S(\text{Julius is American})$
 $\neg \text{BEL}_S(\text{Julius is Canadian})$



(15) Julius may be American or Canadian.

- Alternatives : Julius may be American
Julius may be Canadian
- Implicatures : $\neg \text{BEL}_S(\text{Julius may be American})$
 $\neg \text{BEL}_S(\text{Julius may be Canadian})$



One way of partitioning S's possible belief states:

	i_1	i_2	i_3	i_4
Julius is American	m	m	\overline{m}	\overline{m}
Julius is Canadian	m	\overline{m}	m	\overline{m}

Where: m = “for all S knows, this may be true”

\overline{m} = “for all S knows, this cannot be true”

(16) Julius may be American or Canadian.

	i_1	i_2	i_3	i_4
Julius is American	m	m	\overline{m}	\overline{m}
Julius is Canadian	m	\overline{m}	m	\overline{m}
		\times	\times	\times

\leadsto Julius may be American

\leadsto Julius may be Canadian

(17) You can have fruit or cheese.

	i_1	i_2	i_3	i_4
You have fruit	a	a	\bar{a}	\bar{a}
You have cheese	a	\bar{a}	a	\bar{a}
		\times	\times	\times

Where: a = “allowed”

\bar{a} = “not allowed”

(17) You can have fruit or cheese.

	i_1	i_2	i_3	i_4
You have fruit	a	a	\bar{a}	\bar{a}
You have cheese	a	\bar{a}	a	\bar{a}
		\times	\times	\times

Where: a = “allowed”

\bar{a} = “not allowed”

\leadsto You can have fruit

\leadsto You can have cheese

- On the generative view, the derivation of implicatures is driven by alternatives: form comes first.
- On the pragmatic view, hearers reason about intentional states from the start: beliefs and desires come first.
- Alternatives still play a role: they serve to weed out possible intentional states deemed to be less plausible.
- Alternatives aren't always involved in the derivation of quantity implicatures.

The variety of quantity implicature

Scalar implicatures

- “Wilma smoked most of the cigars”
 $\leadsto \neg \text{BEL}_S(\text{Wilma smoked all of the cigars})$
- Relevant alternatives: “Wilma smoked all of the cigars”

Free choice

- “Julius may be American or Canadian”
 $\leadsto \text{POSS}_S(\text{Julius is American})$
 $\leadsto \text{POSS}_S(\text{Julius is Canadian})$
- Relevant alternatives: “Julius may be American”
“Julius may be Canadian”

Implicatures without alternatives

- “Clyde lives somewhere in the South of France”
 $\leadsto S$ doesn't know exactly where Clyde lives
- Relevant alternatives: none

And now for something completely different

- (18) a. Around here, we don't LIKE coffee, we LOVE it.
b. If it's WARM, we'll lie out in the sun. But if it's VERY warm, we'll go inside and sit in front of the air-conditioner.
c. A teacher who is SOMETIMES late is preferable to one who is ALWAYS late.
- These cases cannot be accounted for in terms of quantity implicature.
 - Rather, they involve truth-conditional narrowing.

Three views on truth-conditional narrowing

Conventionalist:

- A. One of the lexical meanings of “some” is “some but not all”.
- B. “... some ...” may be construed as “... EXH ... some ...”.

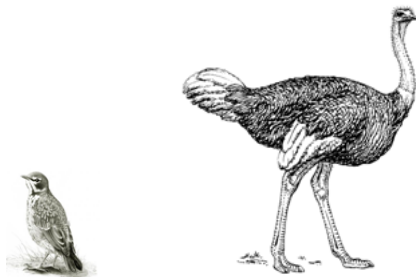
Pragmatic:

- C. Particular *occurrences* of “some” may be construed as “some but not all”. Cf.:

- (19) a. Julius isn't RICH: he's RICH.
- b. Betty didn't OPEN her handbag: she made an
 INCISION on the side.

And now for something completely different (again)

























































(20) This is a bird.



- The animal on the left is a “better” verifier of (20) than the one on the right.
- However, this is just a typicality effect: (20) is true of both.

Typicality effects with scalars

(21) Some of the lawyers are happy.

0	1	2	3	4	5	6	7
							
							
							
							
							
							
							

- [3] and [4] are “better” verifiers of (21) than [6] or [7].
- However, these are typicality effects: they have nothing to do with either implicature or narrowing.

- The Gricean account of quantity implicatures can accommodate a variety of pragmatic inferences.
- Scalar expressions give rise to at least three distinct interpretative effects:
 - [1] implicature
 - [2] narrowing
 - [3] typicality
- [1] and [2] can be accounted for, within a Gricean framework, as pragmatic phenomena.
- [3] is quite different: typicality is not part of the communicated content of an utterance.

Thank you for giving me some of your time