

Embedded implicatures

Warning: Embedded implicatures don't exist.

Reminder: The Standard Recipe for Q-implicatures

(1) Clyde: “Bonnie stole some of the pears.”

1 Rather than saying (1), Clyde could have said:

(1*) Bonnie stole all the pears.

Why didn't he do so?

2 The most likely explanation is that Clyde doesn't believe that (1*) is true: $\neg \text{Bel}_C(1^*)$. \leftarrow *primary/weak implicature*

3 Clyde is likely to have an opinion as to whether (1*) is true: $\text{Bel}_C(1^*) \vee \text{Bel}_C\neg(1^*)$. \leftarrow *Bivalence Assumption*

4 Thus, it follows that $\text{Bel}_C\neg(1^*)$: Clyde believes that Bonnie didn't steal all the pears. \leftarrow *secondary/strong implicature*

Problems with the Gricean account

A problem with belief

(2) Clyde: “Vernon believes that Bonnie stole some of the pears.”

1 Rather than saying (2), Clyde could have said:

(2*) Vernon believes that Bonnie stole all the pears.

Why didn't he do so?

2 The most likely explanation is that Clyde doesn't believe that (2*) is true: $\neg \text{Bel}_C(2^*)$.

3 Clyde is likely to have an opinion as to whether (2*) is true: $\text{Bel}_C(2^*) \vee \text{Bel}_C\neg(2^*)$.

4 Thus, it follows that $\text{Bel}_C\neg(2^*)$, i.e.

$\text{Bel}_C\neg \text{Bel}_V(\text{Bonnie stole all the pears})$

This is fine as far as it goes, but what we would like to have is:

$\text{Bel}_C \text{Bel}_V\neg(\text{Bonnie stole all the pears})$

(3) Clyde: “Bonnie stole an apple or some of the pears.”

1 Rather than saying (3), Clyde could have said:

(3*) Bonnie stole an apple or all the pears.

Why didn't he do so?

2 The most likely explanation is that Clyde doesn't believe that (3*) is true: $\neg \text{Bel}_C(3^*)$.

3 Clyde is likely to have an opinion as to whether (3*) is true: $\text{Bel}_C(3^*) \vee \text{Bel}_C\neg(3^*)$.

4 Thus, it follows that $\text{Bel}_C\neg(3^*)$.

☹ But if $\text{Bel}_C\neg(3^*)$, then Clyde believes that Bonnie didn't steal an apple.

A problem with “know”

- (4) Clyde knows that Bonnie stole some of the pears.
- This may imply that Bonnie didn't steal all the pears.
 - Why?

(5) Clyde: “At least two of the boys danced with some of the girls.”

1 Rather than saying (5), Clyde could have said:

(5*) At least two of the boys danced with all the girls.

Why didn't he do so?

2 The most likely explanation is that Clyde doesn't believe that (5*) is true: $\neg \text{Bel}_C(5^*)$.

3 Clyde is likely to have an opinion as to whether (5*) is true: $\text{Bel}_C(5^*) \vee \text{Bel}_C\neg(5^*)$.

4 Thus, it follows that $\text{Bel}_C\neg(5^*)$.

⊖ But if $\text{Bel}_C\neg(5^*)$, then Clyde believes that at most one of the boys danced with all the girls.

- (6) a. Around here, we don't LIKE coffee, we LOVE it.
b. I'm not HAPPY he's gone — I'm ELATED.
- These examples seem to require that “like” and “happy” are interpreted as entailing “don't love” and “not elated”.
 - But this seems to imply (shudder!) that scalar implicatures are factored in at word level.
 - Furthermore, this would have to be done in a downward entailing environment.
- ☞ It is virtually certain that these are not Q-implicatures.

Comparatives:

- (7) a. Drinking warm coffee is better than drinking hot coffee.
b. A teacher who is sometimes late is preferable to one who is always late.

Conditionals:

- (8) a. 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.
b. If you're convicted of a felony, you'll spend at least a year in jail. And if you're convicted of murder, you'll be executed.

The localist spectre

Cohen (1971), Landman (1998), Levinson (2000)
Chierchia (2004)

- There is a cheap solution: scalar inferences are factored in below sentence level, e.g.:
 - Vernon believes that Bonnie stole some [but not all] of the pears.
 - If it's warm [but not very warm], we'll lie out in the sun.
But if it's VERY warm, . . .
- This approach is ad hoc from the start, but we'll discuss it at some length later on.
- Until then, let's agree that localism is Bad.

Divide and conquer

The problem cases fall into two categories:

Unmarked:

- ① Bonnie stole an apple or some of the pears.
- ② Vernon believes that Bonnie stole some of the pears.
- ③ Clyde knows that Bonnie stole some of the pears.
- ④ At least two of the boys danced with some of the girls.

Marked:

- Around here, we don't LIKE coffee, we LOVE it.
- Drinking WARM coffee is better than drinking HOT coffee.
- 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.

- The Gricean approach is basically correct, in the sense that it can account for all the unmarked cases.
- The marked cases have nothing to do with conversational implicature.
- The marked cases all involve *narrowing*, which is a pragmatic operation.
- Narrowing applies pre-compositionally, and therefore affects the sentence's truth conditions.

- 1 All the *unmarked* cases can be accounted for on Gricean (post-compositional) principles, but in different ways:
 - [a] Alternatives:
 - ① Bonnie stole an apple or some of the pears.
 - [b] Belief:
 - ② Vernon believes that Bonnie stole some of the pears.
 - [c] Discourse:
 - ③ At least two of the boys danced with some of the girls.
 - ④ Clyde knows that Bonnie stole some of the pears.
- 2 All the *marked* cases involve the same mechanism, i.e. (pre-compositional) narrowing:
 - Around here, we don't LIKE coffee, we LOVE it.
 - Drinking WARM coffee is better than drinking HOT coffee.
 - 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.

Disjunction and belief reports

(9) Clyde: “Bonnie stole an apple or some of the pears.”

Sauerland’s analysis:

- The alternatives to (9) include:
 - [1] Bonnie stole an apple.
 - [2] Bonnie stole some of the pears.
 - [3] Bonnie stole all the pears.
- Each of these gives rise to a weak implicature: $\neg\text{Bel}_C[n]$
- Which can be strengthened for $n = 3$: $\text{Bel}_C\neg[n]$
- But not in the other cases:
 - Since $\text{Bel}_C(9)$ and $\neg\text{Bel}_C[1]$, it can’t be the case that $\text{Bel}_C\neg[2]$
 - Since $\text{Bel}_C(9)$ and $\neg\text{Bel}_C[2]$, it can’t be the case that $\text{Bel}_C\neg[1]$

- (10) a. Vernon believes that Bonnie stole some of the pears.
b. Bonnie stole all the pears

Spector:

- Sentence (10a) may suggest:
(10a*) Vernon said that Bonnie stole some of the pears.
- The scalar inference associated with (10a) is due to (10a*).

van Rooij & Schulz, Russell:

- (10a) licenses the (weak) implicature that $\neg \text{Bel}_V(10b)$.
- Suppose the Bivalence Assumption holds *for Vernon*:
 $\text{Bel}_V(10b) \vee \text{Bel}_V\neg(10b)$.
- Then it follows that $\text{Bel}_V\neg(10b)$.

Conversational implicature as a discourse phenomenon

A: I am out of petrol.

B: There is a garage round the corner.

Grice's gloss:

“B would be infringing the maxim “Be relevant” unless he thinks, or thinks it possible, that *the garage* is open, and has petrol to sell . . .” (emphasis added)

- This very much looks like an anaphoric link from the implicature into the proposition expressed by B.
- A shift in perspective is in order: we have to take (more) seriously what was evident all along: that conversational implicature is a discourse phenomenon.

In a discourse about Clyde:

“He has a pet. It is a wombat.”

x z
Clyde(x)
pet(z)
x has z
wombat(z)

“There is a garage around the corner.”

meaning : there is a garage around the corner

implicature : it is open

x
garage(x) around-corner(x) open(x)

- Conversational implicatures are derived in the context of (inter alia) the preceding discourse.
- This context includes discourse referents that were introduced in the process of interpreting previous utterances *and* the current one.
- Conversational implicatures link to the discourse via these discourse referents.
- Put otherwise: the hearer reasons in terms of these discourse referents.

(11) Clyde: “At least two of the boys danced with some of the girls.”

1 Rather than saying (11), Clyde could have said:

(11*) At least two of the boys danced with all the girls.

Why didn't he do so?

2 The most likely explanation is that Clyde doesn't believe that (11*) is true: $\neg \text{Bel}_C(11^*)$.

3 Clyde is likely to have an opinion as to whether (11*) is true: $\text{Bel}_C(11^*) \vee \text{Bel}_C\neg(11^*)$.

4 Thus, it follows that $\text{Bel}_C\neg(11^*)$.

5 But if $\text{Bel}_C\neg(11^*)$, then Clyde believes that at most one of the boys danced with all the girls.

Getting the question right

- We've been asking the wrong question.
- What we asked was:
 - Why didn't Clyde say: "At least two of the boys danced with all the girls."?
- What we should have asked is:
 - Why didn't Clyde say that *the boys in question* danced with all the girls?
- The answer to that question might go as follows:
 - Clyde doesn't have evidence for the claim that the boys in question danced with all the girls.
 - I.e.: $\neg \text{Bel}_C(\text{all the boys i.q. danced with all the girls})$
 - Which is possibly strengthened to
 - $\text{Bel}_C \neg (\text{all the boys i.q. danced with all the girls})$

Implementing the analysis in DRT

Clyde: “At least two of the boys danced with some of the girls.”

Q: *Could it be that Clyde believes (*) ?*

A: *Probably not, because then he would have said so.*

Same point, different example

(12) A friend of mine_x has lived in Germany for many years.

Alternative:

(13) A friend of mine has lived in Germany all his life.

Standard story:

- 1 Why didn't S say (13)?
- 2 Presumably, because $\neg \text{Bel}_S(13)$.

A better story:

- 1 Could it be that S believes that x has lived in Germany all his life?
- 2 Probably not, because then S would have said (13).

- If this story is on the right track, then the derivation of Q-implicatures shouldn't begin by considering alternatives:
Instead of asking, “Why didn't the speaker *say* ‘...’?”,
we now ask: “Could it be that the speaker *believes* ...?”
- Hence, this approach is intention-based from the start.

Beyond propositions

- The old-fashioned way of looking at interpretation:
 - The primary unit of interpretation is the sentence.
 - Sentences express propositions, and implicatures are derived from propositions.
 - A discourse is just a sequence of propositions.
- This doesn't work because the interpretation of a sentence is inextricably bound up with the context and the preceding discourse.
- We don't have anything like classical propositions anymore.

Q: What are we going to have instead of propositions?

A: New information.

- New information may enter the discourse in at least two very different ways:
 - assertion
 - presupposition
- Hence, implicatures can derive from presuppositions.

Presupposition

The hallmark of presuppositions is that they tend to be “immune” to embedding. E.g.:

Factives:

- (14) a. Bonnie *regrets* that she ate the tarts.
b. Bonnie doesn't regret that she ate the tarts.
c. Perhaps, Bonnie regrets that she ate the tarts.
 \leadsto Bonnie ate the tarts.

Definites:

- (15) a. *Clyde's gun* is in his pocket.
b. Bonnie believes that *Clyde's gun* is in his pocket.
c. If *Clyde's gun* is in his pocket, we're safe for now.
 \leadsto Clyde has a gun.

- Let $\phi\{\psi\}$ be a sentence containing an expression that the triggers the presupposition that ψ is true.

- E.g. “Clyde’s gun is in his pocket” is of the form

$$\phi\{\text{Clyde has a gun}\}.$$

- Then we can say that, in general:

$$\phi\{\psi\} \text{ will be interpreted as “}\psi \text{ and } \phi\text{”}.$$

- This is a pragmatic phenomenon, which takes place on the discourse level.

Presupposition, givenness, and implicatures

- It is widely held that presupposed information is given, or rather: is *presented* by the speaker as given.
- This means that *de facto* presupposed information may well new.
- If this is the case, it may license implicatures just like asserted information does.

④ Presuppositions can license implicatures, too

- 1 Clyde knows that Bonnie stole some of the pears.
 - 2 Does Clyde know that Bonnie stole some of the pears?
 - 3 Please make sure that Clyde knows that Bonnie stole some of the pears.
 - 4 Clyde doesn't know that Bonnie stole some of the pears.
- ↪ Bonnie stole some of the pears.
↪ Bonnie didn't steal all of the pears.

- (16) It was she who gave some of the boys blond hairdos during the tournament.
- ↪ Some of the boys were given blond hairdos.
 - ↪ Not all the boys were given blond hairdos.
- (17) I didn't realize that some of the early church fathers and even the great reformers (Luther, Calvin) believed in the perpetual virginity of Mary.
- ↪ Some of the early church fathers believed ...
 - ↪ Not all the early church fathers believed ...

Where are we now?

- We have seen how all the unmarked cases of “embedded implicature” can be accounted on Gricean principles:
 - ① Bonnie stole an apple or some of the pears.
 - ② Vernon believes that Bonnie stole some of the pears.
 - ③ At least two of the boys danced with some of the girls.
 - ④ Clyde knows that Bonnie stole some of the pears.
- All these cases are different: there is no unified explanation that covers them all. E.g.
 - Vernon hopes that Bonnie stole some of the pears.
- We are left with the marked cases:
 - Around here, we don't LIKE coffee, we LOVE it.
 - Drinking WARM coffee is better than drinking HOT coffee.
 - 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.

Lexical pragmatics

Why marked cases are different

- Marked cases are marked.
- In the unmarked but not in the marked cases, scalar inference and Fregean content can be separated:
(18) a. Vernon believes that Bonnie stole some of the pears.
 b. Vernon believes that Bonnie stole some of the pears and he believes that she didn't steal all of them.

Try this with:

(19) I'm not HAPPY he's gone — I'm ELATED.

- There are no convincing non-localist analyses for the marked cases.

- There is a lot of evidence for *pragmatic* processes that readjust lexical meanings *before* semantic composition:

- (20)
- a. He can hit the ball two *football fields*.
 - b. He made a pile in *radio*.
 - c. He hit a home run two *games* ago.
 - d. I love some kinds of liver; *chicken* is tasty.

- *Narrowing* is a special instance of this:

- (21)
- a. They didn't have sexual intercourse: they fucked.
 - b. Eating your hamburger is better than devouring it.
 - c. If you give her a car she'll love you. But if you give her a Fiat, she'll hate you.

Truly local scalar inferences aren't inferences

Rather, they are instances of narrowing:

- (22) a. Around here, we don't LIKE coffee, we LOVE it.
b. They didn't have sexual intercourse: they fucked.
- (23) a. Drinking WARM coffee is better than drinking HOT coffee.
b. Eating your hamburger is better than devouring it.
- (24) a. 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.
b. If you give her a car she'll love you. But if you give her a Fiat, she'll hate you.

Summing up

- Nota bene: “Embedded implicatures” are rare.
- There are two very different kinds of pragmatic processes:
 - post-semantic (conversational implicature)
 - lexical pragmatics
- For the most part, so-called “embedded implicatures” are post-semantic.
- But some of them (the marked cases) have to be relegated to lexical pragmatics.
- All of this can be accommodated in a Gricean framework.