

Embedded implicatures (cont.)

Bart Geurts

(2) Clyde knows that Bonnie stole some of the pears.

- This may imply that Bonnie didn't steal all the pears.
- Why?

A problem with belief

(1) Clyde: "Vernon believes that Bonnie stole some of the pears."

- 1 Rather than saying (1), Clyde could have said:  
(1\*) 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 (1\*) is true:  $\neg \mathbf{Bel}_C(1^*)$ .
- 3 Clyde is likely to have an opinion as to whether (1\*) is true:  $\mathbf{Bel}_C(1^*) \vee \mathbf{Bel}_{C\neg}(1^*)$ .
- 4 Thus, it follows that  $\mathbf{Bel}_{C\neg}(1^*)$ , i.e.

$\mathbf{Bel}_{C\neg}\neg\mathbf{Bel}_V(\text{Bonnie stole all the pears})$

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

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

A problem with existentials

Chierchia (2004)

(3) Clyde: "At least two of the boys danced with some of the girls."

- 1 Rather than saying (3), Clyde could have said:  
(3\*) 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 (3\*) is true:  $\neg \mathbf{Bel}_C(3^*)$ .
- 3 Clyde is likely to have an opinion as to whether (3\*) is true:  $\mathbf{Bel}_C(3^*) \vee \mathbf{Bel}_{C\neg}(3^*)$ .
- 4 Thus, it follows that  $\mathbf{Bel}_{C\neg}(3^*)$ .
- ⊖ But if  $\mathbf{Bel}_{C\neg}(3^*)$ , then Clyde believes that at most one of the boys danced with all the girls.

- (4) 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.

The problem cases fall into two categories:

*Unmarked:*

- Vernon believes that Bonnie stole some of the pears.
- Clyde knows that Bonnie stole some of the pears.
- 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.

## Similar problems with other DE environments

*Comparatives:*

- (5) 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:*

- (6) 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.

## Key ideas

- 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.

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

Spector:

- Sentence (7a) may suggest:  
 (7a\*) Vernon said that Bonnie stole some of the pears.
- The scalar inference associated with (7a) is due to (7a\*).

van Rooij & Schulz, Russell:

- (7a) licenses the (weak) implicature that  $\neg \mathbf{Bel}_V(7b)$ .
- Suppose the Bivalence Assumption holds for *Vernon*:  
 $\mathbf{Bel}_V(7b) \vee \mathbf{Bel}_V\neg(7b)$ .
- Then it follows that  $\mathbf{Bel}_V\neg(7b)$ .

In a discourse about Clyde:

“He has a pet. It is a wombat.”

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

## A seemingly harmless detail

Grice (1975)

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.

## Conversational implicatures in DRT

“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 in DRT

- 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.

Embedded implicatures (cont.)

## Back to Q-implicatures: Existentials

- (8) Clyde: “At least two of the boys danced with some of the girls.”
- 1 Rather than saying (8), Clyde could have said:  
(8\*) 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 (8\*) is true:  $\neg \mathbf{Bel}_C(8^*)$ .
  - 3 Clyde is likely to have an opinion as to whether (8\*) is true:  $\mathbf{Bel}_C(8^*) \vee \mathbf{Bel}_C\neg(8^*)$ .
  - 4 Thus, it follows that  $\mathbf{Bel}_C\neg(8^*)$ .
  - 5 But if  $\mathbf{Bel}_C\neg(8^*)$ , then Clyde believes that at most one of the boys danced with all the girls.

Embedded implicatures (cont.)

## 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.:  $\neg \mathbf{Bel}_C(\text{all the boys i.q. danced with all the girls})$
  - Which is possibly strengthened to  
 $\mathbf{Bel}_C\neg(\text{all the boys i.q. danced with all the girls})$

Embedded implicatures (cont.)

## Same point, different example

- (9) A friend of mine<sub>x</sub> has lived in Germany for many years.
- Alternative:  
(10) A friend of mine has lived in Germany all his life.

Standard story:

- 1 Why didn't S say (10)?
- 2 Presumably, because  $\neg \mathbf{Bel}_S(10)$ .

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 (10).

Embedded implicatures (cont.)

## Intentions first

- 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

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.

Embedded implicatures (cont.)

## 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.

Embedded implicatures (cont.)

Embedded implicatures (cont.)

## Presupposition

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

*Factives:*

- (11) 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:*

- (12) 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.

Embedded implicatures (cont.)

## Presupposition

- Let  $\phi\{\psi\}$  be a sentence containing an expression that the triggers the presupposition that  $\psi$  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:  
 $\phi\{\psi\}$  will be interpreted as “ $\psi$  and  $\phi$ ”.
- This is a pragmatic phenomenon, which takes place on the discourse level.

Embedded implicatures (cont.)

## 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.

Embedded implicatures (cont.)

## 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.

Embedded implicatures (cont.)

## Real data

- (13) 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.
- (14) 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 ...

Embedded implicatures (cont.)

## 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:
    - (15) 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:
- (16) I'm not HAPPY he's gone — I'm ELATED.
- There are no convincing non-localist analyses for the marked cases.

Embedded implicatures (cont.)

## Lexical pragmatics

Nunberg (1978)

- There is a lot of evidence for *pragmatic* processes that readjust lexical meanings *before* semantic composition:
  - (17) 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:
  - (18) 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.

Embedded implicatures (cont.)

## Truly local scalar inferences aren't inferences

Rather, they are instances of narrowing:

- (19) a. Around here, we don't LIKE coffee, we LOVE it.
- b. They didn't have sexual intercourse: they fucked.
- (20) a. Drinking WARM coffee is better than drinking HOT coffee.
- b. Eating your hamburger is better than devouring it.
- (21) 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.

Embedded implicatures (cont.)

## 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.

Embedded implicatures (cont.)