

## *The psychology of meaning*

# Lecture 4: Processing Q-implicatures

### 1. Introduction

- The Gricean framework is often claimed not to be a psychological one, or not to be “psychologically adequate”.
- Such charges are odd, because the framework is deeply imbued with such psychological notions as belief, intention, etc.
- What is meant, probably, is that the framework is not very plausible as a basis for a theory of *processing*. (Recall the discussion of levels in Lecture 1.) Is this true?

### 2. Charges of psychological inadequacy

- Logical complexity*: The logical structure of conversational implicatures is too complex (e.g., Wilson 2000).
- Abduction*: Conversational implicatures are abductive inferences, and abduction is hard.
- The intentional stance*: The derivation of a conversational implicature involves reasoning about the speaker’s intentional state: what he wants, believes, and so on. This type of reasoning is hard, especially for children, and it is improbable that hearers are doing this all the time, as they should if the Gricean view is to be upheld.
- Incremental processing*: According to Grice, you have to know the meaning of a sentence before you can start deriving conversational implicatures. This premiss sits uneasily with all the experimental evidence showing that utterances are interpreted incrementally, i.e. word by word (e.g., Storto and Tanenhaus 2005, Sedivy 2007).
- Alternatives*: It is psychologically implausible that hearers are constantly monitoring what the speaker could have said, but didn’t (No-veck and Sperber 2007).

Here, I will focus on the last two points. See Geurts (2010: Chapter 4) for discussion of the first three.

### 3. Incremental processing

There is quite compelling experimental evidence that language processing is incremental and fast.

At eight o'clock on Thursday morning Arthur didn't feel very [...]. He woke up blearily, got up, wandered blearily round his [...], opened a [...], saw a [...], found his [...], and stomped off to the [...] to wash. (From the *Hitchhiker's guide to the Galaxy*, by Douglas Adams)

Incremental processing is sometimes thought to be a problem, because:

If Grice is right [...] you need to know the literal meaning or sense of a sentence before you can calculate its implicatures in a context [...]. (Levinson 1983: 117)

However:

- If this is a problem for implicatures, it should be a problem for entailments, too—which it isn't.

(1) Only the girls are snoring.  
    ~> None of the non-girls are snoring.

Why should implicatures be any different?

(2) Some of the girls are snoring.  
    ~> Not all of the girls are snoring.

- Often, the hearer can guess how the sentence will end before it is complete.
- Hearers may, in principle, infer *partial* (schematic) implicatures at an early stage, which are fleshed out further down.

Hence, the notion of conversational implicature is not incompatible with the fact that language is processed incrementally. This leaves us with the question *when*, as a matter of fact, conversational implicatures are computed.

Two answers (which may both be correct):

- As early as possible.
- At the end of the sentence (“sentence wrap up”).

#### 4. Alternatives

In particular, [the Gricean theory's] implications for processing are less attractive. According to such an account, the inference from the utterance to its scalar implicature goes through a consideration not just of what the speaker said and the context but also of what the speaker might have said but did not. It is this type of onerous inference that makes the Gricean account of implicature derivation seem implausible from a cognitive and developmental point of view. (Noveck and Sperber 2007)

However:

- There is a considerable quantity of experimental evidence that hearers *do* consider alternatives online.

E.g. ERPs.

(3) Jenny put the sweet in her {mouth/pocket} after the lesson. (Hagoort and Brown 1994)

(4) A woman saw a dancing peanut who had a big smile on his face. The peanut was singing about a girl he had just met. And judging from the song, the peanut was totally crazy about her. The woman thought it was really cute to see the peanut singing and dancing like that. The peanut was {salted/in love}, and by the sound of it, this was definitely mutual. He was seeing a little almond. (Nieuwland and van Berkum 2006)

- There is also evidence showing that hearers monitor the amount of information given by the speaker.

E.g. Altmann and Steedman (1988):

(5) A burglar broke into a bank carrying some dynamite. He planned to blow open a safe. Once inside, he saw that there was ...

- a. a safe with a new lock and a safe with an old lock.
- b. a safe with a new lock and a strongbox with an old lock.

(6) The burglar blew open the safe with ...

- a. the dynamite and made off with the loot.
- b. the new lock and made off with the loot.

Sedivy et al. (1999):

(7) Pick up the tall glass.

## 5. Conclusion

There are no good reasons for believing that the Gricean theory of conversational implicature is inadequate from a processing point of view.

## Recommended reading

Geurts (2010: Chapter 4)

## References

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