

24.903 Week #6 – 2022-03-07 + 2022-03-09

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1 Inferences from utterance acts

Any time anyone does anything, others will try to interpret the action and draw inferences from it. This is especially so if it's clear that the person who performed the action was well aware that they were being observed.

Once we move to actions that are communicative, this interpretive engine becomes ever more important.

Example: in the before times, it was not unusual for there to be situations where two people greeting each other involved an expectation of a handshake. When someone did not offer their hand, this was taken as a deliberate choice and a signal of some kind of unfriendliness.

With linguistic actions, the phenomenon is deeply entrenched into our practices. We've been analyzing the meanings that arise compositionally from the meanings of the parts of a linguistic expression, its structure, and the context. Inferences from an action supplement this "encoded" meaning in many ways. Sometimes, it is very hard to determine whether a perceived ingredient of meaning is encoded or due to situational/"pragmatic" inferences. When we do semantics, it is important to distinguish semantics from pragmatics.

2 Initial examples

- (1) Sally had dinner with some MIT students last night.
 - a. Sally is home early from her trip to DC.
 - b. Sally didn't have dinner with all the MIT students.
 - c. The speaker believes this is true.
 - d. The speaker thinks this is interesting/relevant.
 - e. The speaker thinks I don't know this.

- (2) (I'm hungry!) There's pizza in the fridge.

Some famous examples from Grice (see below):

- (3) (Smith doesn't seem to have a girlfriend these days.)
He's been going to New York a lot lately.
- (4) A is writing a testimonial about a pupil who is a candidate for a philosophy job, and his letter reads as follows: "Dear Sir, Mr. X's command of English is excellent, and his attendance at tutorials has been regular. Yours, etc."
- (5) A is planning with B an itinerary for a holiday in France. Both know that A wants to see his friend C, if to do so would not involve too great a prolongation of his journey:
- A: Where does C live?
- B: Somewhere in the South of France.

3 The Basic Mechanism

- Out of the myriad of things the utterer could have uttered, why did she choose to utter what she did?
- Assume that she was acting maximally rationally and cooperatively.
- What additional assumptions are needed to justify her act?

Calculate additional meaning from reasonable assumptions:

- The utterer is trying to give good information.
- The utterer is trying to give enough information.
- The utterer is trying to give relevant information.
- The utterer is trying to be efficient.

4 Grice

Much of the groundwork for the study of pragmatic inferences was laid by the philosopher Paul Grice.¹

Grice coined the term “implicature” for a proposition that is implied by the utterance of a sentence in a context even though that proposition is not a part of nor an entailment of what was actually said.²

Grice proposed an initial theory of how such implicatures are calculated by participants in a conversation. There is an overarching principle or assumption underlying the system:

- (6) THE 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.

The second layer of the system are more specific assumptions about what counts as rational and cooperative in choosing what to say:

The Maxim of Quantity

1. Make your contribution as informative as is required.
2. Do not make your contribution more informative than is required.

The Maxim of Quality

1. Do not say what you believe to be false.
2. Do not say that for which you lack adequate evidence.

The Maxim of Relation

Be relevant.

The Maxim of Manner

1. Avoid obscurity of expression.
2. Avoid ambiguity.

¹ As with many topics in semantics that overlap with or are adjacent to issues in philosophy, the Stanford Encyclopedia of Philosophy is a good first stop to learn more: [Grandy & Warner 2021](#), [Davis 2019](#).

² This wording is from [Gazdar 1979](#).

3. Be brief.
4. Be orderly.

5 More concisely

Based on the formulation in [Gamut 1991](#): p.205f.

An utterer U makes correct use of a sentence S in order to make a statement to an addressee A just in case:

1. U believes that S is true;
2. U believes that A does not believe that S is true;
3. U believes that S is relevant to the subject of the conversation;
4. For all sentences S' of which S is a logical consequence (and which are not equivalent to S), (1) - (3) do not all hold with respect to S'.

A sentence I is a conversational implicature of a sentence S iff I is a logical consequence of the conditions under which S can be correctly used.

6 Properties of implicature

How can we tell implicatures apart from other components of meaning? The crucial property is that implicatures, in contrast to truth-conditions and pre-suppositions, are not part of the encoded meaning but arise from inferences that arise from the fact that the utterer did what they did. So, what we're looking for is a way to calculate the implicature ("calculability"), independence from the way the linguistic meaning is encoded ("non-detachability"), dependence on contextual facts ("defeasibility"), including the possibility of explicitly defusing the implicature ("cancellability").

In practice, the main thing to try is whether the inference is defeasible/cancelable, whether it can be "walked back".

For example, in answer to the question of where C lives, one can say:

- (7) He lives somewhere in the South of France, and if you want to know more, I can tell you more.

Someone who says (7) is not inviting the implicature that they don't know where C lives or that they are unwilling to provide more detail.

And in answer to whether one likes the new shirt, one can say:

(8) I like the color, and in fact I like everything about it.

In neither case, has the utterer contradicted themselves, which is what would happen if the relevant inference was part of the encoded truth-conditions.

7 The role of conversational assumptions in reference and ambiguity resolution

We discussed the following example in class

(9) A: What do you think of my new shirt?

B: I like the color.

Apart from the fact that it is easy to infer from B's utterance that they don't like other things about the shirt, we also saw that assuming that B's response is supposed to be relevant to A's question, leads to inferring that the shirt is the salient entity whose color is being referred to. So, Relevance as a principle can also help resolving what the context is.

8 A case study: disjunction

Very useful readings: [Simons 1998](#): ch.2 and [Aloni 2016](#).

8.1 Initial data

Sometimes we understand disjunction as exclusive (one but not both of the disjuncts must be true), sometimes as inclusive (at least one of the disjuncts is true, possibly both).

(10) Either Jane is in her room or she is in the library.

(11) Don't worry the party will be fine. Gaëtane will bring her karaoke setup or Mariona will bring a new board game.

8.2 The logicians

[Tarski 1994](#), first published in 1941, writes:

When joining sentences by means of the word “or”, one obtains the DISJUNCTION of those sentences, which is also called the LOGICAL SUM; the sentences forming the disjunction are called the MEMBERS OF THE DISJUNCTION or the SUMMANDS OF THE LOGICAL SUM. Now, in everyday language, the word “or” has at least two different meanings. Taken in the so-called NON-EXCLUSIVE MEANING, the disjunction of two sentences expresses only that at least one of these sentences is true, without saying anything as to whether or not both sentences may be true; taken in another meaning, known as the EXCLUSIVE one, the disjunction of two sentences asserts that one of the sentences is true but that the other is false. To illustrate, let us suppose we see the following notice put up in a bookstore:

Customers who are teachers or college students are entitled to a special reduction.

Here the word “or” is undoubtedly used in the first meaning, since one would not refuse the reduction to a teacher who is at the same time a college student. On the other hand, if a child has asked to be taken on a hike in the morning and to a theater in the afternoon, and we reply:

no, we shall go on a hike or we shall go to the theater,

then our usage of the word “or” is obviously of the second kind, since we intend to comply with only one of the two requests. In logic and in mathematics the word “or” is used always in the first, non-exclusive meaning; the disjunction of two sentences is considered true if at least one of its members is true, and otherwise false. For instance, we may assert:

every number is positive or less than 3,

although there are numbers which are both positive and less than 3. In order to avoid misunderstandings it would be expedient, in everyday as well as in scientific language, to use the word “or” by itself only in the first meaning, and to replace it by the compound expression “either... or...” whenever the second meaning is intended.

8.3 Two problems

1. Important caveat: it is useless to consider any example where the disjunct cannot possibly be both true. In that case, no matter whether the disjunction is inclusive or exclusive, the meanings of the whole sentence are indistinguishable: no world would make one reading true while the other is false.

But this can be fixed. Consider the following example found in [Simons 1998](#), who attributes it to Barbara Partee (pc). Imagine we want to know what Jane is up to and are told:

(12) Either Jane is working or she's in the library.

We still hear an exclusive meaning.

2. The idea that we have an exclusive disjunction of type $\langle t, \langle t, t \rangle \rangle$ makes incorrect prediction for sentences with more than two disjuncts:

(13) Jane is in her room or she's in the library or she's at the track.

We might think that (13) expresses that *exactly one* of the three disjuncts is true. This meaning cannot be derived by any combination of inclusive/exclusive readings for the two occurrences of *or*! We went through this in class but you might enjoy calculating the eight possible analyses of (13) (two different syntactic structures, four combinations of inclusive/exclusive for the two /or/s) and seeing that none of them give us the “exactly one is true” reading.

8.4 The pragmatic approach (first pass)

The basic idea is that disjunction only has an inclusive meaning, as far as semantically encoded meaning is concerned. Exclusivity is a pragmatic inference, and implicature. Upon hearing a disjunction, the addressee tries to reconcile the fact that the disjunctive sentence was uttered with the assumption that the utterer is rational and cooperative, in particular that they were providing enough information.

The reasoning might go like this: “U uttered *p or q*. If they had uttered *p and q* instead, that would have conveyed more information that would also have been relevant. So, they must have a good reason for not saying *p and*

q. Presumably, they know that *p and q* is false. They were in a position to anticipate that I would reason this way. So, they want me to conclude that *p or q* is true but that *p and q* is false”.

And voila, we have an exclusive interpretation without having encoded exclusivity in the meaning of *or*. The first formal derivation along these lines was developed in a pioneering work of formal pragmatics: [Gazdar 1979](#).

8.5 Problems

The pragmatic derivation of exclusivity as an implicature from a semantically inclusive encoded meaning is very attractive. But there are several important issues that need to be addressed. The topic continues to be under active investigation. (Yes, we still don’t know what *or* means. Go figure.)

What is the strength of the implicature?

We reasoned that the utterer would have said *p and q* if that were true, so it must be false. But this is in fact not what follows from the basic assumptions of rational cooperative communication. There are other reasons why the utterer would not have said *p and q*. One is that they don’t know whether it is true or false, and thus they should not commit to it either way. So, as first argued by [Soames 1982](#), we need to make an additional assumption: that the speaker in fact is committed to whether *p and q* is true or false. If we add that assumption (now commonly referred to as “Speaker Opinionatedness”) as a premise, then we can conclude that they are convinced that *p and q* is false. To infer from that that *p and q* is in fact false, we need to add yet another assumption: that the speaker’s opinion (whatever it is) is correct.

So, the strong exclusivity inference (*not both p and q*) can only be explained under strong additional assumptions. It is important to figure out whether these assumptions are in fact made when we infer an exclusivity inference. Why should we think that an utterer of *p or q* has an opinion about *p and q*?

What are all the alternatives?

There are other things the utterer could have done instead of producing *p or q*. They could have uttered the stronger sentence *p or q, but not both*. If we proceed to reason in a parallel way to what we’ve been considering here, we

would reach the conclusion that *p or q* is true but that *p or q, but not both* is false, which taken together would mean that we would conclude that *p and q* is true. That is exactly the opposite what we derived before. So, actually, our pragmatic system derives a contradiction, which in other words, means that we should not draw any conclusions about *p and q* either way.

Since we do draw the conclusion that *p and q* is false, we need to exclude *p or q, but not both* from the alternatives that we reason about. This is a problem that has exercised the field ever since it was identified.³

What about multiple disjunctions?

Just like the logicians' exclusive disjunction, the pragmatic approach needs to be able to deal with multiple disjunctions, and in fact it is not straightforward to develop the analysis for such cases. This was pointed out by [Simons 1998](#), among others.

8.6 The other way

While we can't return to the logicians' ambiguity thesis, there is a family of analyses that follow the line that exclusivity is in fact encoded in the grammar, by covert exhaustivity operators. We will not be able to get into this debate in this class. To get started, you could try to read [Chierchia, Fox & Spector 2012](#).

³ The problem was coined "The Symmetry Problem" in class lectures at MIT by von Stechow and Heim in 1998. For a very recent survey of the question which alternatives are relevant to various processes, see [Gotzner & Romoli 2022](#).

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