What is Pragmatics?

Hypothesis: there is a dedicated cognitive system – a semantic system – that plays a central role in an account of the meaning of linguistic expressions (the way they can be used in thought and communication).

Semantics: The study of the semantic system

Pragmatics: The study of other things that might influence meaning besides the semantic system.

It might be useful to conceptualize things sequentially:

LF ---- semantic system -----> SEM_1---- pragmatics -----> SEM_2

A few examples

Non-Semantic Inferences (Implicatures)

Letter of recommendation for a philosophy job: "Dear Sir, Mr. X's command of English is excellent, and his attendance at tutorials has been regular. Yours, Prof. Y, etc." This letter leads to the inference that Mr. X is a pour philosopher (in Prof. Y's opinion). However, we seem to have a clear intuition that this inference does not follow directly from the semantic representation.

Non-linguistic Meaning

The meaning of many expressions depends on extra-linguistic knowledge. This is most obvious when very specific contextual factors can be identified: personal pronouns, demonstratives, domain restriction for quantifiers, etc.

But similar conclusions have been argued for many other expressions: e.g., natural kind terms.

Presuppositions

Certain expressions are acceptable only if certain contextual pre-conditions are met…

It is not yet obvious what the role for pragmatics is here. In the first semester intro we talk about presuppositions as definedness conditions determined by the semantics. If this is true, the question for pragmatics is how to relate definedness conditions to conditions on what is taken for granted in a conversation. We will also discuss various theories of "presupposition projection" that are directly tied to attempts to relate the two notions.

Implicatures

1. Letter of Recommendation

(1) S(peaker):
   Mr. X's command of English is excellent, and his attendance at tutorials has been
   regular.

Addressee:
a. If S believed that X was a good philosopher, S would have said so.
      Hence, it's not the case that S believes that X is a good philosopher.
b. There is reason to believe that S has an opinion with respect to X's philosophical skills.
      Hence, S believes that X is not a good philosopher.

Addressee*:
a*. If S believed that X was a bad philosopher, S would have said so.
      Hence, it's not the case that S believes that X is a bad philosopher.
      Hence (given b), S believes that X is not a bad philosopher.

Question: What blocks the inference of Addressee*?
Plausible answer: There is a known convention for letter writing. Write only good things.

But, why would we draw slightly different conclusions from the following?

(2) S(peaker):
   Mr. X is either a bad philosopher or a good philosopher (or a mediocre
   philosopher).

2. Ignorance Inferences

(3) S: John talked to Mary or Sue.
   Ignorance Inferences:
   S has no opinion as to whether or not John spoke to Mary.
   S has no opinion as to whether or not John spoke to Sue.

Addressee:
a. If S believed that John spoke to Mary, S would have said so.
   Hence, it's not the case that S believes that John spoke to Mary.
b. If S believed that John spoke to Sue, S would have said so.
   Hence, it's not the case that S believes that John spoke to Sue.
c. If S believed that John didn't speak to Mary, S would have believed that John spoke
   to Sue (given that S believes the disjunction). But we've shown that conclusion to be
   false in b.

d. If S believed that John didn't speak to Sue, S would have believed that John spoke to
    Mary (given that S believes the disjunction). But we've shown that conclusion to be
    false in a.

3. Scalar Implicatures

(4) John did some of the homework.
       Standard logical rendition:
       $\exists x(\text{homework }(x) \wedge \text{John-Did}(x))$

       Problematic Inference:
       John didn't do all of the homework.

(5) John bought 3 houses.
       Standard logical rendition:
       $\exists x(|x|=3) \wedge \text{houses}(x) \wedge \text{John-bought}(x))$

       Problematic Inference:
       John didn't buy 4 houses.

(6) John talked to Mary or Sue.
       Standard logical rendition:
       (John talked to Mary) $\vee$ (John talked to Sue)

       Problematic Inference:
       John didn't talk to Mary and Sue.

3.1. Option 1, strengthen the meaning of the relevant lexical items

(7) John did some of the homework.
       Alternative logical rendition:
       $\exists x(\text{homework }(x) \wedge \text{John-Did}(x)) \wedge$
       $\neg \forall x(\text{homework }(x) \rightarrow \text{John-Did}(x))$

(8) John bought 3 houses.
       Alternative logical rendition:
       $\exists x(|x|=3) \wedge \text{houses}(x) \wedge \text{John-bought}(x)) \wedge$
       $\neg \exists x((|x|>3 \wedge \text{houses}(x) \wedge \text{John-bought}(x))$

(9) John talked to Mary or Sue.
       Alternative logical rendition:
       [(John talked to Mary) $\vee$ (John talked to Sue)] $\wedge$
       $\neg$[(John talked to Mary) $\wedge$ (John talked to Sue)]

(10)   Standard Lexical Entries:

   a. [[some]] = $\lambda A.\lambda B.\ A \cap B \neq \varnothing$
   b. [[3]] = $\lambda A.\lambda B.\ |A \cap B| \geq 3$
   c. [[or]] = $\lambda p.\lambda q.\ p = 1$ or $q = 1$.

(11)   Alternative Lexical Entries:

    a. $[[some]] = \lambda A.\lambda B.\ A \cap B \neq \varnothing$ and $\neg(A \subset B)$ $(=[[some\ but\ not\ all]])$
    b. $[[3]] = \lambda A.\lambda B.\ |A \cap B| = 3$ $(=[[exactly\ 3]])$
    c. $[[or]] = \lambda p.\lambda q.\ p + q = 1$ $(=[[ExOR]])$

3.2. Evidence for Standard Lexical Entries

(12)a. John did some of the homework. For all I know he might have done all of it.
    b. $\neq$John did some but not all of the homework. For all I know he might have done all of it.

(13)a. If John bought 3 houses, I will be very angry with him.
    b. $\neq$If John bought exactly 3 houses, I will be very angry with him.

(14)a. John talked to Mary or Bill. I hope he didn't talk to both of them.
    b. $\neq$John talked to Mary or Bill but not to both. I hope he didn't talk to both of them.

3.3. Option 2: Ambiguity

(15)   2 Lexical Entries:

    a. $[[some_{weak}]] = \lambda A.\lambda B.\ A \cap B \neq \varnothing$
        $[[some_{strong}]] = \lambda A.\lambda B.\ A \cap B \neq \varnothing$ and $\neg(A \subset B)$ $(=[[some\ but\ not\ all]])$
    b. $[[3_{weak}]] = \lambda A.\lambda B.\ |A \cap B| \geq 3$
        $[[3_{strong}]] = \lambda A.\lambda B.\ |A \cap B| = 3$ $(=[[exactly\ 3]])$
    c. $[[or_{weak}]] = \lambda p.\lambda q.\ p = 1$ or $q = 1.$
        $[[or_{strong}]] = \lambda p.\lambda q.\ p + q = 1$ $(=[[ExOR]])$

3.4. The Exhaustivity Generalization

But this is a bad proposal for three reasons:

    a. It doesn't capture the full range of scalar implicatures
    b. It makes the wrong predictions for ellipsis (Tamina Stephenson, p.c.)
    c. It misses a generalization

3.4.1   Lexical Ambiguities are empirically insufficient

In downward entailing contexts the relevant inferences are reversed:

(16)   John didn't do all of the homework.

        Implicature:
        John did some of the homework.

(17)   a.   John did much of the homework.
              Implicature: John didn't do all of the homework.
        b.   John didn't do much of the homework.
              Implicature: John did some of the homework.

3.4.2.   Implicatures don't need to be preserved in parallelism environments
                                                                  (Tamina Stepenson, p.c.)

(18)   John did some of the homework. The people who didn't failed the test.

(19)   John has 2 children. Bill does, too. In fact, Bill has 3 children.

(20)   A: How many children does John have?
        B: He has 2 children.
        A: That's interesting none of his friends does.

(21)   A: How many of the problems did John solve?
        B: He solved 4 of them.
        A: I wonder if Bill did, as well.
        B: Of course Bill did. Bill always solves all of the problems

3.4.3. The Generalization:

The phenomenon we are dealing with is pretty general, and multiplying meanings at will
misses the generalization:

(22)   a. It's warm outside. (Likely inference: It is not hot outside)
        b. If it's warm outside, you don't need to take a sweater.
           (≠If it's warm but not hot outside, you don't need to take a sweater).

(23)   a. Mary is as tall as John is. (Likely inference: Mary is not taller than John is.)
        b. Mary is as tall as John is. For all I know, she might be taller
           (≠Mary is exactly as tall as John is. For all I know, she might be taller.)

(24)   a. It's possible that there is a sneak in the box.
                   (Likely inference: It's not necessary…)
        b. You shouldn't open the box if it's possible that there is a sneak inside.

(25)   a. John started working on his experiment.
                   (Likely inference: he didn't finish)
        b. If you start working on your experiment, we will all be happy.

The generalization refers to a class of lexical entries (quantifiers, numeral expressions, truth conditional operators, comparatives, modal operators…), which are members of postulated sets of alternatives, Horn Scales.[1]

Quantifiers: {Some, Many/Much, Most, Every/All}
Numerals: {one, two, three,…}
Truth conditional operators {or, and}
Comparative operators {as, er}
Various gradable adjectives {warm, hot}, {small, tiny} {big, huge}, etc
Modal operators {possible, necessary}
…

(26)   The Exhaustivity Generalization: utterance of a sentence, S, as a default, licenses the inference that (the speaker believes that) all of the scalar alternatives of S that are logically stronger than S are false (Henceforth, the Exhaustivity Inference).

The Scalar Alternatives of a sentence S, Alt(S), are the set of sentences that can be derived from S by replacing scalar items in S by their scale-mates.

(27)   Example:
John bought 4 houses is a Scalar Alternative of *John bought 3 houses* . Since *John bought 4 houses* is logically stronger, The Exhaustivity Generalization tells us that utterance of *John bought 3 houses*, as-a-default, licenses the inference that (the speaker believes) that John didn't buy 4 houses.

Question: Is there a way to state the generalization without reference to arbitrary sets of alternatives? We will see an argument in a recent paper by Katzir that there is.

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[1] I represent Horn-Scales as unordered sets for reasons discussed in Sauerland (2004). In particular, the generalization needs to make reference to an ordering relation among sentences, which makes it unnecessary to order the lexical items.

4.   The (neo)-Gricean Account (Horn, Sauerland,…)[2]

The Exhaustivity Inferences do not follow from the semantics of sentences but rather from pragmatic reasoning about the belief-states of speakers.

4.1. The short version (which doesn't really work)

(28)   John bought 3 houses.

(29)   Hearer's reasoning:
        If John bought 4 houses, that would have been relevant information. s did not provide me with this information. It is therefore reasonable to assume that s thinks that John did not buy 4 houses.

4.2. The formal nature of the set of alternatives

Why not the following:

(30)   *Addressee's reasoning:
        If John bought exactly 3 houses, that would have been relevant information. S did not provide me with this information. It is therefore reasonable to assume that S thinks that John did not buy exactly 3 houses.

After all: *John bought 3 houses* is equivalent to *John bought exactly 3 houses or more than 3 houses.*

If the exhaustivity inference is to follow from reasoning about the alternative utterances that the speaker avoided, something needs to be said in order to insure that we have the right set of alternatives.

(31)a. John bought 4 houses $\in$ {S: Addressee considers S as a possible alternatives when hearing (28)}
    b. John bought exactly 3 houses $\notin$ {S: Addressee considers S as a pos. alt. when hearing (28)}

(32)   Standard Maxim of quantity: If S_1 S_2 are both relevant to the topic of conversation and S_1 is more informative than S_2 the speaker should utter S_1 rather than S_2.

(33)   Neo-Gricean Maxim of quantity: If S_1 S_2 are both relevant to the topic of conversation and S_1 is More informative than S_2 *and $S_1 \in Alt(S_2)$* the speaker should utter S_1 rather than S_2.

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[2] The presentation in this subsection is based on class notes of Kai von Fintel and Irene Heim.

(34)   Alt(S) =
        {S': S' can be derived from S by successive replacement of lexical items with their
        lexically specified alternatives.}

(35)   Alt(four) = {one, two, three, four, five,… }
        Alt(some) = {some, (many), all}
        Alt(or) = {or, and} …

4.3. As it stands the hearer is only justified in making a weaker inference
                        (Soames 1982:455-456; Groenendijk and Stokhof 1984)

(29)   Addressee's reasoning:
        If John bought 4 houses, that would have been relevant information. S did not
        provide me with this information. It is therefore reasonable to assume that S
        thinks that John did not buy 4 houses.

        Wait a second. That was a little hasty. All I can conclude at the moment is that S
        is not in a position to claim that John bought 4 houses. The reason for this could
        be that S thinks that John didn't buy 4 houses. But it could just as well be the case
        that S doesn't know whether or not John bought 4 houses.

Necessary assumption (opinionated speaker): When S is uttered by a speaker, s, the
hearer's default assumption is that for every member of Alt(S), s has an opinion as to
whether or not S is true.

It is sometimes suggested that we get implicatures only when it is presupposed that the
speaker is opinionated. Not obvious that this is true.

(29)   John collected 50 leaves in this bag.

4.4. The long version (which does work)

Hearer's assumptions:

1. NG Maxim of Quantity (NG-MQ): speakers know that they have to make the most
    informative relevant contribution to a conversation given a formally defined set of
    alternatives.
2. Alternative Set: the relevant set of alternatives is constructed with reference to Horn
    Scales; it is Alt(S).
3. Opinionated Speaker (OS): (as a default) speakers are assumed to have an opinion
    regarding the truth-value of members of Alt (S).

(36)   Context: A speaker s utters the sentence, *John bought 3 houses*.

        1. Given NG-MQ, we can infer that it's not the case that s thinks about one of
            the stronger alternatives in the designated set that it is true.

2. The set of alternatives contains *John bought 4 houses*, which is logically stronger than the speaker's utterance. Hence given 1 it's not the case that speaker thinks that this sentence is true.

3. Given OS the default assumption is that the speaker has an opinion as to whether *John bought 4 houses* is true or false. Given 2 (the conclusion that it's not the case that the speaker thinks that the sentences is true), we can conclude that the speaker thinks that it is false.

So we do not derive the conclusion that S is false, but only the conclusion that the speaker thinks S is false. This might be good enough. If a speaker utters a sentence and by that conveys her belief that a certain proposition, p, holds, it is natural that we will accept p whenever we accept the speakers utterance, and that p will seem to be an inference of the sentence. (However, much of the philosophical literature tries to derive something stronger, something like "mutual knowledge" of the speaker's belief that the stronger alternatives in Alt (S) are false.)

4. 5. What is the derived generalization?

Does this really derive the Exhaustivity Generalization?

Not quite, instead:

(37)   The Pragmatic Exhaustivity Generalization: utterance of a sentence, S, as a
         default, licenses the inference that (the speaker believes that) all of the scalar
         alternatives of S that are pragmatically/contextually stronger than S are false

To understand the type of fact that might distinguish between the two generalizations, consider the following:

(38)   John has an even number of kids. He has three kids.

The second sentence of (38), arguably, should not have an *exactly 3* implicature. Once the first sentence is accepted, the second sentence is not contextually stronger than the alternative which is supposedly responsible for the implicature. For further discussion, see the papers on implicatures and encapsulation (on the website).

Homework: What implicatures is the second sentence of (38) predicted to have by the Neo-Gricean account we've outlined?

So (38) appears to argue in favor of the Exhaustivity Generalization in (26) and against the Pragmatic Exhaustivity Generalization in (37). The following is sometimes taken to argue for the opposite conclusion:

(39)   Did you mail the letter?
         I typed it.
         Implicature: I didn't mail the letter.

Standard terminology:

"Implicatures": inferences from sentences based on reasoning about speakers beliefs.
"Scalar Implicatures": Implicatures that rely on the Maxim of Quantity, Horn-
        Alternatives, and the assumption of an Opinionated-Speaker.

We will use the term "Scalar Implicatures" extensionally to refer to the type of
"problematic inferences" we've looked at, even when we will consider grammatical
theories under which these inferences are not the result of reasoning about speakers
beliefs.

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