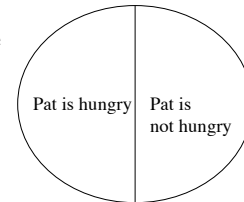# CAS LX 502
Semantics

9b. Presupposition, entailments, and implicatures
10.2, 11

Truth and falsity

- Pat is hungry.
  - True under some possible circumstances, false under others.
- True if the "actual world" is in the "Pat is hungry" half.

| Pat is hungry	Pat is not hungry

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Truth and falsity

- Pat is hungry.
- Pat is sleepy.
- If we know the truth value of each of these sentences, we know in which "quadrant" of the space of possible worlds we can find the "actual world."

Pat is hungry Pat is sleepy	Pat is not hungry Pat is sleepy
Pat is not sleepy Pat is hungry	Pat is not sleepy Pat is not hungry

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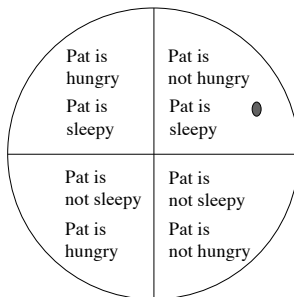
Entailment

- I dropped a yellow pencil.
- I dropped a pencil.
- The first sentence **entails** the second. $p \rightarrow q$.
- Any circumstance under which the first sentence is true, the second sentence is also true.
  - We can draw this pictorially by representing the first sentence as a subset of the second. Possible worlds where the first sentence are true are always be possible worlds where the second sentence is true.

I dropped a yellow pencil / I dropped a pencil / I dropped a pencil / I dropped a non-yellow pencil	I did not drop a pencil

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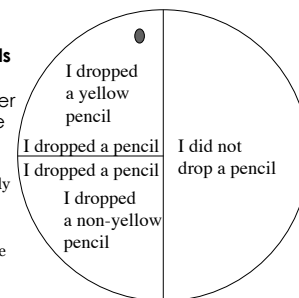
Presuppositions vs. entailments

- Some utterances have a *presupposition*.
  - He had stopped stealing office supplies.
    - He used to steal office supplies.
  - My dog ate my homework.
    - I have a dog, and I have (er, had) homework.
- This similar, but distinct from, *entailment*.
  - The emperor was assassinated.
    - Someone was assassinated.
    - The emperor died.
- In both cases if the first is true, the other(s) is/are true.

Presuppositions vs. entailments

- Presuppositions have a different status from entailments. Consider:
  - He has**n't** stopped stealing office supplies.
    - He used to steal office supplies.
  - My dog **didn't** eat my homework.
    - I have a dog, and I (still, it seems) have homework.

  - The emperor was**n't** assassinated.
  - ↛ Someone was assassinated.
  - ↛ The emperor died.

Presuppositions vs. entailments

- If *p entails q*, *q* does not follow from ¬*p*.
- If *p presupposes q*, *q* still follows from ¬*p*.

- That is, the presupposition of an utterance is taken as part of an "assumed background" that is not affected by the truth/falsity of the asserted proposition.
  - Have you stopped stealing office supplies?

Presupposition failure

- So, what happens if the presupposition isn't met?
  - My great-granddaughter is boisterous.
  - The King of France is bald.
  - The Queen of America sang the international anthem.

- These don't seem really to be true or false—they just seem like presupposition failures. A *truth value gap*.

Accommodation

- Presupposition failure does not always (even often) cause communication breakdown, however.
  - My dog ate my homework.
    - I have a dog, and I have (*er, had*) homework.

- If the presupposition (I have a dog) is relatively unobjectionable, it is **accommodated**, or taken to be true as well.

Accommodation: Denied

- She cried before she finished her thesis.
  - And gave up (she never did finish).
  - But she persevered (indeed, she finished).
- She died before she finished her thesis.
  - And so the thesis never got done.
  - But with the help of John Edward, she finished it anyway.

  - *Clarification:*
    John Edward →   John Edwards →

Implicatures

- There is a weaker relation that sometimes holds between a proposition *p* and a related proposition *q* as well. An *implicature*.
  - Pat used to smoke. (Pat does not now smoke.)
  - And in fact, Pat still does / But now, Pat no longer does.
- In general, an implicated proposition can be *defeated* or *reinforced*, whereas an implied/entailed proposition cannot.
  - Fido is a dog. (Fido is an animal)
  - #But, Fido is not an animal / #And in fact, Fido is an animal.
- An implicature does not follow *logically*, but rather seems to follow "usually."

Implicatures

- Why does *Pat used to smoke* implicate *Pat no longer smokes*? It isn't an entailment or presupposition—it need not hold logically, rather it seems to "usually" hold.

- It depends on what we're talking about, really.
  - I remember back in the old days. Remember Pat? I wonder what happened to Pat...
  - You know what I just heard about Pat? You won't believe this, knowing him now...

Implicatures

- The answer seems to be that we consider *why* someone would say *Pat used to smoke*.
  - We assume (among other things) that the speaker is saying the most informative (strongest) statement s/he can, while still saying something that is true (as far as s/he knows).
  - If Pat smokes now, then (probably) Pat used to smoke too, (at some point). So, saying *Pat smokes now and Pat used to smoke too* is effectively the same as just saying *Pat smokes now*. On the other hand, saying *Pat used to smoke* doesn't say whether Pat smokes now—it is a *weaker* statement.
  - If the speaker knows that Pat smokes now, s/he would have said *Pat smokes*. The fact that s/he didn't suggests that s/he would not be speaking truthfully if she said *Pat smokes*. So, Pat must not smoke now. (Cf. Reminiscing about the past, where now is not at issue.)

Conversational implicature

- Paul Grice: Inferences can be predicted by adopting a *cooperative principle*.
- The idea is that we can draw conclusions based on what is said in addition to making the assumption that the speaker is participating *cooperatively*.
  - How is Charles getting on in his job?
  - Oh quite well, I think. He likes his colleagues, and he hasn't been to prison yet.

- Grice identified several aspects of this cooperation, which he called *maxims*.

Gricean maxims

- Quality: Be truthful.
  - Do not say what you believe is false.
  - Do not say that for which you lack adequate evidence.
- Quantity: Be informative.
  - Make your contribution as informative as required.
  - Do not make your contribution more informative than required.
- Relation: Be relevant.
  - Make your contribution relevant.
- Manner: Be perspicuous.
  - Avoid ambiguity, obscurity.
  - Be brief, orderly

Deriving implicatures

- Following the maxims:
  - Pat: Is it raining?
  - Chris: It might be.
  - Pat's conclusion: Chris doesn't know.
    - Relevance: Make your contribution relevant.
    - Quantity: Be informative.
    - Quality: Be truthful.
- It would be relevant to discuss whether it is raining, and it would be informative to indicate truthfully whether it is or isn't. But Chris didn't. Conclusion: Chris can't, without violating Quality.

Deriving implicatures

- The dinner was adequate.
  - Conclude: The dinner was not great.
    - Quantity: Make your contribution as informative as required.
    - Quality: Be truthful.
    - Great dinners are adequate, not vice-versa. It is less informative to say the dinner was adequate than it would have been to say it was great. Quantity would have promoted saying it was great over saying it was adequate, but Quality would keep you from doing so if saying so would require saying something false.
- Tracy has two children.
  - Conclude: Tracy does not have more than two children.
    - "Scalar implicature"

Deriving implicatures

- **Flouting the** maxims.
  - You're a fine friend.
  - —I might win the lottery.
    —Yeah, and pigs might fly.
  - —Want to go for drinks?
    —What a nice pigeon!
  - —So, are we going to see a movie?
    —Where are we?
  - Mr. Smith is generally punctual.
  - —Did you get my homework?
    —I got a couple of pages with words on them.

Reinforceability and defeasibility

- Implicatures are generally defeasible and reinforceable.
  - The dinner was adequate.
    - In fact, the dinner was great.
    - But it was not great.
  - —Is it raining? —It might be.
    - I know but I'm not telling you.
    - I have no idea.
  - —I need to buy gas. —There's a station around the corner.
    - But it closed two hours ago and doesn't sell gas.
    - It sells gas and is open.

Reinforceability and defeasibility

- Presuppositions, like entailments, are generally *not* defeasible or reinforceable.
  - That Pat has stopped smoking is well known. (Pat used to smoke.)
  - #In fact, Pat's never smoked. #Moreover, Pat used to smoke.
  - That Pat hasn't stopped smoking is well known.

  - That Pat ate the sandwich is well known. (There is a unique sandwich.)
  - #In fact, there never was a sandwich. #Moreover, there is a unique sandwich.
 - That Pat didn't eat the sandwich is well known.

Modeling conversation: Knowledge

- We can use this kind of diagram to characterize what we know, our "knowledge state."
- If we know the following two things (to be true)…
  - Pat is not hungry.
  - Pat is sleepy.
- …then we have narrowed down the possible worlds in which the actual world must lie.
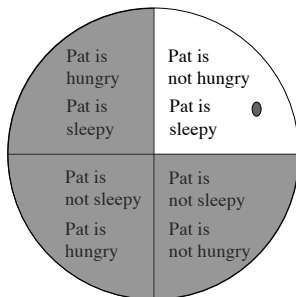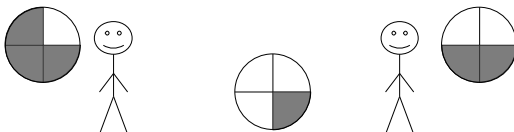

Assertion

- We can think of *assertion* of a proposition as being the communication of an aspect of the speaker's knowledge state to the hearer.
  - Here, both believe that Pat is sleepy, and the speaker is asserting that Pat is not hungry (about which the hearer has no prior belief).


Pat is not hungry.
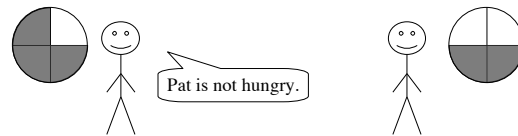
Modeling conversation

- A more sophisticated model of conversation (generally attributed to Stalnaker) involves an additional knowledge state: *common ground*.
- The common ground is a set of shared assumptions between speakers (we might think of this as the presupposed information).
  - CG: Pat is either hungry or sleepy (or both). A believes Pat is sleepy but not hungry. B believes Pat is sleepy.
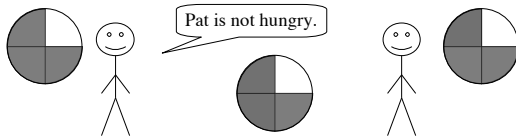

Modeling conversation

- In this game, the goal is to build up the common ground.

  - A asserts *Pat is not hungry*.
  - B accepts this.
 - *Pat is not hungry* is added to the common ground.

Pat is not hungry.
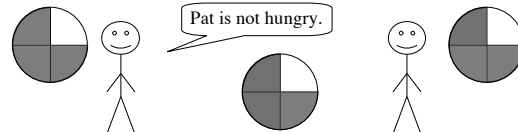
Modeling conversation

- So, the way the game works is that A asserts *p* (which might presuppose *q*).
- B adds any presupposition *q* to the CG, then evaluates *p*, and accepts it if consistent with B's beliefs, or rejects it if not.
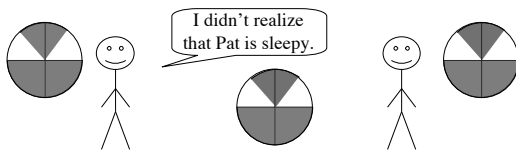
Pat is not hungry.

Modeling conversation

- In this game, the goal is to build up the common ground.
    - A asserts *Pat is not hungry*.
    - This is counter to B's beliefs—B challenges this.
    - *Pat is not hungry* is not added to the common ground.

Pat is not hungry.
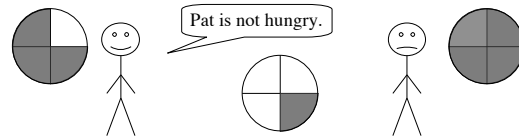
Modeling conversation

- Presuppositions are acceptable if they are compatible with the common ground.
    - A asserts *I didn't realize that Pat is sleepy*.
        - Presupposes: *Pat is sleepy*. This is compatible with the CG.
    - B accepts this.
    - *A did not realize that Pat is sleepy* is added to the common ground.

I didn't realize that Pat is sleepy.

Accommodation

- Something that presupposes something not in the common ground can be *added* to the common ground (*accommodation*).
    - B believes that *Pat is sleepy*. The CG has that *Pat is sleepy*.
    - A asserts *I didn't realize that Pat is not hungry*.
        - Presupposes: *Pat is not hungry*. This is not in the CG, but isn't contrary to it.
    - B adds the presupposition to the CG, and accepts it.

I didn't realize that Pat is not hungry.
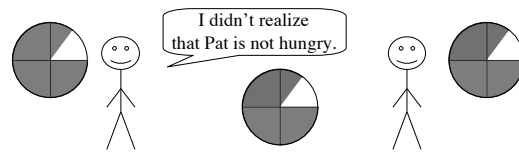
Presupposition failure

- Something that presupposes something contrary to the common ground results in presupposition failure.
    - B believes that *Pat is not sleepy*. The CG has that *Pat is sleepy*.
    - A asserts *I didn't realize that Pat is not sleepy*.
        - Presupposes: *Pat is not sleepy*. This is inconsistent with the CG.
    - B adds the presupposition to the CG—resulting in contradiction. B cannot either accept or reject.

I didn't realize that Pat is not sleepy.

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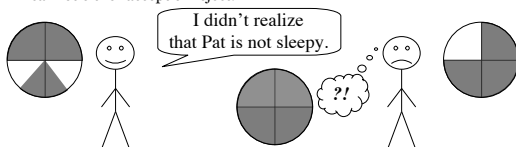
Common ground?

- How could presupposition failure arise?
- Perhaps A is simply not playing the game, but more likely, what A thinks the CG is differs from what B thinks the CG is.
- Presupposition failure occurs when the interlocutors' views of the CG get out of sync.

I didn't realize that Pat is not sleepy.

?!