- **Sentence meaning relations**
- **Pragmatics: Presupposition and conversational maxims**

Background reading:

- *CL* Ch 6, §1.2, "Semantic relations ... sentences"
- *CL* Ch 6, §4.1, especially "Presupposition"
- *CL* Ch 6, §4.4, "Grice's conversational maxims"

- When we know the **meaning** of a (declarative) sentence, we know the **circumstances** under which the sentence would be **true** or **false** — known as the **truth conditions** of the sentence

    - **Intension** of a sentence =
    - **Extension** of a sentence in a given situation =

1. Review: Sentence meaning and entailment

- When we know the **meaning** of a (declarative) sentence, we know the **circumstances** under which the sentence would be **true** or **false** — known as the **truth conditions** of the sentence

    - **Intension** of a sentence = its **truth conditions**

    - **Extension** of a sentence in a given situation = its **truth value** (*true* or *false*) in that situation

1. Review: Sentence meaning and entailment

- Once we have a way to think about sentence meaning, we can examine ways in which the meaning of one sentence **relates** to that of another
    - **entailment**
    - **paraphrase**
    - **contradiction**

Entailment — A meaning relation between sentences

- From *CL*, p 222: "When the truth of one sentence guarantees the truth of another sentence, we say that there is a relation of **entailment**."

  - What does "guarantees the truth" mean here?
  - → Consider: We are talking about **truth conditions**

- A more explicit definition of **entailment**:
  Sentence A entails sentence B if <u>in all situations</u> where sentence A is true, sentence B is also true

  - **Evidence** that entailment does *not* hold in some case → A situation where A is true but <u>B is not</u>

2. Paraphrase

Paraphrase — Another sentence meaning relation

- From *CL*, p 221: "Two sentences that have essentially the same meaning are said to be **paraphrases** of each other."

- Can we give a more explicit definition of **paraphrase**, by defining it in terms of <u>entailment</u>?

2. Paraphrase

- A more explicit definition of **paraphrase**:
Sentences A and B are paraphrases of one another
if A entails B and B entails A. (The **truth conditions**
of A and B are the same!)

    - What kind of **evidence** can we provide to show
    that two sentences are *not* paraphrases?

2. Paraphrase

- A more explicit definition of **paraphrase**: Sentences A and B are paraphrases of one another if <u>A entails B and B entails A</u>. (The **truth conditions** of A and B are the same!)

  - What kind of **evidence** can we provide to show that two sentences are *not* paraphrases?

    → Show that entailment fails in at least one direction

    → Concretely: Find a situation in which one of A or B is true and the other is not

2. Paraphrase

- A more explicit definition of **paraphrase**:
  Sentences A and B are paraphrases of one another
  if <u>A entails B and B entails A</u>.

- Try it: Are sentences (3) and (4) paraphrases?

  (3) Lucy painted this picture.
  (4) This picture was painted by Lucy.

2. Paraphrase

- A more explicit definition of **paraphrase**:
  Sentences A and B are paraphrases of one another
  if <u>A entails B and B entails A</u>.

- Try it: Are sentences (3) and (4) paraphrases? | Yes

  (3) Lucy painted this picture.
  (4) This picture was painted by Lucy.

  - In all situations where (3) is true, (4) is also true
  - In all situations where (4) is true, (3) is also true

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2. Paraphrase

- A more explicit definition of **paraphrase**:
  Sentences A and B are paraphrases of one another
  if <u>A entails B and B entails A</u>.

- Try it: Are (1) and (2) (from Monday) paraphrases?

  (1) Linus ate a sugar-covered doughnut.
  (2) Linus ate something sweet.

2. Paraphrase

- A more explicit definition of **paraphrase**:
  Sentences A and B are paraphrases of one another
  if <u>A entails B and B entails A</u>.

- Try it: Are (1) and (2) (from Monday) paraphrases? | No

  (1) Linus ate a sugar-covered doughnut.
  (2) Linus ate something sweet.

  - We showed on Monday that (2) does not entail (1), so these sentences are not paraphrases of each other

3. Contradiction

Contradiction — Another sentence meaning relation

- From *CL*, pp 222–3: "Sometimes, it turns out that if one sentence is true, then another sentence must be false. […] When two sentences cannot both be true, we say that there is a **contradiction**."

- Can we give a more explicit definition for **contradiction**, inspired by <u>entailment</u>?

3. Contradiction

- A more explicit definition of **contradiction**: Sentence A and B are contradictory if <u>there is no situation</u> in which both A and B can be true.

    - What kind of evidence can we provide to show that two sentences are *not* contradictory?

3. Contradiction

- A more explicit definition of **contradiction**: Sentence A and B are contradictory if there is no situation in which both A and B can be true.

    - What kind of evidence can we provide to show that two sentences are *not* contradictory?
        → Find a situation in which A and B are both true

3. Contradiction

- A more explicit definition of **contradiction**: Sentence A and B are contradictory if <u>there is no situation</u> in which both A and B can be true.

- Are sentences (5) and (6) contradictory?

  (5) The present king of France is bald.
  (6) France is a republic.

3. Contradiction

- A more explicit definition of **contradiction**: Sentence A and B are contradictory if <u>there is no situation</u> in which both A and B can be true.

- Are sentences (5) and (6) contradictory? | Yes

  (5) The present king of France is bald.
  (6) France is a republic.

  - Since a republic is a nation with no king, (5) and (6) can never be true in the same situation

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4. Some real-world applications

- What is all this stuff good for? When might we care whether one sentence entails another, or one sentence contradicts another?

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- What is all this stuff good for? When might we care whether one sentence entails another, or one sentence contradicts another?

- How about situations such as...

    - legislation, contracts

    - testimony in court

    - claims of false advertising

    - ...

4. Some real-world applications

- One popular advertising technique is the use of language that tries to sound like it's making a stronger claim than it actually is

- It can be interesting to look carefully at the language of an advertisement and try to determine what claims are actually **entailed**

4. Some real-world applications

- Example:

  Everything in the store is up to 75% off!

  - What might the ad like you to **conclude**?
  - Is this conclusion **entailed** by the language in the ad? Can you prove whether it is?

5. Pragmatics: Language in context

- How is it possible for people to use language in ways that communicate *more* than what is *said*?

- This is part of the linguistic subfield of **pragmatics**, the study of **language meaning in context**

- Two ways that people can use language to communicate more than what is literally stated or asserted are:
  - **Presupposition** | A special kind of entailment
  - **The Cooperative Principle in conversation**

6. Presupposition

- A special type of entailment is **presupposition**

  - As defined in *CL* (p 246): a presupposition is "the assumption or belief implied by the use of a particular word or structure"

- Here is a more explicit test for identifying **presupposition**:

  - Sentence A **presupposes** sentence B if <u>A entails B and the **negation** of A also entails B</u>

  - Careful: when "negating A," use a negation that doesn't put any special emphasis on *word choice*

6. Presupposition

- In this sentence pair, does the first sentence presuppose the second?

    (1)   Maria knows that Linda likes basketball.

    (2)   Linda likes basketball.

6. Presupposition

- In this sentence pair, does the first sentence presuppose the second? | yes

  (1)   Maria knows that Linda likes basketball.

  (2)   Linda likes basketball.

  - (1) entails (2)

  - The **negation** of (1), *Maria <u>doesn't know</u> that Linda likes basketball*, also entails (2)

- Reminder: We want the 'ordinary' negation of a sentence like (1), not one that puts special emphasis on the word *know*

  - If we emphasize *know*, we are **objecting to the word choice**, which is different from **negating the sentence**

6. Presupposition

- In this sentence pair, does the first sentence presuppose the second?

    (3)   Oscar assumes that Grover likes basketball.

    (4)   Grover likes basketball.

6. Presupposition

- In this sentence pair, does the first sentence presuppose the second? | no

    (3)   Oscar assumes that Grover likes basketball.

    (4)   Grover likes basketball.

    - (3) doesn't even entail (4) in the first place; Oscar's assumption might be incorrect!

6. Presupposition

- In these sentence pairs, does the first sentence presuppose the second?

  (5) *Linda broke the vase.*

  (6) *There was a vase (in the relevant context).*

  (7) *Linda broke a vase.*

  (8) *There was a vase (in the relevant context).*

6. Presupposition

- In these sentence pairs, does the first sentence presuppose the second?

  (5)   *Linda broke the vase.*

  (6)   *There was a vase (in the relevant context).* | yes

  - *Linda broke the vase* and *Linda didn't break the vase* both entail *There was a vase*

  (7)   *Linda broke a vase.*

  (8)   *There was a vase (in the relevant context).* | no

  - *Linda broke a vase* entails *There was a vase,* but *Linda didn't break a vase* <u>does not</u>

- Presuppositions can be used to **introduce information into a conversation** without actually <u>asserting</u> that information

  A: Hi! How are you? I haven't seen you in a while.

  B: Things are great. I went to <u>the game</u> yesterday.

- Suppose person A hadn't known that there was a game yesterday. A now has a choice:

  - Accept "there was a game yesterday" as part of the conversation's common background knowledge
  - Challenge or question B's presupposition, such as by asking for more information

7. Presuppositions and indirect communication

- Why are so-called "loaded questions" not allowed in court?

  Lawyer: *Have you stopped embezzling money from your company?*

  Defendant: *!?!*

- Suppose the defendant is innocent, and never embezzled any money from the company

  - Are they able to assert their innocence by answering this question yes or no?
  - Why or why not?

7. Presuppositions and indirect communication

- Thinking about presuppositions can make your **writing** more effective

  - Check your sentences to see if they are introducing **presuppositions** into the discussion

  - In some cases, presuppositions are harmless

  - But other times, dragging too much in as "background knowledge" this way will make your audience feel confused or want to challenge you

8. The Cooperative Principle

- How is it possible for people to use language in ways that communicate *more* than what is *said*?

- This is part of the linguistic subfield of **pragmatics**, the study of **language meaning in context**

- Two ways that people can use language to communicate more than what is literally stated or asserted are:

    - **Presupposition**
    - **The Cooperative Principle in conversation**

8. The Cooperative Principle

- Consider the following conversation:

  Editor: *I'm considering hiring your student, X, as a writer. What can you tell me about X?*

  Writing teacher: *X has good handwriting, and always comes to class on time.*

- Did the teacher communicate anything useful?

  - What was it?
  - Was that information communicated **directly**, through word and/or sentence semantics?
  - How did communication happen?

8. The Cooperative Principle

- Consider the following conversation:

    Editor: *I'm considering hiring your student, X, as a writer. What can you tell me about X?*

    Writing teacher: *X has good handwriting, and always comes to class on time.*

- Did the teacher communicate anything useful? | Yes!

    - What was it? | X is not a good choice for a writer

    - Was that information communicated **directly**, through word and/or sentence semantics? | No!

    - How did communication happen? → *up next*

8. The Cooperative Principle

- A very influential approach to the question of how people communicate things in this way:
The **Cooperative Principle** along with the four **conversational maxims** (H. Paul Grice, 1967/1975)

- Grice proposed that human conversations operate according to the **Cooperative Principle**:

  "Make your contribution appropriate to the conversation." (*CL*, p 249)

8. The Cooperative Principle

- Of course, it is not the case that everyone really is cooperative all the time

  But the idea is that people tend to **interpret what they hear** (or read) based on the assumption that the other speaker **meant** to be cooperative

- Even more interesting:
  Sometimes, people act in a way that is **obviously** not cooperative, in order to **communicate** something <u>by</u> doing that

  → This is one type of **indirect communication**

8. The Cooperative Principle

- One basic way of conforming to the Cooperative Principle is to follow the four **conversational maxims** (*CL*, p 250):

Maxim of Relevance — Make your contribution relevant.

Maxim of Quality — Make your contribution true. (Do not say things that are known to be false, or for which you lack adequate evidence.)

Maxim of Quantity — Do not make your contribution either more or less informative than is required.

Maxim of Manner — Avoid ambiguity and obscurity; be brief and orderly. ("Eschew obfuscation.")

9. Violating conversational maxims

- What happens if you violate a maxim, and you **hide** that fact from your conversation partner?

  A: *Did you eat the last cookie?*

  B: *No.* [when B did in fact eat the last cookie]

  - Violation of the Maxim of Quality (untrue)

  → Deception! You're just lying.

9. Violating conversational maxims

- What happens if you violate a maxim, but you make that fact completely **obvious**?
(this is often called ***flouting* a maxim**)

  → The assumption that you are following the Cooperative Principle <u>overall</u> still holds!

  - This is a means of indirect communication

9. Violating conversational maxims

- Consider our recommendation example again:

  Editor: *I'm considering hiring your student, X, as a writer. What can you tell me about X?*
  Writing teacher: *X has good handwriting, and always comes to class on time.*

- Which maxim(s) is/are violated, and what does this violation actually communicate?

9. Violating conversational maxims

Editor: *I'm considering hiring your student, X, as a writer. What can you tell me about X?*

Writing teacher: *X has good handwriting, and always comes to class on time.*

- The teacher is violating the maxims of **Quantity** (not giving enough information) and **Relevance** (giving irrelevant information)

    - This strategy generally communicates:
    "I have nothing good to say about X as a writer"; that is, "Anything *relevant* I could say would not be in X's favor"

9. Violating conversational maxims

- **Blatantly violating** (flouting) a conversational maxim often indicates **politeness** or **indirectness**

  - indirect requests
  - avoidance of directly stating unpleasant information

- **Sarcasm** often involves blatantly violating a maxim — often Quality (saying the opposite of what you mean)

9. Violating conversational maxims

- Often, more than one maxim is violated at a time

    - Practice considering which maxims are violated in a conversation, and making an argument for your choice
    - See also the optional videos on the "Online resources" course web page for more examples

10. Advertising, revisited

- Recall this example from earlier:

  Everything in the store is up to 75% off!

  → Desired conclusion: "**Everything/most things are actually** 75% off"

  - We saw before that this conclusion is not **entailed** by the language in the ad

- What **maxim(s) of conversation** would encourage the consumer to draw these conclusions?