LING 001
Introduction to Linguistics

Lecture 22

Semantics & Pragmatics II

04/22/2020

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Announcements

- Exam 3 grading nearly complete
- Exam 4 extension — accepted without penalty through the May 12.
- Opting out of Exam 4 — submit a blank document and leave a comment that you are opting out.
- Q&A session next week: Wednesday only

Meaning in Linguistics

- Linguistics connects with many disciplines
  - In **semantics** it meets **philosophy…**
  - **and mathematics**

- **Linguists' main concern in semantics**:
  - What **knowledge** do speakers have about the meaning of morphemes and words (and other linguistic entities)?
    - In other words: How do semantic units work?
  - How do the **meanings of complex** expressions relate to the meanings of their parts?
    - In other words: How do semantic units combine?

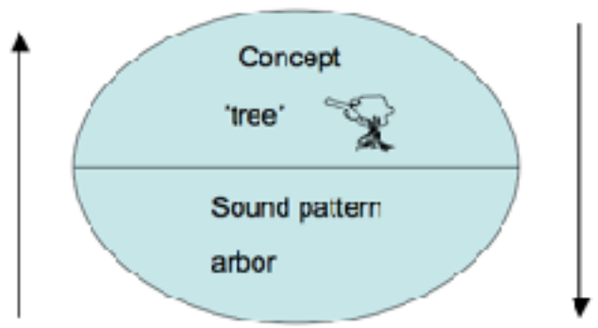
Arbitrariness

Cock-a-doodle-doo!

“tree” in ASL

/tri/
/ˈkɔidɛn/
/ˈarbor/
/baʊm/
/ˈdʲerʲɪvɐ/

Ferdinand de Saussure



A Saussurean sign

- Meaning is a connection between **form** (a pattern of sounds or gestures) and **referent** (what we talk about – a mental concept of something)
- The relationship can vary…
- A word/sign whose form resembles its referent is **iconic**
  - Form **motivated** by meaning
- A word/sign whose form does not resemble its referent is **symbolic**
  - **Arbitrary** form
- Some languages have a lot of iconicity
- But all form-meaning relationships are **in principle arbitrary**
  - Iconicity is never obligatory
  - Iconic forms are themselves conventional

Basic Knowledge of Words

- **Knowing a word** like **cookie** crucially involves being able to pick out cookies among other things
- We are able to **split the world up** into cookies and non-cookies

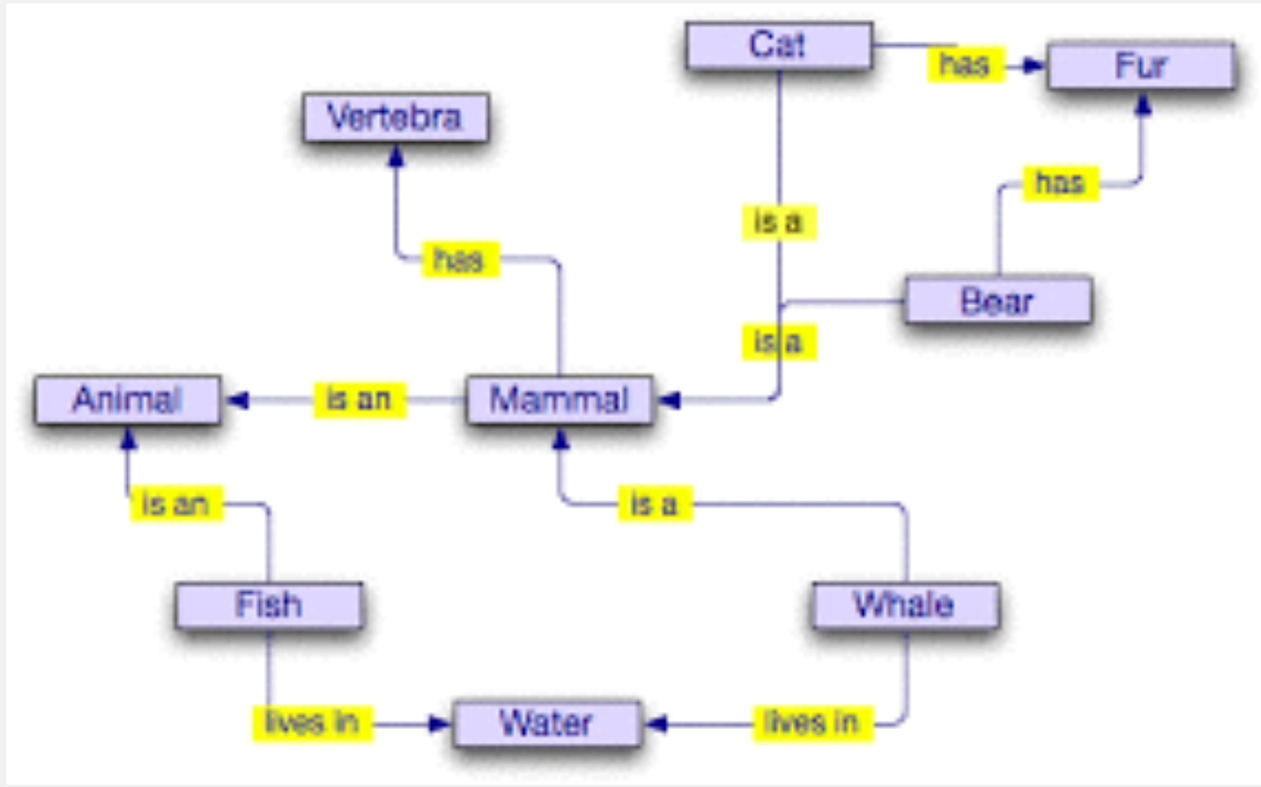






Representing Meanings as Sets

- The **meaning** of **cookie**: the set of things that we group under that notion
- **Sets** are abstract collections of things
- **Set Theory** allows us to capture many aspect of semantic knowledge
- **Example**: Knowledge about **how meanings of words** are related to one another



Synonyms

- For certain **pairs of words**, we can say that they have the same meaning.
  - **sofa / couch**
  - **bucket / pail**
  - **salt / sodium chloride**
  - **woodchuck / groundhog**
- Note that these are often not fully interchangeable:
  - **kick the bucket** vs. **kick the pail**
  - **Woodchuck Day!**
  - **Please pass the sodium chloride**
- **BUT**: they seem to pick out the same set of objects!

Hyponyms

- For other **pairs of words**: one only applies to some of the things that the other applies to
- **Hyponymy**: chocolate chip cookie vs. cookie







More on Hyponymy

- Further examples:
  - **cat** vs. **animal**
  - **mansion** vs. **house**
  - **novel** vs. **book**

- **Set theory** captures this relation through the notion of a subset:

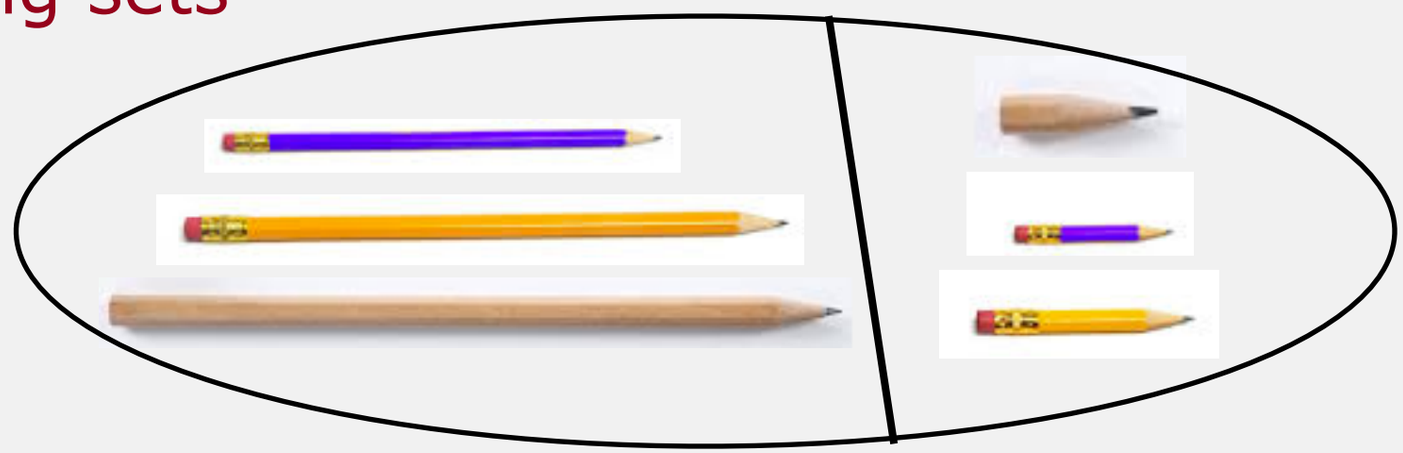
  A is a **subset** of **B** if all the things in **A** also are in **B**

- **B** would then be a **superset** with respect to **A**

Antonyms

- We also can identify words that are **opposites** of one another
  - Relational opposites: **employer vs. employee**
  - Complementary: **married vs. unmarried**
  - Gradable: **long vs. short**

- **Set-theoretically**, these all involve non-overlapping sets



Ambiguity

- One word - multiple meanings -> **Ambiguity**
- **Examples**:
  - **bank**
  - **draft**
  - **table**
- What kind of ambiguity is this?
  - ~~Structural?~~
  - Lexical?

Table 2			
Title			
Header			
Subhead	Column Head	Column Head	Column Head
Row 1	123	234	17.6
Row 2	456	567	31.1
Row 3	789	891	51.3
Row 4	1368	1692	

Other distinctions

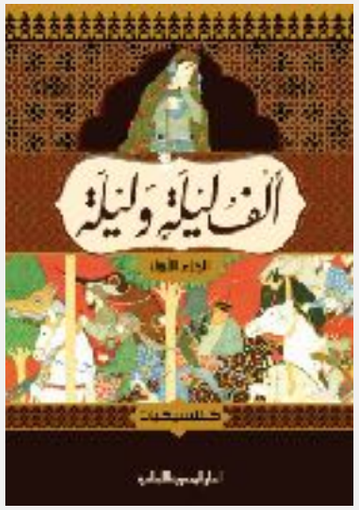
- Traditional distinction between **two types of lexical ambiguity**:

- **Homophony**:
  Two words with same sound

  Examples: **bank, lead/led, pool**

- **Polysemy**:
  One word with multiple related meanings

  Examples: **paper, pool, school, column**



Polysemy vs. homophony

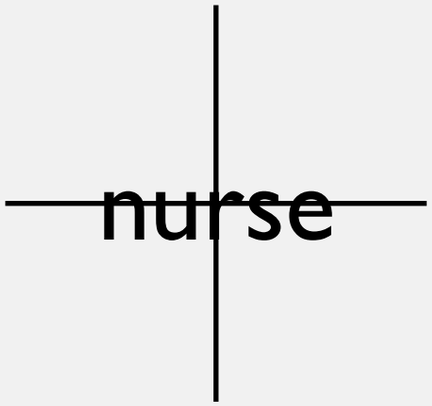
- Sometimes presented as if this is all a matter of etymology
  - (tree) **bark** and (dog's) **bark** are unrelated -> homophony not polysemy
  - cows' **milk** and "**milk** them for what they're worth" are related -> polysemy
- But this is problematic!
  - Are **story** and **stor(e)y** etymologically related?
  - **Range** (of mountains) and (cooking) **range**?
- This is not the point. What matters is how the words are treated mentally by speakers.

Homophony vs. Polysemy

- Dictionary analogy:
  - **One entry** with multiple descriptions of its meaning
  - Several distinct entries
- Do speakers have mental dictionaries that maintain this kind of distinction?
- How can we tell?

Priming experiments

doctor


nurse

Background

- **Semantic Priming**: (**doctor** / **nurse**)
  Words are **recognized more quickly**
  if preceded by a word related in meaning

- **Phonological Inhibition**:
  Words are **recognized more slowly**
  if preceded by a phonologically similar word

Predictions

- **Homonymy** (river **bank** / savings **bank**)
  Standard Phonological Inhibition expected (no semantic priming advantage) -> **Slower processing**

- **Polysemy** (lined **paper** / term **paper**)

  - If **Polysemy** involves just one word:

    - **No** phonological inhibition

      - Standard repetition priming (- RT)
        Faster processing!

  - If Polysemy is like Homonymy:

    - Semantic **priming** (- RT)

    - Phonological **Inhibition** (+ RT)

- Evidence from experiments supports a distinction between homonymy and polysemy in the brain.

Meanings of Sentences

- What about the **meanings of sentences**?
- **Rephrasing the question**:
  What knowledge do speakers display when they know the meaning of a sentence?
- **Answer**: They can identify circumstances that match the description provided by a sentence
- This is **very similar** to our characterization of knowing the meaning of **cookie** above

Truth-Conditional Semantics

- Another way of characterizing our capacity to match descriptions as expressed by sentences and circumstances:

  Knowing under which conditions a sentence is true

- Claim: **To know the meaning of a sentence is to know its truth conditions.**

- Again, this is a view of **meaning** as a relation between linguistic expressions and circumstances

Basic Knowledge of Words

- **Knowing a word** like **cookie** crucially involves being able to pick out cookies amongst other things
- We are able to **split the world up** into cookies and non-cookies







Sentence Meanings Illustrated

- **Knowing the meaning of**

  Cookie monster is eating a cookie

  allows us to identify corresponding circumstances in the world:

Paraphrase

- Sentences A and B are **synonymous**, or **paraphrase** each other, if they are true in exactly the same circumstances.

Cookie monster is eating a cookie vs.
A cookie is being eaten by cookie monster.

Entailment

- Sentence A **entails** sentence B if whenever A is true, B is true.

  Cookie Monster is eating a chocolate chip cookie entails
  Cookie Monster is eating a cookie







Contradictory Sentences

- Sentences A and B are **contradictory** if whenever A is true, B is false, and vice versa.

Cookie monster is eating a cookie vs.
Cookie monster's mouth is empty.

Accounting for Logical Words

- A **truth-conditional semantics** also accounts for logical words like **or**, **and**, **not**, etc..
- In **set-theoretic terms**:
  - **A or B**: set theoretic **union**
    (all the elements that are an element of A or B)
  - **A and B**: set theoretic **intersection**
    (elements that are in both sets A and B)
  - **Not A**: the **complement** of A
    (all the elements that are not in A)

Illustration of Or

- The **union** analysis of or holds both for nouns and sentences
- **"**[I want] **a cookie or a piece of cake"**



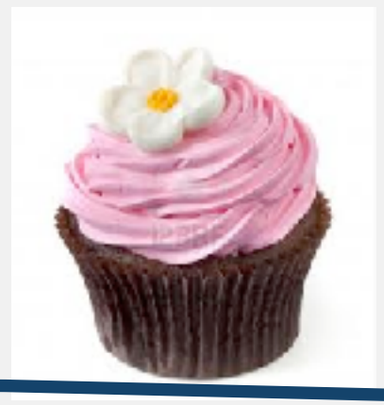









Illustration of Sentential Or

- We also can deal with **or** on the level of sentences:
- “Cookie monster is eating a cookie or he is eating leaves”

Or vs and

- A: “I want to marry someone who’s good looking or rich”
- B: “I want to marry someone who’s good looking and rich”

Which denotes a larger set of people?

Compositionality

- Morphosyntax **is generative** and allows us infinite sentences, so we also need a general system for computing meanings
- The notion of **compositionality** plays a key role here:

> **The meaning of a sentence is determined based on**
> **a) the meanings of its parts and**
> **b) the way in which they are put together (i.e., morphology and syntax)**

- But how can truth conditions work for different kinds of sentence?

Simple Cases

- **Predicational constructions** essentially boil down to claims about set-membership

  John is a teacher

  is true in a given set of circumstances precisely if John is an element of the **teacher** set

- **Intransitive verbs** also map individuals to truth values relative to specific circumstances:

  John is dancing

  is **true** precisely in those circumstances where there is dancing activity that John is participating in

Beyond Truth Conditions?

- **Truth-conditional semantics** sees information at the core of meaning in natural language
- But isn’t there more to human communication than exchanging information?
  - Giving **commands**
  - Asking **questions**
  - Expressing **emotion**
  - Maintaining **relations**
  - Expressing **identity** and **relations** with others
- The common-sense understanding of meaning goes beyond truth conditions

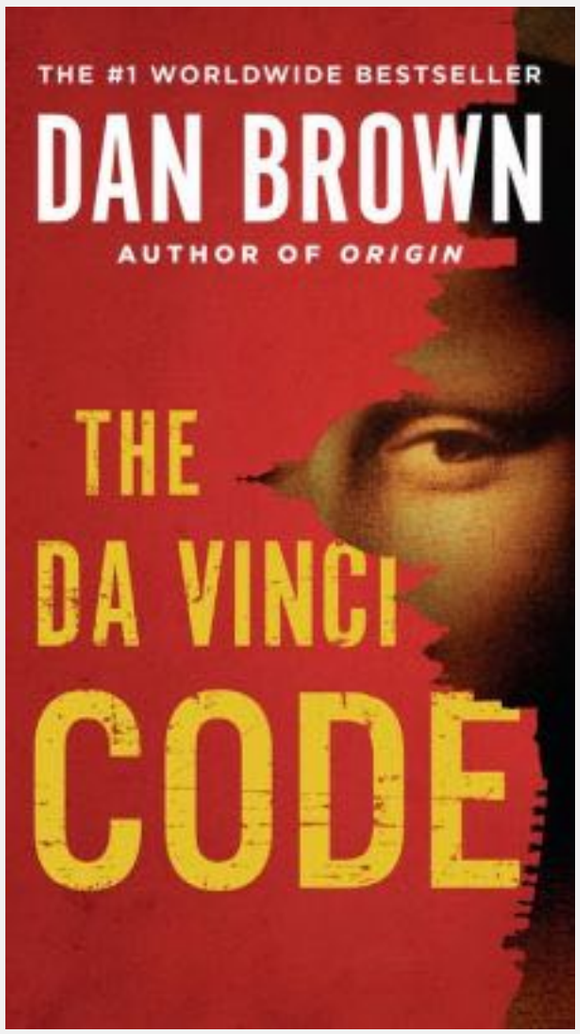
Beyond Truth Conditions!

- Truth conditions can play a big role in non-statements too:
  - **Questions**: inquiry whether something is true
  - **Imperatives / Commands**:
    instructions for making something true
- But we still need to go beyond the literal meaning of sentences…
  - For this we need **pragmatics**!

Semantics vs. Pragmatics

- **Semantics**
  - Sentence meanings in terms of truth conditions
  - Literal Meaning
  - Derived compositionally from meaning of parts
- **Pragmatics**
  - Speaker meanings: what is meant to come across
  - Non-literal meaning
  - Supplemented by context and assumptions about nature of interaction and participants

Illustration



"I've read *The Da Vinci Code*"

The truth-conditional meaning
of this seems pretty clear

Illustrations

- A: **Have you read Foucault's Pendulum? It's an intellectual detective novel by Umberto Eco.**

  B: **I've read The Da Vinci Code.**

- A: **Why don't you like Dan Brown as a writer?**

  B: **I've read The Da Vinci Code.**

- A: **It's getting a bit hot in here.**

  B: **There's a window over there.**

- A: **Is there a trash can in this room?**

  B: **There's a window over there.**

- A: **What do you find strange about people?**

  B: **I've noticed people don't always want to know the answer to questions they ask.**

- A: **Have you ever cheated on me?**

  B: **I've noticed people don't always want to know the answer to questions they ask.**

What's behind these Inferences?

- **Paul Grice:**
  A general system of reasoning based on assumptions about rational speakers
- We bring lots of **assumptions** to our conversations
- We assume that
  - there's some purpose behind our interaction
  - interlocutors generally try to further that cause
- **Communication** as **mind reading**.
  A hearer tries to figure out what the speaker of an utterance intended to convey.
- **Implicatures** are inferences about
  what the speaker intended to communicate.

Theory of Implicatures

- Grice formulated a **theory** to account for what inferences actually arise in normal conversation
- **Main idea**:
  Important aspects of non-literal meaning can be calculated based on the assumption that discourse participants act as **rational agents**.
- **Foundation: The Cooperative Principle**
  Make your 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.

Gricean Maxims

- Spelling out the Cooperative Principle in more detail, Grice proposed a set of **maxims** that people generally adhere to
- **Note**: These are **not** prescriptive rules he thought we *should* follow!
- **Rather**: An attempt to capture the underlying motivation of people's actual behavior
- **Four Maxims**:
  - Quality
  - Quantity
  - Relevance
  - Manner

Quality

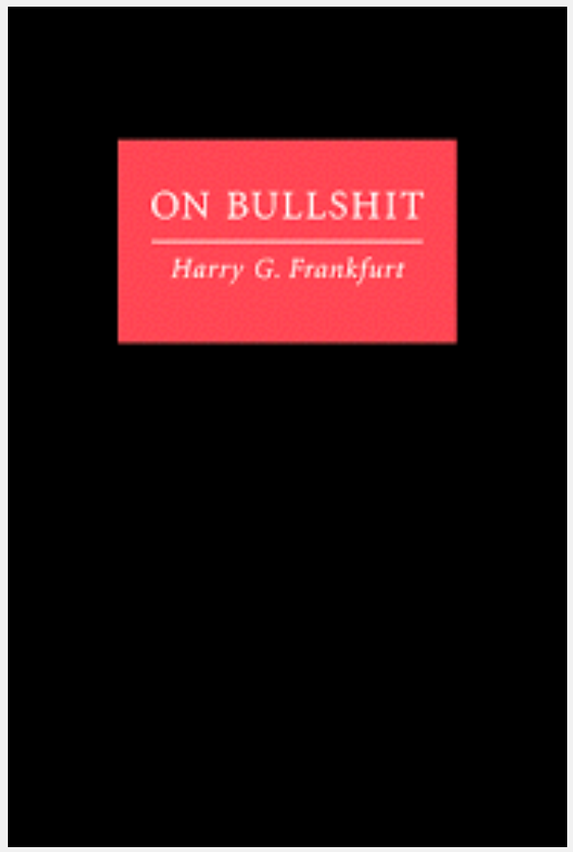
a. Contribute only what you know to be true.
   Do not say false things.

b. Do not say things for which you lack evidence.

- **Normal conversation** wouldn't work if we didn't generally expect each other to say things they actually think are true, based on reasonable evidence.

- There are **exceptions**:

- But note that even when bullshitting the Cooperative Principle is followed!



Quantity

a. Make your contribution
   as informative as is required.

b. Do not say more than is required

- Quantity here refers to quantity of information
- If you have information that serves the purpose of conversation, don’t withhold it!
- Be measured —
  don’t include unnecessary information

Relation / Relevance

- Make your contribution relevant
- Address the topic / point that's key to the current purpose of conversation
- Relate what you say to other things going on in the conversation

Manner

a. Avoid obscurity

b. Avoid ambiguity

c. Be brief

d. Be orderly

- **Gist**:
  - Make it easy on your hearer to understand your point
  - Don’t say things in convoluted ways if you can put it simply

Gricean pragmatics in action

- A: **Who took all the cookies?**
- B: **John took some of the cookies**.

- What is the message you take away from my answer?
- How would you feel if you later found out that John ate them all, and that B knew that?
- But did B lie, literally?

The Logic behind Implicatures

- A: **Who took all the cookies?**
  B: **John took some of the cookies**.

- **Implicature**: B knows that John took some, but he doesn't think that John took all of them.

- **Why**?
  If B were cooperative and knew that John took all, then he should have said so!

More Examples

- A: **How did Harry fare in court the other day?**

  B: **Oh, he got a fine.**

- If A later found out that Harry in fact got a prison sentence of 10 years as well, he'd be surprised!

- B implicates that the fine was the only punishment Harry got in court

Properties of Implicatures

- How do we know whether any given piece of information is part of the truth conditions or merely pragmatically inferred as an implicature?
- Implicatures have a number of **hallmark properties** that distinguish them from literal meaning, including:
  - Cancellability
  - Reinforceability

Cancellability

- **John ate some of the cookies.**
  In fact I think he ate them all.
- You can retract what was said without contradiction
- Very **different from literal meaning**:

  John ate some of the cookies.
  ?? In fact I don’t think he ate any of them

Reinforceability

- **John ate some of the cookies. He didn’t eat them all, so there are some cookies left.**
- We can make implicatures **explicit** without sounding redundant.
- Again, this is in **contrast to literal meaning**:
- **John ate some of the cookies.**
  #So some of the cookies were eaten by John.

Flouting the Maxims

- In certain circumstances, we can use blatant violations of maxims strategically to get our point across indirectly.
- Even though **flouting** works by violating a maxim, it still crucially relies on the cooperative principle (and other maxims) being in place!

Flouting Quality

- A: **Your brother is really nice**.
  B: **And Philadelphia is cold in the summer**.
- Saying something **obviously false** communicates a comment on how you perceive the veracity of the original claim
- By saying something **obviously false**, we convey that we don’t believe A

Flouting Quantity

- A: **I wonder whether John will come to the party**
  B: **Either John will come or he won't come.**

- B's utterance is a tautology (necessarily true)

- How could that be used to communicate anything?

- If A assumes **B to be cooperative**,
  he will infer
  that B doesn't care or
  think that it doesn't matter whether John comes

Flouting Relevance

- A: **So how did the meeting go?**
  B: **The weather is really nice today**

- By saying **something entirely irrelevant**,
  B is indicating that he doesn't want to talk about this

- **Letter of Reference**:

  To Whom it May Concern:
  I highly recommend John Smith for your advertised position. His handwriting on homework was always extremely neat, and he wears the most interestingly patterned ties to class. Best regards…

- **[Note:** I didn't say anything bad!]

Flouting Manner

- A: **How was the play you saw last night?**

  B: **There were a bunch of people in old-fashioned costumes uttering sequences of words that closely matched the text of Romeo and Juliet…**

- **Again**: Nothing bad said here directly...
- But - **Implicature**:
  it was an awful production of the play

Non-Literal Meaning in the Real World

- **What is said vs. What is meant**
- The distinction between speaker meaning and sentence meaning matters for many real world situations

- **Illustrations**:
  - Legal Issues
  - Advertising

The Bronston Case

- **Perjury or Not**?

  Q: Do you have any bank accounts in Swiss banks, Mr. Bronston?
  A: No, sir.
  Q: Have you ever?
  A: The company had an account there for about six months, in Zurich**.**

- What is the **literal meaning** of Bronston's answer?

- What **non-literal meaning** does that answer convey?

The Bronston Case - Pragmatics

- **Non-literal meaning**:
  Bronston's answer conveys that
  he never had a Swiss bank account.

- **Why?**
  By Maxims of **Relevance** and **Quantity**,
  his answer to **Have you ever?**
  is an **implicit denial.**

- **Literal meaning**:
  Bronston simply didn't answer the question.
  (He simply stated that the company
  had an account there at some point)

- The prosecutor should have **demanded an answer** to the question asked!

Bronston Case - Facts

- Bronston **did** have a Swiss bank account in the past.
- The government **prosecuted** him for perjury and he was convicted.
- **US Supreme Court appeal:** unanimously overturned his conviction, thereby establishing the literal truth standard for **perjury**:
- **Literally true statements aren't perjury**, even if they imply falsehood.
- This is **different** from lying in ordinary language.

Implicatures in Advertising

- **Advertisers** thrive on using implicated meaning to achieve their means without being literally committed to the implicated claims
- Because it’s so natural for us to draw these conclusions, we can easily get deceived
- The line where such cases actually become deceptive is a hard one to draw!

Aspercreme - Crossing the Line

- **Commerical:** Announcer holding aspirin tablets, replaced by Aspercreme.

- **What she says:**
  When you suffer from arthritis, imagine putting the strong relief of aspirin right where you hurt. Aspercreme is an odourless rub that concentrates the relief of aspirin. When you take regular aspirin, it goes through your body like this. But in seconds, Aspercreme starts concentrating all the temporary relief of two aspirin directly at the point of minor arthritis pain...

  [Voice over]
  Aspercreme. The strong relief of aspirin right where you hurt

Aspercreme — The Story

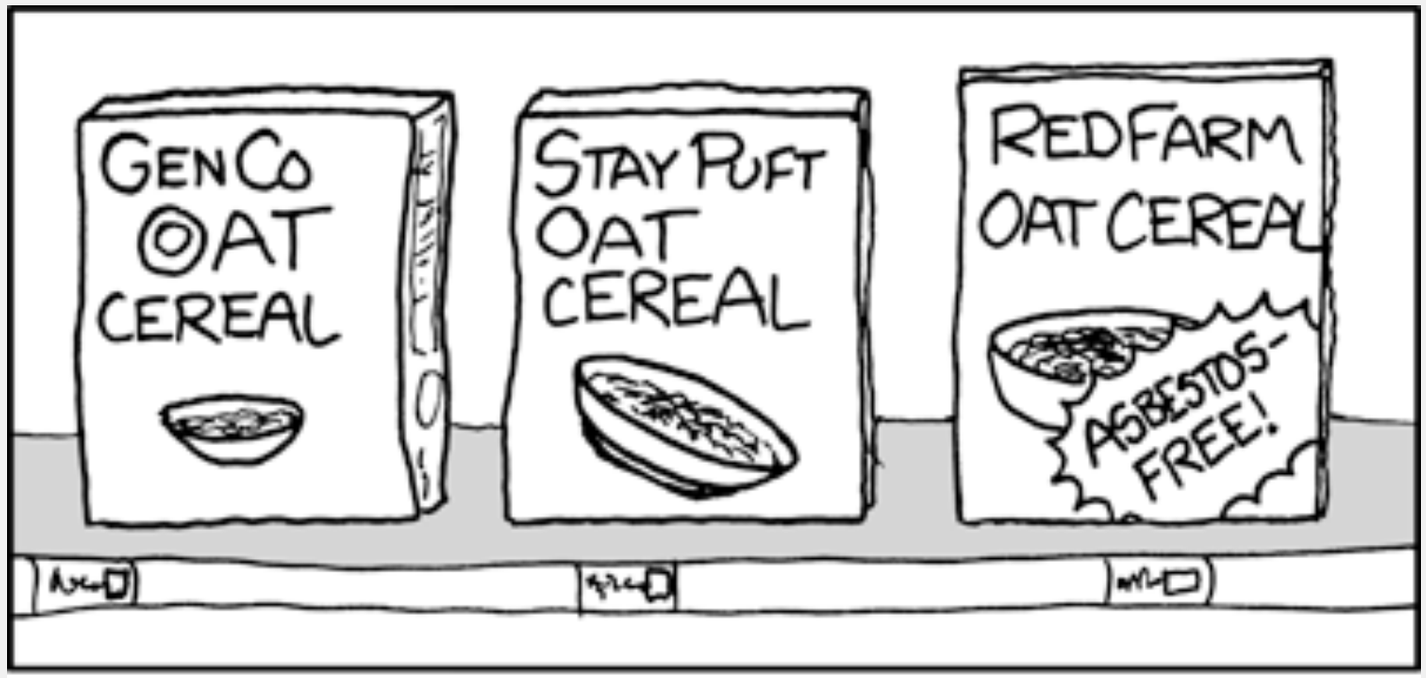
- **Aspercreme** does not contain any aspirin
- **Aspercreme** has not been shown to work better than aspirin
- **Thompson Medical** defended itself by saying that they made no such claims
- FTC concluded that there were too many invitations towards such incorrect inferences

Implicatures summary

- We can’t help but draw all kinds of conclusions based on what people say that go beyond what was literally said
- In large part this is due to our assumptions about how interactions with others work
- Mastering the **insights from pragmatics** allows you to see through the rhetorical tricks that get thrown at you in everyday life.

Other courses

- Fall 2020
  - Ling 105 - Intro to Cognitive Science
  - Ling 175 - Language, Cognition, & Culture
  - Ling 380 - Semantics I
- Spring 2021
  - Ling 106 - Formal Linguistics
  - Ling 170 - Experimental Approaches in Language
  - Ling 455 - Experiments in the Study of Meaning



I HATE WHATEVER MARKETER FIRST REALIZED YOU COULD DO THIS.

(https://xkcd.com/641/)