

Context and Inference-II

Ashwini Vaidya

4th Nov 2024

All about the brain

- <https://www.youtube.com/watch?v=ByF6Vg-KoGw>

Grice's Co-operative principle

- The over-arching goal of conversation is the exchange of information
- Speakers design their utterances to help the listener acquire information
- Speakers co-operate with listeners whose goal is to learn something new

Co-operative 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 ”

- What determines the content of the dialogue?
- How is speech planned and inferences made ?
- These are not hard and fast rules, but a set of guidelines that speakers usually follow
- When these guidelines are ignored, there might often be a reason to do so

Dialogue

- The opportunity for interaction distinguishes dialogue from monologue
- In a game of chess, each participant thinks and pauses, then makes a move— followed by the other participant
- In dialogue too, one participant speaks, then it is the other person's turn
- Dialogue is created by partners interacting and co-operating on the content of the dialog

Dialogue

- What determines the content of the dialogue?
- How is speech planned and inferences made ?
- Note that when we study dialogues and narratives (as opposed to the single sentences we were studying so far), the nature of the language data changes ..
- Dialogues and narratives are subject to real-world goals, speech errors and disfluencies
- Dialogue is created by partners interacting and co-operating on the content of the dialog
- Hence the role of the **speaker** and **listener** becomes important

- Grice outlined four Maxims¹ to determine whether speakers' dialogue is well-formed and appropriate
 - ▶ Principle of quantity
 - ▶ Principle of quality
 - ▶ Principle of relation
 - ▶ Principle of manner

¹a short statement expressing a general truth: here, however it refers to some underlying assumptions that speakers make

Maxim of quantity

- This principle states:
 - ① Make your contribution as informative as is required (for the current purposes of the exchange)
 - ② Do not make your contribution more informative than is required
- If someone asks *How do I reach SDA market ?* You will not answer as , *Walk to your car, unlock the car, open the door, sit inside* before giving directions
- Violating quantity is costly as it delays communication of information

Maxim of quality

- The principle of quality states “try to make your contribution one that is true”
 - ① Do not say what you believe to be false
 - ② Do not say that for which you lack adequate evidence

Maxim of relation

- This principle states that
 - ① A speaker's contributions should be relevant to the current topic of conversation
- This principle allows speakers to successfully interpret ambiguous statements
- E.g. if I am talking about 'python' in the context of a programming language, then it is understood that I am not referring to a snake
- Similarly, when a discussion is about a python in the wild, the programming meaning is not favoured

Maxim of manner

- This principle states 'Be perspicuous' i.e. clear
 - ① Avoid obscurity of expression
 - ② Avoid ambiguity
 - ③ Be brief
 - ④ Be orderly

- Gricean Maxims are intended to serve as guidelines in planning speech, (rather than strict rules)
- Listeners do not seem to play an active role in shaping the speaker's contributions
- Speakers may also modify their speech in response to feedback from a listener
- Analysis of conversation reveals some more phenomena that occur in real dialogue

Last time..

- Difference between different types of inference: entailment, presupposition and implicature

Last time..

- Difference between different types of inference: entailment, presupposition and implicature
- We can compare the two sentences below

Last time..

- Difference between different types of inference: entailment, presupposition and implicature
- We can compare the two sentences below
 - ① John Doe speaks French, German and Spanish

Last time..

- Difference between different types of inference: entailment, presupposition and implicature
- We can compare the two sentences below
 - 1 John Doe speaks French, German and Spanish
 - 2 John Doe speaks more than two languages

Last time..

- Difference between different types of inference: entailment, presupposition and implicature
- We can compare the two sentences below
 - ① John Doe speaks French, German and Spanish
 - ② John Doe speaks more than two languages
- Whenever 1) is true, 2) must be true too (hence 1 entails 2)

Last time..

- Difference between different types of inference: entailment, presupposition and implicature
- We can compare the two sentences below
 - ① John Doe speaks French, German and Spanish
 - ② John Doe speaks more than two languages
- Whenever 1) is true, 2) must be true too (hence 1 entails 2)
- Entailment is defined in terms of truth conditions- whenever truth conditions for 1) are satisfied, they are also satisfied for 2)

Last time..

- Difference between different types of inference: entailment, presupposition and implicature
- We can compare the two sentences below
 - ① John Doe speaks French, German and Spanish
 - ② John Doe speaks more than two languages
- Whenever 1) is true, 2) must be true too (hence 1 entails 2)
- Entailment is defined in terms of truth conditions- whenever truth conditions for 1) are satisfied, they are also satisfied for 2)
- We will review another type of inference: implicature

John Doe speaks English, French and Spanish. In fact, he speaks Cantonese as well.

- Even though the second sentence expresses the *negation* of the implicature, the two sentences are not a contradiction

- Conversational implicatures differ from entailments because what is implied is not *logically* implied

- Conversational implicatures differ from entailments because what is implied is not *logically* implied
- Implication can be cancelled without producing a contradiction

- Conversational implicatures differ from entailments because what is implied is not *logically* implied
- Implication can be cancelled without producing a contradiction
- i) John Doe speaks English, French and Spanish.

- Conversational implicatures differ from entailments because what is implied is not *logically* implied
- Implication can be cancelled without producing a contradiction
- i) John Doe speaks English, French and Spanish.
- This sentence implies, *John Doe does not speak Cantonese*

- Conversational implicatures differ from entailments because what is implied is not *logically* implied
- Implication can be cancelled without producing a contradiction
- i) John Doe speaks English, French and Spanish.
- This sentence implies, *John Doe does not speak Cantonese*
- However, if John Doe *did* speak Cantonese, sentence i) is not false, rather its inference 'John Doe doesn't speak Cantonese' is defeasible

- Conversational implicatures differ from entailments because what is implied is not *logically* implied
- Implication can be cancelled without producing a contradiction
- i) John Doe speaks English, French and Spanish.
- This sentence implies, *John Doe does not speak Cantonese*
- However, if John Doe *did* speak Cantonese, sentence i) is not false, rather its inference 'John Doe doesn't speak Cantonese' is defeasible

Entailments are not defeasible

John Doe speaks English, French and Spanish, but he doesn't speak more than two languages.
(this sentence is odd)

- The sentence John Doe speaks English, French and Spanish brings with it the assumption that this was the exhaustive list of languages that John Doe speaks

- The sentence John Doe speaks English, French and Spanish brings with it the assumption that this was the exhaustive list of languages that John Doe speaks
- If he (additionally) speaks Cantonese, then we *assume* that the person omitted to include Cantonese the first time

- The sentence John Doe speaks English, French and Spanish brings with it the assumption that this was the exhaustive list of languages that John Doe speaks
- If he (additionally) speaks Cantonese, then we *assume* that the person omitted to include Cantonese the first time
- Such an implication is a form of **conversational implicature**

- The sentence John Doe speaks English, French and Spanish brings with it the assumption that this was the exhaustive list of languages that John Doe speaks
- If he (additionally) speaks Cantonese, then we *assume* that the person omitted to include Cantonese the first time
- Such an implication is a form of **conversational implicature**
- Conversational implicatures are inferences we derive when we assume that the speaker adhered to certain norms of conversation

Grice's Maxims

- For example, you were introduced to **Grice's Maxims**

- ▶ Maxim of Quantity
- ▶ Maxim of Quality
- ▶ Maxim of Relation
- ▶ Maxim of Manner

Grice's Maxims

- For example, you were introduced to **Grice's Maxims**
 - ▶ Maxim of Quantity
 - ▶ Maxim of Quality
 - ▶ Maxim of Relation
 - ▶ Maxim of Manner
- In the case of the example of John Doe, if Cantonese wasn't included in the list of languages, it was a violation of the **Maxim of Quantity**

Grice's Maxims

- For example, you were introduced to **Grice's Maxims**

- ▶ Maxim of Quantity
- ▶ Maxim of Quality
- ▶ Maxim of Relation
- ▶ Maxim of Manner

- In the case of the example of John Doe, if Cantonese wasn't included in the list of languages, it was a violation of the **Maxim of Quantity**
- The Maxim of Quantity states that speakers should provide as much information as needed for the exchange

Grice's Maxims

- For example, you were introduced to **Grice's Maxims**

- ▶ Maxim of Quantity
- ▶ Maxim of Quality
- ▶ Maxim of Relation
- ▶ Maxim of Manner

- In the case of the example of John Doe, if Cantonese wasn't included in the list of languages, it was a violation of the **Maxim of Quantity**
- The Maxim of Quantity states that speakers should provide as much information as needed for the exchange
- Also, the inclusion of Cantonese is *relevant* for the discussion of languages known by John Doe

- Semantics is sometimes said to be the study of what linguistic expressions mean, while pragmatics is the study of what speakers mean by them.
- The term 'pragmatics' can also be applied to the study of any interaction between meaning and context.
- There is no sharp dividing line between semantics and pragmatics
- It is fair to say that ordinary entailments lie in the domain of semantics proper
- Implicatures lie in the domain of pragmatics proper.

Presupposition

- The study of presupposition lies squarely in the intersection of semantics and pragmatics

Presupposition

- The study of presupposition lies squarely in the intersection of semantics and pragmatics
- Consider the two sentences:-

Presupposition

- The study of presupposition lies squarely in the intersection of semantics and pragmatics
- Consider the two sentences:-
 - 1 The TikTok that Mozart made is very famous

Presupposition

- The study of presupposition lies squarely in the intersection of semantics and pragmatics
- Consider the two sentences:-
 - 1 The TikTok that Mozart made is very famous
 - 2 The TikTok that Mozart made is not very famous

Presupposition

- The study of presupposition lies squarely in the intersection of semantics and pragmatics
- Consider the two sentences:-
 - ① The TikTok that Mozart made is very famous
 - ② The TikTok that Mozart made is not very famous
- We know that sentence 1) is not true.. TikTok did not exist in the time of Mozart. At the same time, 2) is also not true (cannot be evaluated)

Presupposition

- The study of presupposition lies squarely in the intersection of semantics and pragmatics
- Consider the two sentences:-
 - ① The TikTok that Mozart made is very famous
 - ② The TikTok that Mozart made is not very famous
- We know that sentence 1) is not true.. TikTok did not exist in the time of Mozart. At the same time, 2) is also not true (cannot be evaluated)
- The *definite description* **The TikTok that Mozart made** triggers a presupposition of existence – as it doesn't exist, we get a truth value gap

Presupposition

- The study of presupposition lies squarely in the intersection of semantics and pragmatics
- Consider the two sentences:-
 - ① The TikTok that Mozart made is very famous
 - ② The TikTok that Mozart made is not very famous
- We know that sentence 1) is not true.. TikTok did not exist in the time of Mozart. At the same time, 2) is also not true (cannot be evaluated)
- The *definite description* **The TikTok that Mozart made** triggers a presupposition of existence – as it doesn't exist, we get a truth value gap
- To presuppose something is to take it for granted, to treat it as uncontroversial and known to everyone participating in the conversation

Co-operation and Inference

- Conversational Implicature was introduced by H. Paul Grice, particularly to understand the co-operative use of inference
- We regularly under-specify the things we say: hence there must be some regularity in the inferences both speaker and listener will make
- Speakers and listeners co-operate with each other in communication: this can be explained by the **co-operative principle**

Putting together Lego blocks

A: Okay. Um lets see. So we need a yellow two by two. Okay and that's going to fit on the right side of the blue block.

B: M-hm.

A: So that half of it –oh yeah – on one row of the right side of the blue block.

B: Okay *so half of it's pointing to the right.

A: *So half of it is pointing off to the right. Yeah.

B: Got it.

- While discussing the Lego arrangement, A begins by talking about one of the first steps
- B signals assent - then A begins to talk about the next instruction, but stops, changes track
- Then B helps out in the rest of the instruction
 - ① The listener B is actively anticipating the things being said-
 - ② Speakers too speak before they have worked out all the details of their message
 - ③ Listeners in addition give evidence of understanding e.g. *M-hm* - these are **backchannel** responses

Common Ground

- The conversation excerpt shows that speakers can violate Gricean Maxims- and yet communicate effectively.
- This is due to the opportunity for collaboration and co-operation while speaking

• Clark and colleagues state that the main goal of dialogue is for partners to establish and expand **common ground**

- Common ground is not just shared knowledge- but *mutually recognized common knowledge*

Common Ground

- Speakers often require evidence that each of their statements have succeeded in expanding the common ground
- Evidence of understanding may be implicit *MmHmm* or explicit *Got it*
- Common ground allows speakers to formulate their statements and then collaborate with partners until the communication has succeeded

- Two interlocutors are looking at an abstract painting- one is describing what he sees

A: Okay the next one is ... resembles someone that looks like they're trying to climb stairs. There's two feet, one is way above the other, and ...

B: And there's a, there's a, a diamond on the right side, on a slant?

A: Yeah.

B: Got it.

A: Like, kind of looks like it's off the back.

B: Right, I got it.

- If the same task is repeated with the same pictures –

Second time

A: Uh, the next one is the person climbing the stairs.

B: OK.

A: Stair climber.

B: OK.

- The reference to someone climbing the stairs has already been established in the common ground
- As the task is repeated, the referring expression gets shorter in length
- Referring expressions are crafted by collaborating and verifying mutual understanding

- Once common ground is established, communication can proceed efficiently
- It is also *particular* to the speaker-listener pair
- It also disallows others from understanding the specific references (until common ground has been re-established for them)