Lecture 11: Pragmatics

L98: Introduction to Computational Semantics

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slides mostly by Simone Teufel

This is said at the end of the movie, "Se7en", after a lot of gruesome crimes and senseless slaughtering has happened. What is the movie character trying to say?

Lecture 11: Pragmatics

1. What is pragmatics?
2. Implicatures
3. Grice's Maxims
4. Rational Speech Act Model

What is Pragmatics?

Pragmatics

- One subdiscipline of Linguistics
- Same level as Morphology, Phonology, Syntax, Semantics, Discourse
- Concerns the transmission of meaning beyond what is explicitly said.
- Very little of what we share as knowledge is ever explicitly *said* in a conversation.
- All the rest is left unsaid when we speak, but must be somehow predictable.
- Otherwise, people would not be able to communicate.
- Explaining this area of linguistic communication is left to the discipline of *pragmatics*.
- Grice's (1967) *conversational implicature*.

Implicatures

Implicatures

- Def (1) implicature: any aspect of meaning that are not explicitly conveyed in what is said, but that can nonetheless be inferred.
- Def (2) implicature: an implicit assumption about the world or background belief relating to an utterance whose truth is taken for granted in discourse.

Example

A *Has John cleared the table and washed the dishes?*

B *He has cleared the table.*

Implicature: He has not washed the dishes.

Let's try to negate or confirm the implicature

- Negating:

  C: *That's not true* { *he hasn't cleared the table* / **he has washed the dishes* }

- Confirming:

  C: *You are right* { *he has cleared the table* / **he hasn't washed the dishes* }

- We also cannot report the implicature as having been stated by B:
  C: **B said that John hasn't washed the dishes.*

Implicatures

- Implicatures are objective – people strongly feel that some intended meaning has been transmitted, and they agree about what that additional meaning is.
- There is no vagueness.
- The place where it's added to is the "shared understanding" between speaker and listener.

Context-sensitivity of Implicatures

- A: *"Have you cleared the table and washed the dishes?"*
  B: *"I have cleared the table."* $\rightarrow$ I have not washed the dishes.

- A: *"Am I in time for supper?"*
  B: *"I have cleared the table."* $\rightarrow$ You are too late for supper.

Implicatures have importance in daily life

- Because they enable us to communicate more efficiently.
- But they can also be used to "smuggle" non-challengable information into a discourse.
- They can therefore be used against us if we are in a non-cooperative = adversarial discourse (e.g., during cross-examination by a hostile lawyer).
  - "*Did you decide to kill her before or after you entered the kitchen?*"
- Answering the statement does not help:
  - "*It was beforehand.*"
  - "*It was afterwards.*"
- There is only one way to react adequately to such questions:
  - "*I don't subscribe to your assumptions.*" (set phrase)

Presuppositions

If an implicature is closely linked to syntactic form, we call it a conventional implicature or a presupposition.

Example

- *Jane no longer writes fiction.*

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- *Jane no longer writes fiction.*
  Presupposition: Jane once wrote fiction.

- *Have you stopped eating meat?*

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- *Jane no longer writes fiction.*
  Presupposition: Jane once wrote fiction.
- *Have you stopped eating meat?*
  Presupposition: You used to eat meat.
- *If the notice had only said 'mine-field' in Welsh as well as in English, we would never have lost poor Llewellyn.*

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- *If the notice had only said 'mine-field' in Welsh as well as in English, we would never have lost poor Llewellyn.*
  Presupposition: The notice didn't say 'mine-field' in Welsh.
- *Have you talked to Hans?*

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- *If the notice had only said 'mine-field' in Welsh as well as in English, we would never have lost poor Llewellyn.*
  Presupposition: The notice didn't say 'mine-field' in Welsh.
- *Have you talked to Hans?*
  Presupposition: Hans exists.

Presuppositions and Discourse

- A presupposition of a sentence must normally be part of the **common ground** of the utterance context (the shared knowledge of the interlocutors) in order for the sentence to be felicitous.
- If not, presupposition accommodation takes place unless this leads to inconsistency. ("My wife is a dentist", said to somebody who does not know that you have a wife.)

Presupposition triggers

Many words and constructions are presupposition triggers, e.g.,

- *regret*, *realise*, *manage*, *forget*, *try* $\rightarrow$ X happened (+ sentiment/judgement towards X)
- *I don't get to see you* $\rightarrow$ I consider it a treat to see you
- *again*, *since X happened* $\rightarrow$ X happened before
- *Carol is a better linguist than Mary. . .* $\rightarrow$ both are linguists

Presupposition vs Entailment

- Negation of utterance does not cancel its presuppositions:

Presupposition – no cancellation

She has stopped eating meat.
Presupposition: She used to eat meat.
She has not stopped eating meat.
→ Presupposition survives under negation.

- This distinguishes it from entailment.

Entailment – cancellation

The president was killed.
Entailment: The president is dead.
The president was not killed.
→ Entailment does not survive under negation.

In a sense, we can consider entailments as "part of what is said".

Cancellation

Implicatures are cancellable:

(1) She has stopped eating meat, **but hey, now that I come to think of it, maybe she never ate it?**

Entailments aren't cancellable:

(2) *The president was killed, **but now that I come to think of it, he wasn't really dead.**

Conversational Implicatures

- Another type of implicature is the conversational implicature.
- Conversational implicatures are not tied to particular lexical items.

Example

A couple are getting ready to go out for the evening.

Partner 1: How much longer will you be?
Partner 2: Mix yourself a drink.

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- What is implicated?
- How else could it have been said?

Scalar Implicature

- A statement is made involving some point on some scale
- Scalar implication: the point on the scale is the most informative, strongest statement that the speaker could use.
- They have reasons not to use a higher point on the scale.

Example

(3) a. Some of the apples are red. ▷ not all are

b. Jane has three apples. ▷ no more than three

c. Jane has apples or oranges ▷ doesn't have both

Like all pragmatic inference, scalar implicature is also cancellable.

Conventional or conversational?

(4) a. *John didn't manage to walk as far as the crossroads.*

b. *John didn't walk as far as the crossroads.*

c. *John attempted to walk as far as the crossroads.*

- a) and b) are propositionally identical, and only differ in the lexical item *manage to*.
- a) implicates c), but b) does not implicate c)
- This means that the implicature b) is tied to the lexical item *manage to*.
- Therefore, c) is a presupposition or conventional implicature, and not a conversational implicature.

Grice's Maximes

Grice, Cooperation Principle

- Speakers cooperate, even when they argue!
- By means of general principles of rational cooperative behavior we can communicate more with the use of a sentence than the *conventional semantic meaning* associated with it.
- Make your contribution such as it is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

Four maximes

- Maxim of Quality
- Maxim of Quantity
- Maxim of Relevance
- Maxim of Manner

Grice, Maxim of Quality

a Do not say what you believe to be false.

b Do not make unsupported statements (i.e., those for which you lack adequate evidence).

Grice, Maxim of Quantity

a Make your contribution as informative as required for the current purposes of the exchange in which you are engaged.

b Do not make your contribution more infomative than is required.

Example

A "*What did you have for lunch today?*"

B "*Food.*"

B "*Beans on toast.*"

B "*I had 87 warmed-up baked beans (although 8 of them were slightly crushed) in tomato-sauce, served on a slice of toast 12.7cm by 10.3cm, which had been unevenly toasted.*"

Grice, Maxim of Relevance

Example

A *"Have you seen Mary today?"*

B ? *"I am breathing."*

Be relevant

An utterance u is relevant to a speech situation to the extent that u can be interpreted as contributing to the conversational goals of Speaker S or Listener/Hearer L.

Putting everything up to now together

Make the strongest statement that can be relevantly made, justifyable by your evidence.

- In this, "stronger statement" entails the weaker one (is more informative).
- "*John trapped a badger*" is stronger than "*Someone caught an animal*".

Grice, Maxim of Manner

a Avoid obscurity.

b Avoid ambiguity.

c Avoid unnecessary prolixity.

d Be orderly.

An example where (d) is violated:

(5) The lone rider rode off into the sunset and jumped on his horse.

About the nature of Gricean Maxims

- They are not like grammatical rules → Flouting[1] them is possible, but it is read as a signal by L.
- They are not cultural norms like politeness → they are rational principles underlying communication in all cultures
- They are not necessarily about "being nice to each other" – they are hard, cold information delivery tools
- They are followed in all areas of cooperation, not just language.
- Example for this – workman asking "Please hand me a chisel"
  - Maxim of Quality – don't hand over a saw.
  - Maxim of Quantity – don't hand over two chisels.
  - Maxim of Relevance – don't hand over a chisel when none has been requested or seems needed.
  - Maxim of Manner – don't describe where the chisel is with a riddle.

[1] Flouting means openly, clearly visibly breaking a rule.

Grice, Example of Following the Maxims

A (stranded motorist): "*I have run out of petrol.*"

B (passerby): "*There is a garage just round the corner.*"

- A can assume that the garage is the kind that is selling petrol (not the kind where I store my car), and that it is open.
- Because we can by default assume that B is cooperative.
- If B knew that the garage advice was not suitable, and still said the above statement, then B would have broken the Relevance Maxime.

Grice, Example of Following

Scalar implicature

A "*How many children does Tom have?*"

B "*Four.* "

A can assume that Tom has exactly four children:

- If Tom had fewer (e.g. 2), B would have lied (broken the Quality Maxim).
- If Tom had more (e.g., 6), B would not have lied, but would have said a less informative statement than the one she could have said (i.e., broken the Relevance Maxim).

An Example from the UK citizenship test

FACT:
$\frac{1}{3}$ *of the UK population, and* $\frac{1}{2}$ *of the UK population under 25 have experimented with drugs.*

QUESTION:
$\frac{1}{3}$ *of the UK population under 25 have experimented with drugs.*

- *true?*
- *false?*

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- *true?*
- *false?*

- What is a poor applicant hoping for UK citizenship supposed to answer in such a situation?
- The statement is logically entailed, but breaks the Relevance Maxim and is thus not implicated.

Rational Speech Act Model

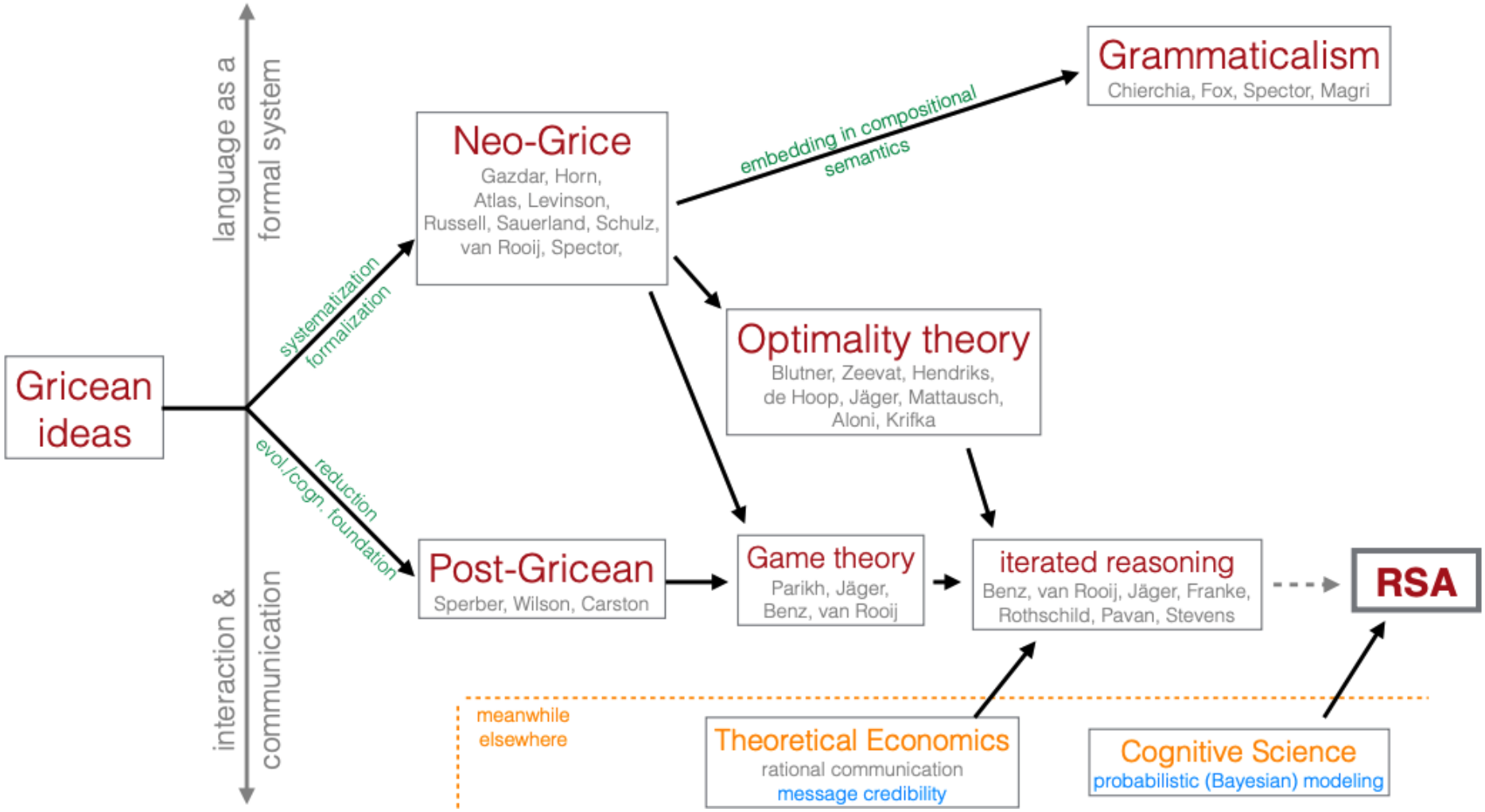


Figure from Machael Franke

- Probabilistic pragmatics follows Grice in emphasising goal-oriented, optimal behavior.
- Probabilistic pragmatics is not tied to maxims.

Rational Speech Act Model

- The pragmatic listener/hearer L infers the state of the world, w, using Bayes' rule, given the observation that the speaker S chose a particular utterance u:

$$P_L(w|u) \propto P_S(u|w)P(w)$$

- L assumes that S is approximately rational in that S chose their utterances in proportion to the utility she expects to gain.

$$P_S(u|w) \propto \exp(\alpha U(u;w))$$

- The basic speaker utility used in RSA is based on literal meaning. S assumes a simple literal listener Lit.

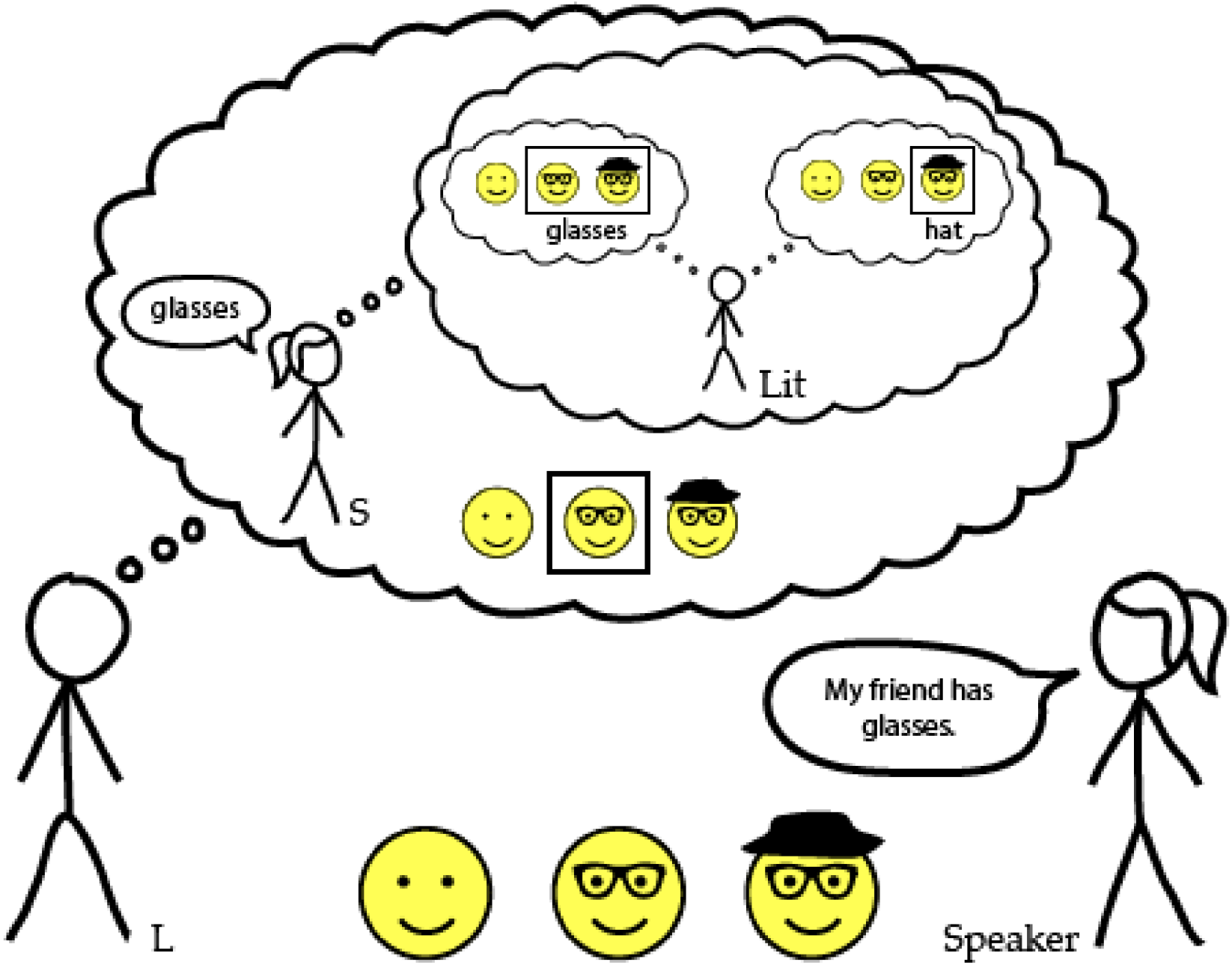
$$U(u;w) = \log P_{\mathsf{Lit}}(w|u) - \mathtt{cost}(u)$$

- Lit assumes that the literal meaning of utterance is true:

$$P_{\mathsf{Lit}}(w|u) \propto [\![u]\!](w)P(w)$$

- An iterative model: L reasons about S, who in turn reasons about Lit.

An example: on whiteboard



RSA (cont)

$$
\begin{aligned}
P_{\mathsf{Lit}}(w|u) &\propto [\![u]\!](w)P(w) \\
U(u;w) &= \log P_{\mathsf{Lit}}(w|u) - \texttt{cost}(u;w) \\
P_S(u|w) &\propto \exp(\alpha U(u;w)) \\
P_L(w|u) &\propto P_S(u|w)P(w)
\end{aligned}
$$

- $P(w)$ presents Listener prior over meanings: *what do I expect to hear about?*
- α captures the extent to which the speaker maximizes their utility.
- `cost` can be used to corelate to Grice's maxims, e.g. penalizing unnecessary prolixity.

Reading this time

- Cruse. 2011. Meaning in Language. Chapter 20.1
- Goodman and Frank. Pragmatic language interpretation as probabilistic inference. `https://langcog.stanford.edu/papers_new/goodman-2016-underrev.pdf`