Pragmatics:
The use of referring expressions

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Pragmatics: non-literal language

Contrastive Inferences

Q: *What time is it?*
A: *Some people are already leaving.*
   → It’s late.

Q: *How is the party?*
A: *Some people are already leaving.*
   → The party isn’t very good.

• When are inferences / implicatures computed?
• What aspects of the context enter into their computation?
Pragmatics: non-literal language

• Gricean Maxims: Cooperative conversation.
  ➢ Violating a maxim leads to an **implicature**
    • *Implicature*: an inference whose source is a linguistic expression

• Implicatures and on-line sentence processing

  ➢ When do people compute contrast sets associated with referring expressions? Test cases:
    • Contrast sets associated with scalar adjectives like “big” / “small” and non-scalar adjectives like materials (e.g., “plastic”) and color (e.g., “red”)
    • Scalar implicatures associated with determiners like “some” vs. “all”
Grice’s Maxims

Four conversational maxims for a cooperative speaker:

(1) Maxim of Quantity:
  • Make your contribution as informative as is required
  • Do not make your contribution more informative than is required

  *In a context where all of the students passed the test.*
  *Some of the students passed the test.*

  *In a context with only one cup:*
  *Pass me the cup.*
  *?? Pass me the tall blue cup that’s made out of plastic.*

(2) Maxim of Quality:
  • Do not say that which you believe to be false
  • Do not say that for which you lack evidence

(3) Maxim of Relation:
  • Say only what is relevant for the current purposes of the conversation.

(4) Maxim of Manner:
  • Be brief but avoid ambiguity or obscurity of expression.
Grice’s Maxims

- As long as the speaker adheres to the cooperative principle, he/she can disobey the maxims intentionally.
  - Deliberate violation of a maxim can give rise to an **implicature**.
  - **Implicature**: exploiting the cooperative principle to convey more information than is actually contained in an utterance.
  - Hyperbole, sarcasm, understatement are all violations of Quality maxim.
Violating Grice’s Maxims

• Letter of recommendation for graduate school
  ➢ Dear Sirs, Mr. X’s command of English is excellent, his attendance at tutorials has been regular, and his family is charming. – Yours, Professor Y.

Violation of the maxim of quantity.

➢ A: John doesn’t seem to have a girlfriend these days.
   B: He’s been driving up to New York every weekend.

Violation of the maxim of relation and / or manner.
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- Implicatures and on-line sentence processing
  - When do people compute contrast sets associated with referring expressions? Test cases:
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Contrast sets and referring expressions: **Modifiers**; e.g., Adjectives

Dependency Between **Restrictive Modification** and **Contextual Contrast**

*Can you pass Tim the tall cup?*

\[ \exists x[\text{cup}(x) \land \text{tall}(x)] \]

\[ \rightarrow \exists x[\text{cup}(x) \land \neg \text{tall}(x)] \] reference set contrast set
Sedivy, Chambers, Tanenhaus, & Carlson (1999)

Target Instruction:
"Pick up the tall glass."

Diagram with four items: Target, Distractor, Competitor, Contrast.
Sedivy, Chambers, Tanenhaus, & Carlson (1999): “Pick up the small basket”
Sedivy, Chambers, Tanenhaus, & Carlson (1999): “Pick up the small basket”
Contrast Effect: Eye-movements converge more quickly on the target and there are fewer looks to the competitor in the presence of a contrast set.
Two Explanations for Contrastive Inferences

(1) Gricean Account (Pragmatic account)

- Contrastive inferences arise because the use of a restrictive modifier is embedded in a collaborative communicative context.
- Quantity-2: Don’t make your contribution more informative than is required for the purposes of the present exchange.
- The hearer notes that the speaker chose a modified form rather than an unmodified form to refer to an entity. The inclusion of the modifier is most easily made informative by attributing to it a distinguishing function.
Two Classes of Explanation for Contrastive Inferences

(2) Form-Based Account (Semantic account: literal meaning)

- Contrastive inference is closely tied to conventional meaning of restrictively modified NPs or to the lexical class of the modifier.
- Scalar adjectives contain a variable assigned by a contextually relevant comparison class (Seigel, 1980; Bierwisch, 1987)
- Minimizes the amount of information that is accessed in making contrastive inferences
Tests of the theories

• Testing the form-based account: The contrast effect should disappear if a non-scalar adjective is used. E.g., a color adjective, or a material adjective.

• Colors: “pick up the blue cup”, with a blue and red cup in the display. (as well as a competitor blue object, in order to control for the fact that people are incremental in their eye-gazes.)

• Results from colors:
  The contrast effect disappears!

• Is this support for the form-based account?
  ➢ Yes, but there is an alternative Gricean account.
Tests of the theories

• Surprising result for the form-based account:

• Materials: “pick up the plastic cup”, with a plastic and glass cup in the display.

• Results from materials:
  The contrast effect re-appears!

• This contradicts the prediction of the form-based account
New Gricean theory (Sedivy, 2003; cf. Levinson, 2000)

- Quantity-2: Don’t make your contribution more informative than is required for the purposes of the present exchange.
- The hearer notes that the speaker chose a modified form rather than the simple, default form to refer to an entity. The inclusion of the modifier is most easily made informative by attributing to it a distinguishing function.

(1) Neo-Gricean View (Conservative)
Early contrastive-inferences are only sensitive to whether or not the speaker elaborates on a default form. (cf. Levinson, 2000)

- The baseline is the default form: the way that people would describe the situation with no contrasting information.
New Gricean theory (Levinson, 2000)

- Differences in default forms:
  - Colors are often produced along with the head noun in describing an object (Sedivy, 2003).
  - Materials and scalar adjectives are not.

- Thus, the presence of a material or scalar adjective provides suggestive information to the listener that there is a contrasting object in the relevant dimension. Colors do not provide this information.
Predictions of the neo-Gricean view

1. If a color term is not normally produced when describing an object, then the contrast effect should re-emerge.

Sedivy (2003): “Pick up the yellow banana”, in the context of a yellow banana and a green banana
Predictions of the neo-Gricean view

2. If the listener knows that the speaker is not reliable in his / her productions, then looks to the contrasting elements may disappear.

Grodner et al. (2003): This prediction is realized.
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  - Use of referring expressions in encoding **perspective**: what’s old / new: common ground vs. privileged ground
The use of referring expressions in encoding perspective

- **Privileged ground** - knowledge that is possessed by one interlocutor and not the other (and mutually accepted as such)

- **Common ground** - knowledge that is possessed by both interlocutors (and mutually accepted as such)
Perspective required for

- Formulating and interpreting assertions
- Asking and interpreting questions
- Arriving at implicated meanings
- **Using referring expressions**
- Etc.

- When (and how) does perspective information become available?
Two views

• View 1: Initial Egocentricity
  ➢ Knowledge in someone else’s head is heterogeneous, unbounded, and potentially cumbersome
  ➢ **Maybe process from own perspective initially**

• View 2: Initial Perspective Taking
  ➢ Humans have tremendous social competency (cf. Baldwin, Tomasello)
  ➢ Interlocutor’s perspective is extremely useful
  ➢ **Maybe immediately integrate interlocutor’s perspective with one’s own**
Evidence for Egocentricity
Keysar, Barr, Balin & Brauner 2000

Pick up the small candle

- No early effect of perspective
  - Privileged object considered first

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Evidence for Egocentricity
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*Pick up the small candle*

- No early effect of perspective
  - Privileged object considered first
- BUT privileged object is the best fit for the description

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Evidence for Perspective Taking
Hanna, Tanenhaus & Trueswell 2003; cf. Nadig & Sedivy 2002

“now put the blue triangle on the red one”

- Target and competitor are the same.

Immediate use of perspective
Shared triangle favored immediately over privileged

Evidence for Perspective Taking
Hanna, Tanenhaus & Trueswell 2003; cf. Nadig & Sedivy 2002

“now put the blue triangle on the red one”

- Target and competitor are the same.

Immediate use of perspective
Shared triangle favored immediately over privileged
BUT global ambiguity is infelicitous (referential ambiguity here)
May trigger strategic use of perspective! (Keysar, Lin, Barr 2003; Kronmuller & Barr 2007)

Size adjectives

“pick up the *big duck*”

- Faster to fixate on the *target* and less likely to fixate on a *competitor* when a *contrast* is present
- Difference even before the noun is disambiguated (Sedivy et al 1999)
Heller, Grodner & Tanenhaus (2008): Experiment 1

2 (1 or 2 contrasts) X 2 (shared vs. privileged ground)

“pick up the big duck”
Experiment 1

“pick up the big duck”

No global ambiguity: the instruction is disambiguated at the noun. The use of a size adjective is felicitous in all conditions. The competitor is shared in all conditions: a potential referent.
Methods

• Interactive task to make a configuration look like a diagram
• Participants were addressees, confederate was speaker
• Told the confederate was an RA who was naïve (True)
• Only the first description used by the RA was scripted
• 16 subjects, 16 stimuli, Latin square design, 32 filler items
• 2 X 2 crossing number of contrasts with perspective
“pick up the big duck”

two contrasts
“pick up the big duck”

one contrast

![Graph showing proportion of fixations over time with big and competitor Y compared to target X.](image)
“pick up the big duck”
“pick up the big duck”
“pick up the big duck”

two privileged
Proportion of Fixations to Target vs. Competitor

Adjective Region

Chance = 50%

Time (ms) after Adjective Onset

One Contrast, Privileged
One Contrast, Shared
Two Contrasts, Privileged
Two Contrasts, Shared
Heller, Grodner & Tanenhaus (2008): Conclusions

Perspective information integration:

- ... happens in real time.
- ... even when there is no trigger (like global ambiguity)
- The status of the competitor is modulated by the shared vs. privileged status of its contrast.
Conclusions

• Perceivers don’t
  ➢ ignore perspective
  ➢ fully adopt the speaker’s perspective
  ➢ use common ground as the primary referential domain

• Perceivers do integrate speaker knowledge into their own perspective
  ➢ Perspective information is just one of several factors that influence the resolution (and generation) of reference