

# Pragmatics: The use of referring expressions

Ted Gibson  
9.59J / 24.905J

# 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.

# 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”

# Contrast sets and referring expressions: **Modifiers**; e.g., Adjectives

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

*Can you pass Tim the tall cup?*

$\exists!x[\text{cup}(x) \ \& \ \text{tall}(x)]$

reference set

$\rightarrow \exists x[\text{cup}(x) \ \& \ \neg\text{tall}(x)]$

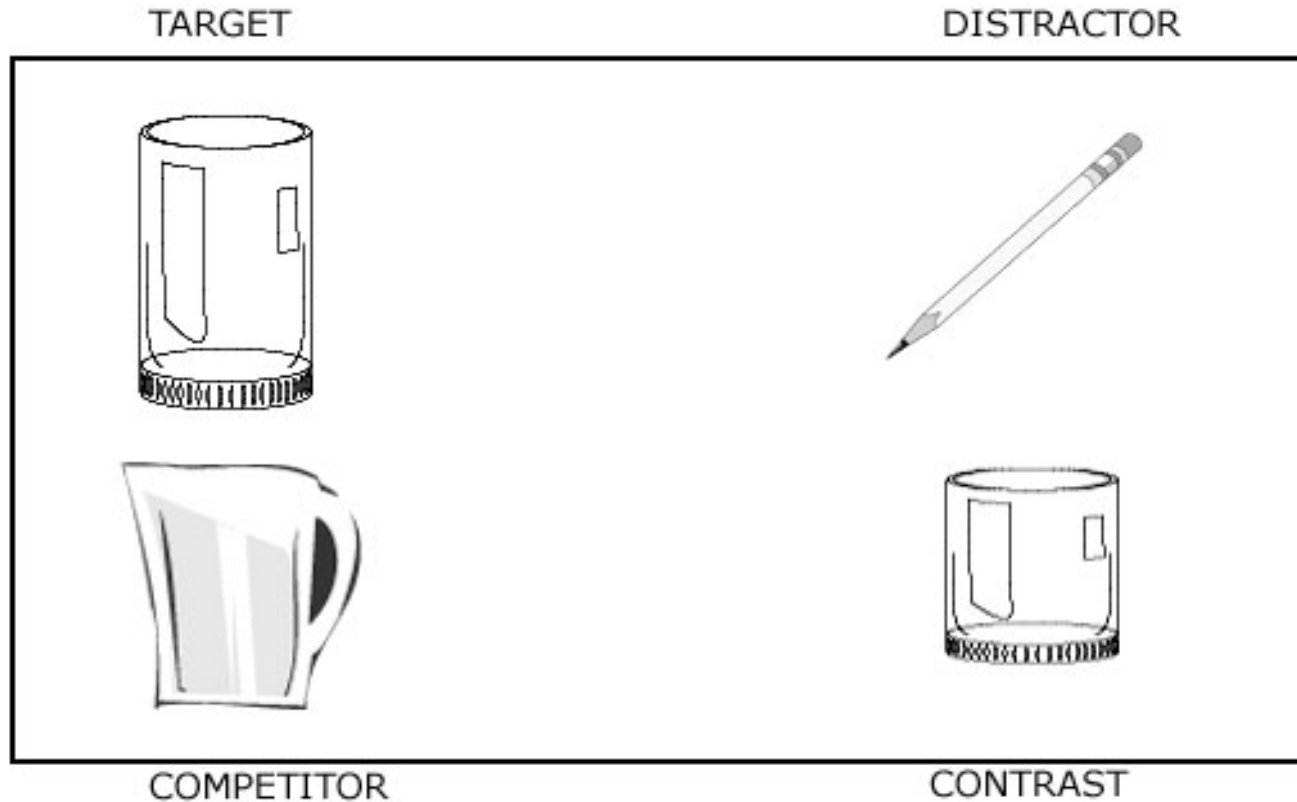
contrast set



# Sedivy, Chambers, Tanenhaus, & Carlson (1999)

Target Instruction:

*"Pick up the tall glass."*



Sedivy, Chambers, Tanenhaus, & Carlson (1999):  
"Pick up the small basket"



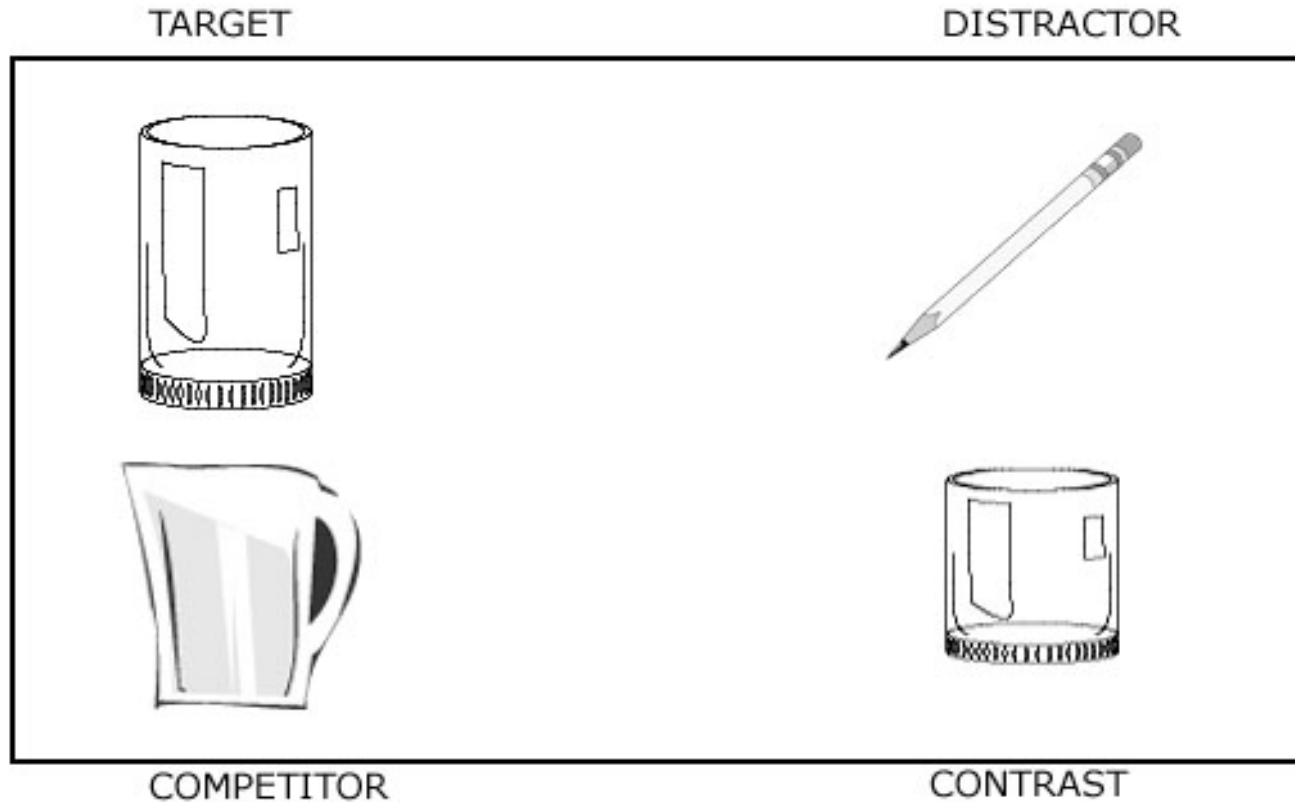
Sedivy, Chambers, Tanenhaus, & Carlson (1999):  
"Pick up the small basket"



# Sedivy, Chambers, Tanenhaus, & Carlson (1999)

Target Instruction:

*"Pick up the tall glass."*



© Elsevier. All rights reserved. This content is excluded from our Creative Commons license. For more information, see <http://ocw.mit.edu/help/faq-fair-use/>  
Source: Sedivy, Julie C., Michael K. Tanenhaus, Craig G. Chambers, and Gregory N. Carlson. "Achieving incremental semantic interpretation through contextual representation." *Cognition* 71, no. 2 (1999): 109-147.

- **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.

# 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”
  - 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

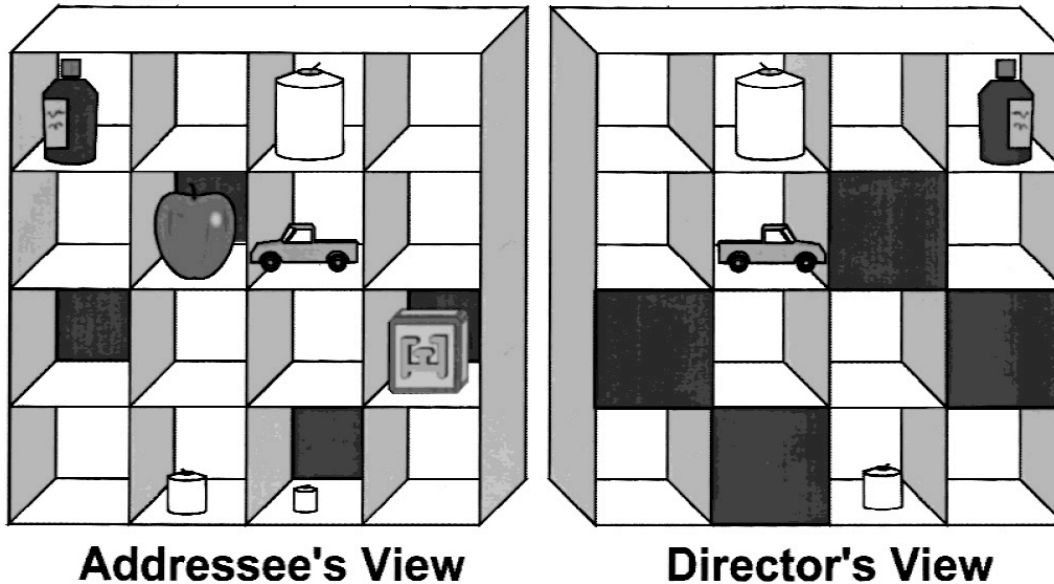
- View 1: Initial Egocentricity
  - Knowledge in someone else's head is heterogeneous, unbounded, and potentially cumbersome
  - **Maybe process from own perspective initially**
- View 2: Initial Perspective Taking
  - Humans have tremendous social competency (cf. Baldwin, Tomasello)
  - Interlocutor's 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***

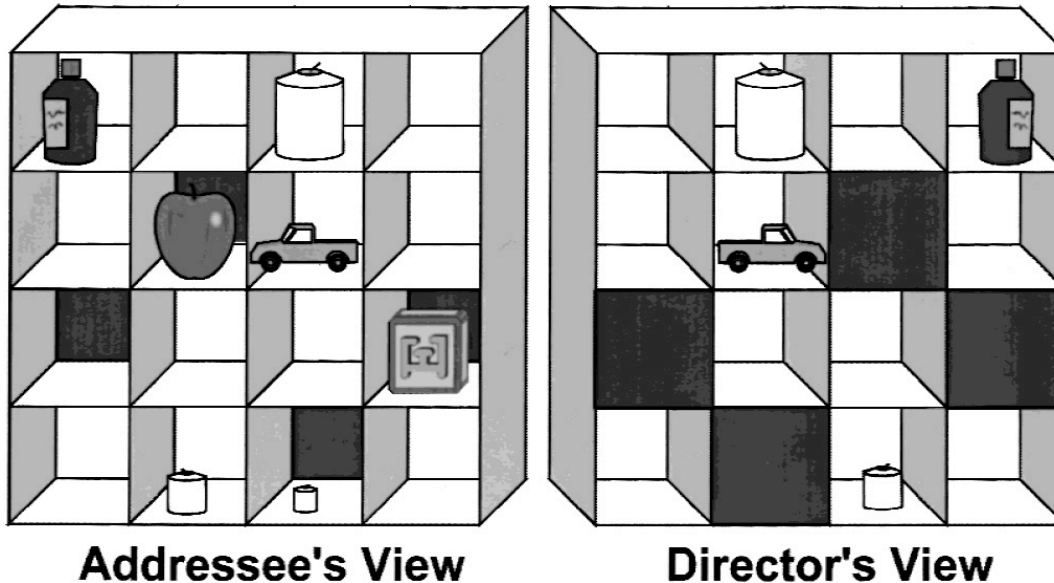


- No early effect of perspective
  - Privileged object considered first

# Evidence for Egocentricity

Keysar, Barr, Balin & Brauner 2000

*Pick up the small candle*



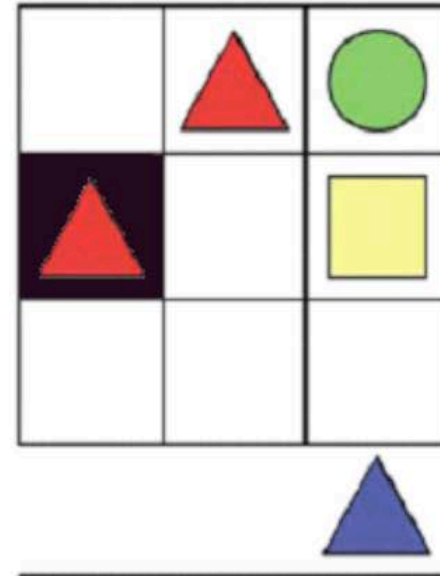
- No early effect of perspective
  - Privileged object considered first
- **BUT privileged object is the best fit for the description**

# 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

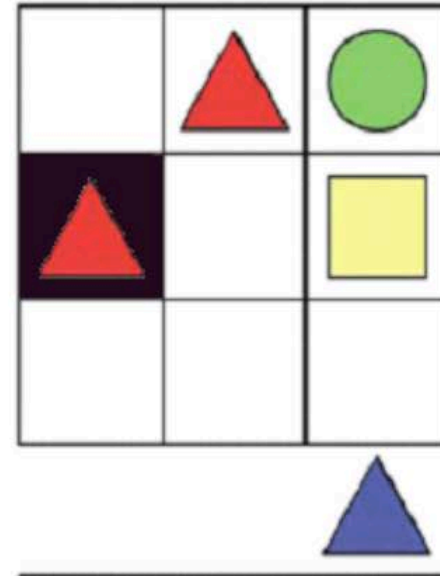
Shared triangle favored immediately over privileged

# 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

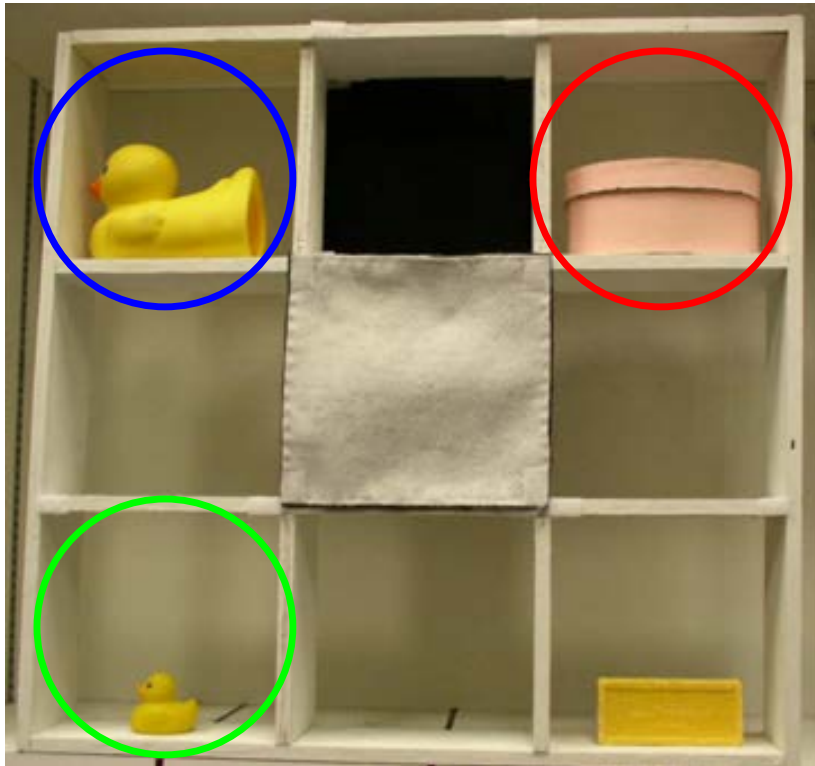
Shared triangle favored immediately over privileged

**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”*

one shared

early



one privileged

early

two shared

late

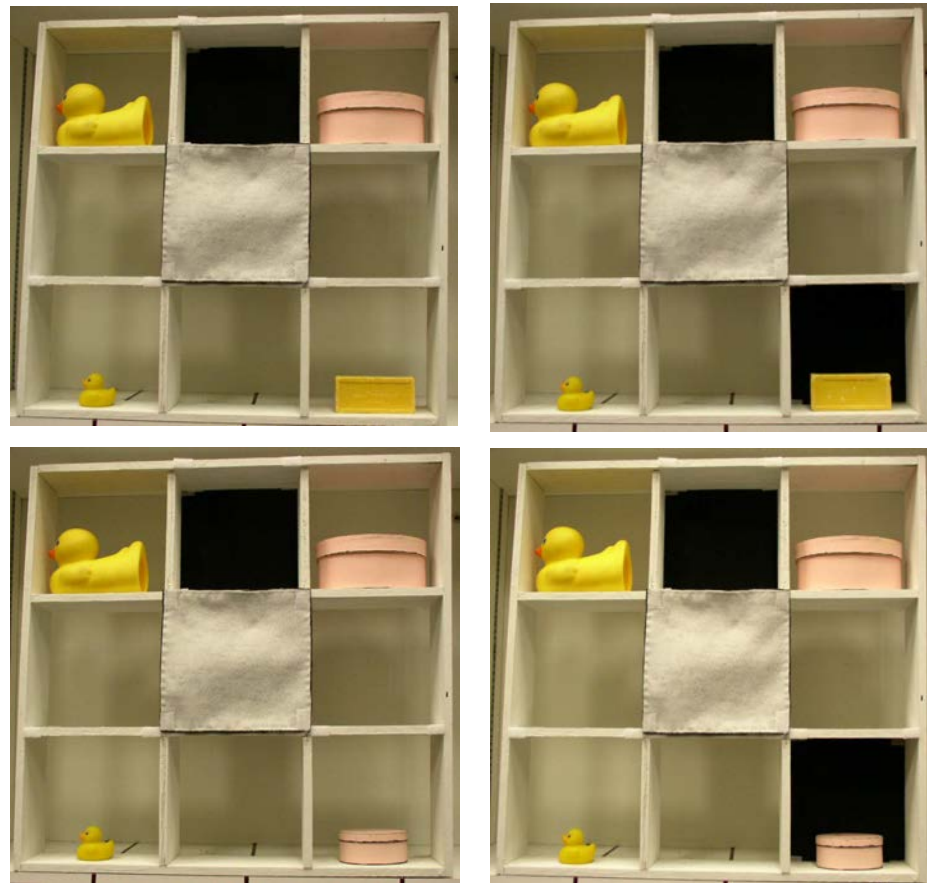


two privileged

early or late?

# 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.

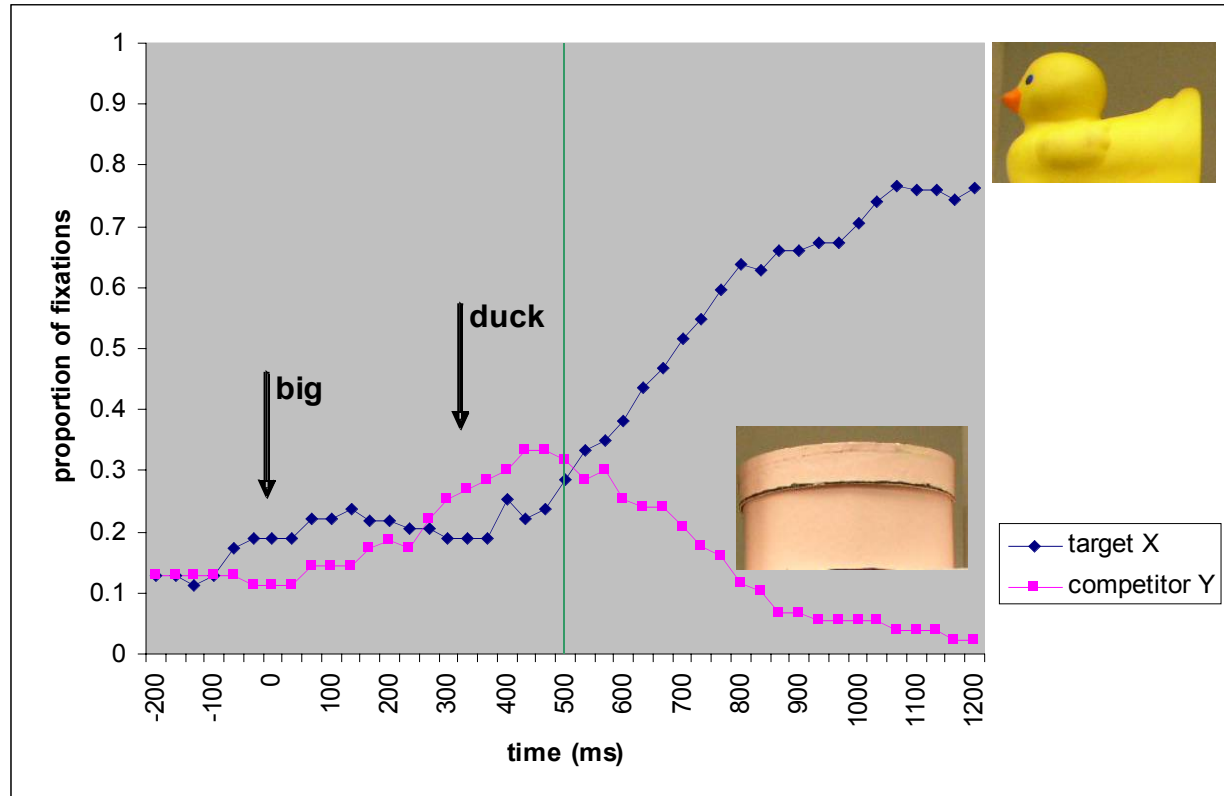
# Methods

- 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



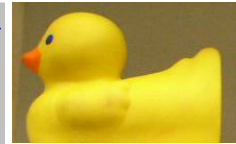
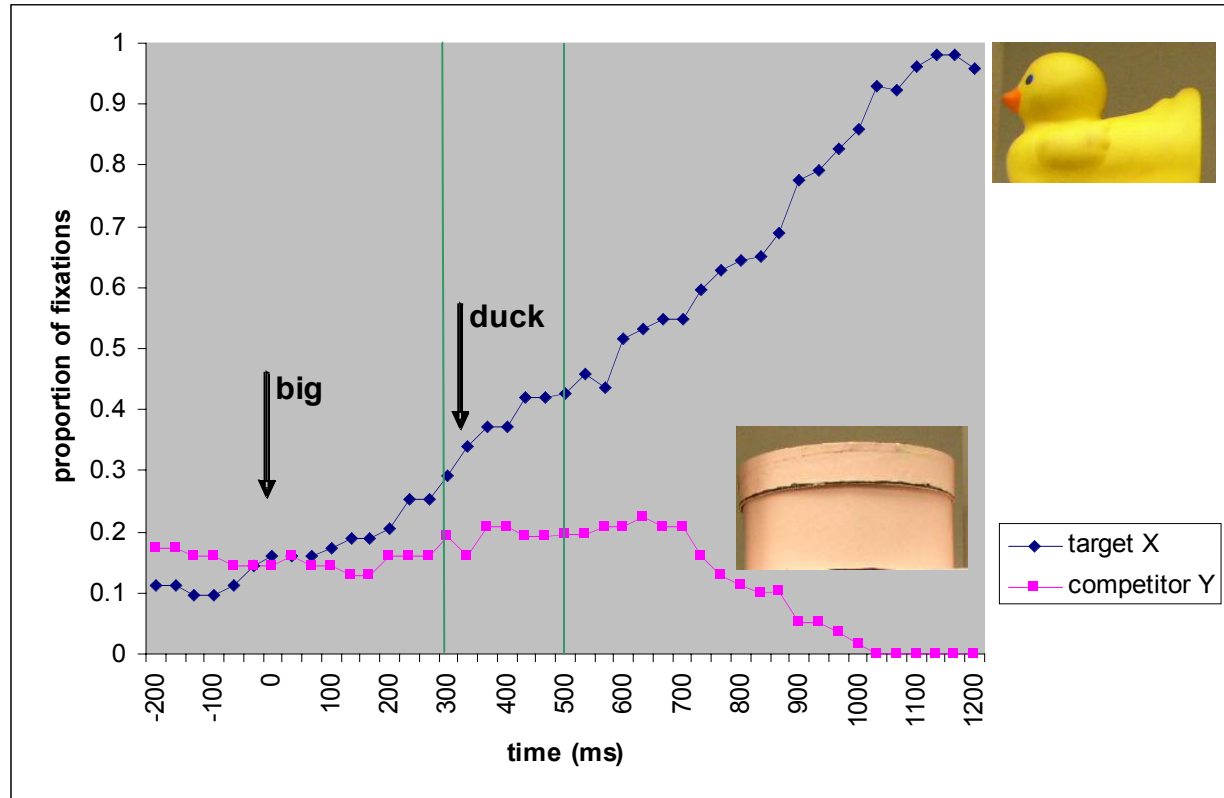
“pick up the *big* duck”

two contrasts



*“pick up the big duck”*

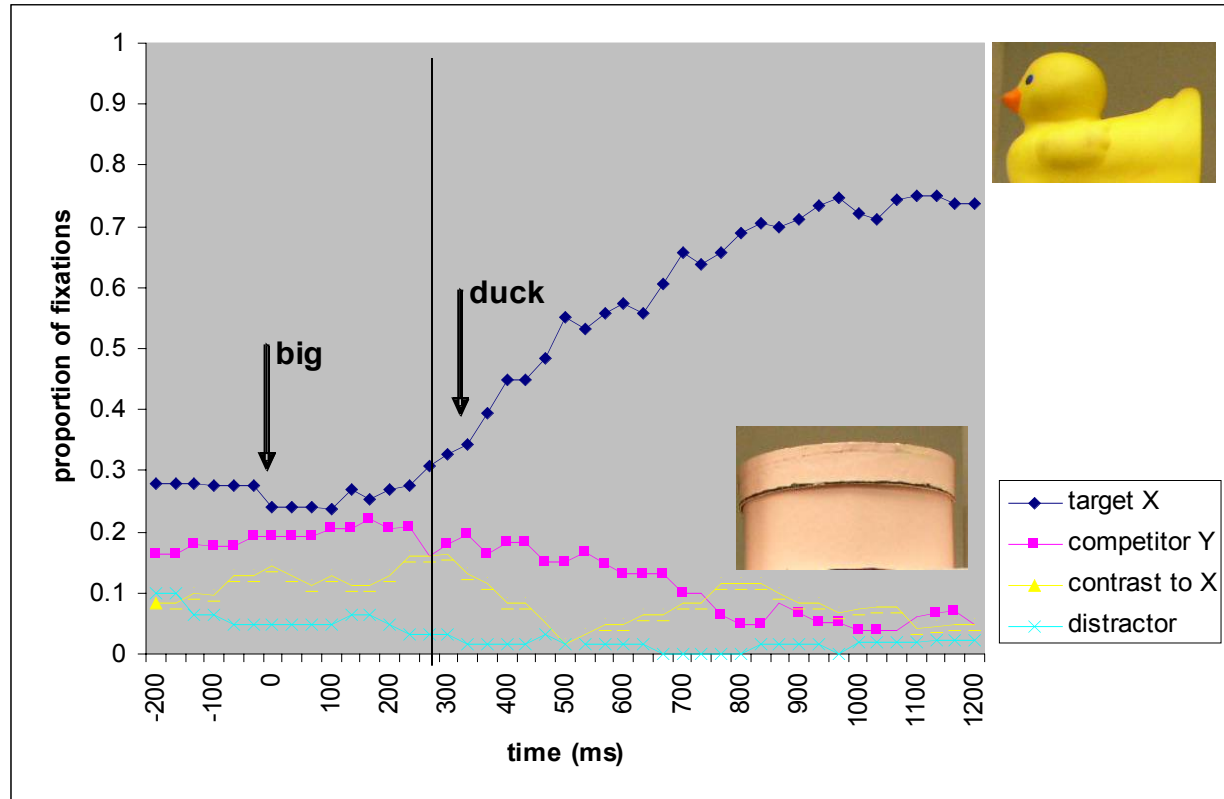
one contrast



—◆— target X  
—■— competitor Y

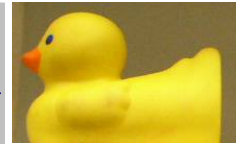
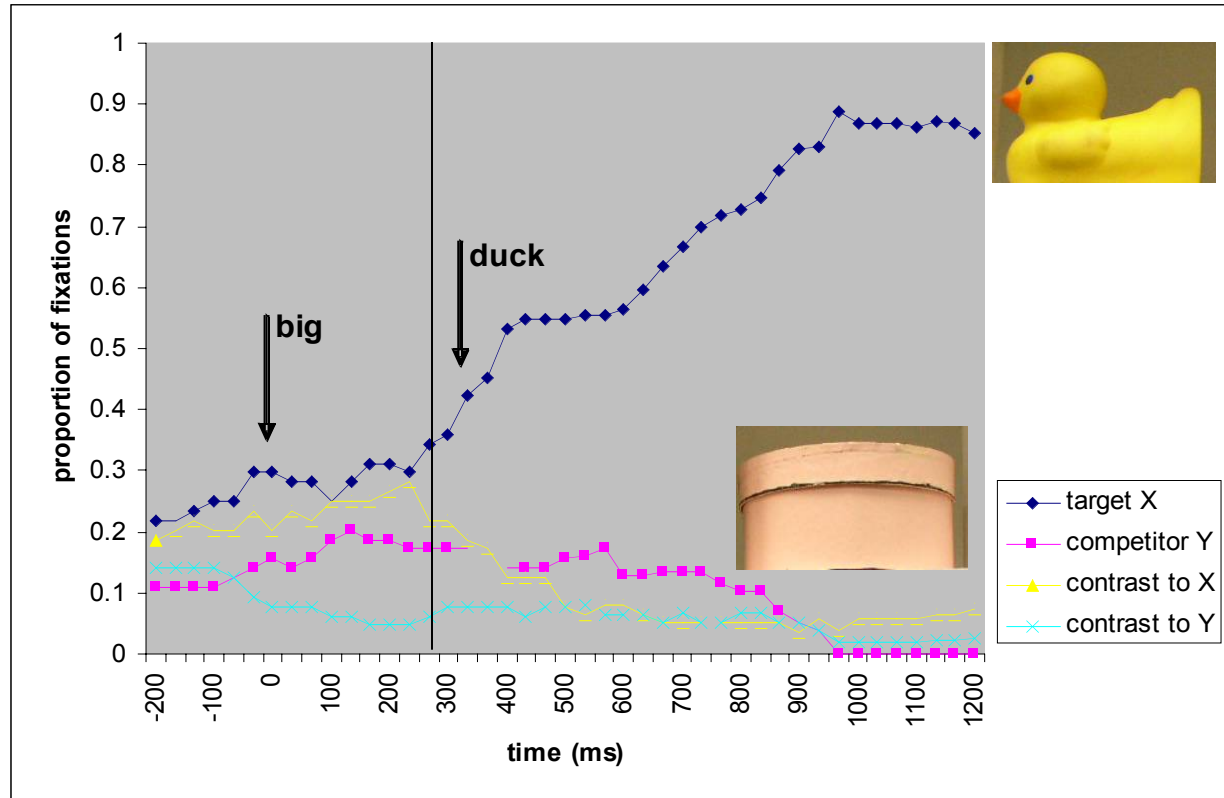
“pick up the *big* duck”

one privileged #



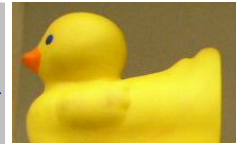
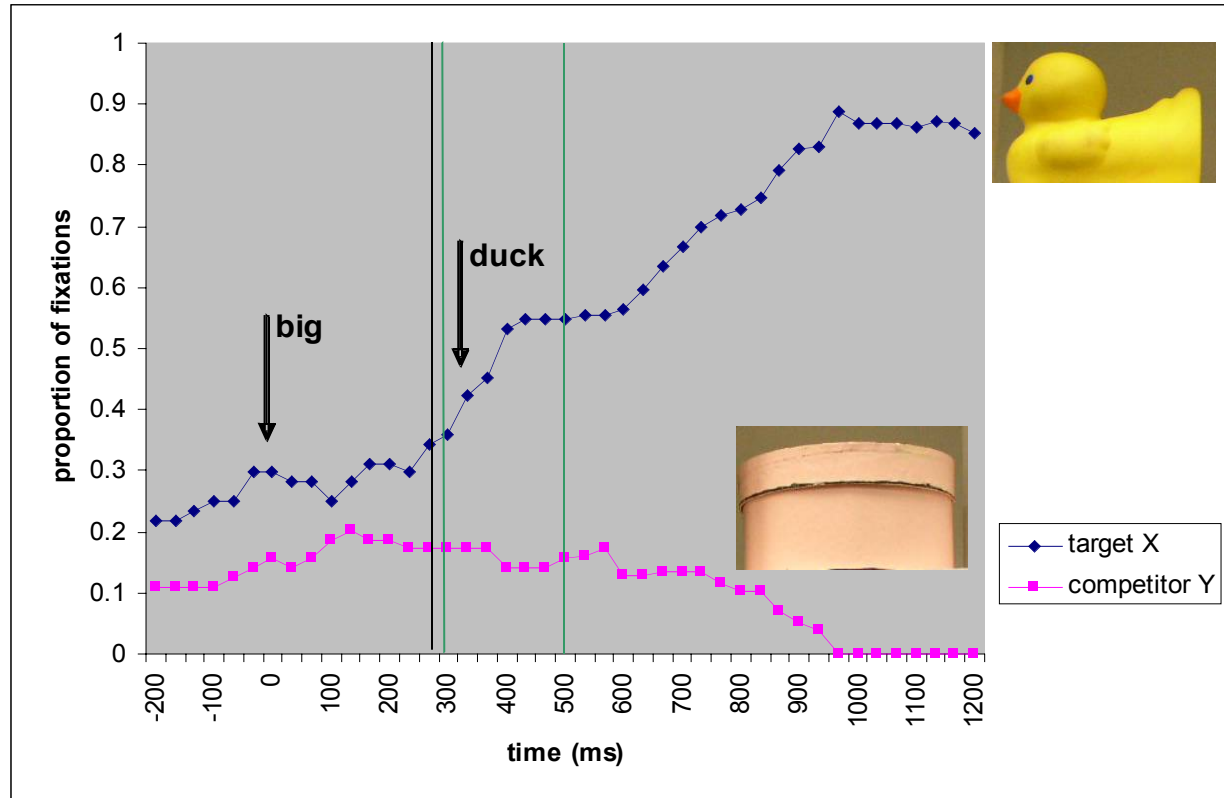
“pick up the *big* duck”

two privileged

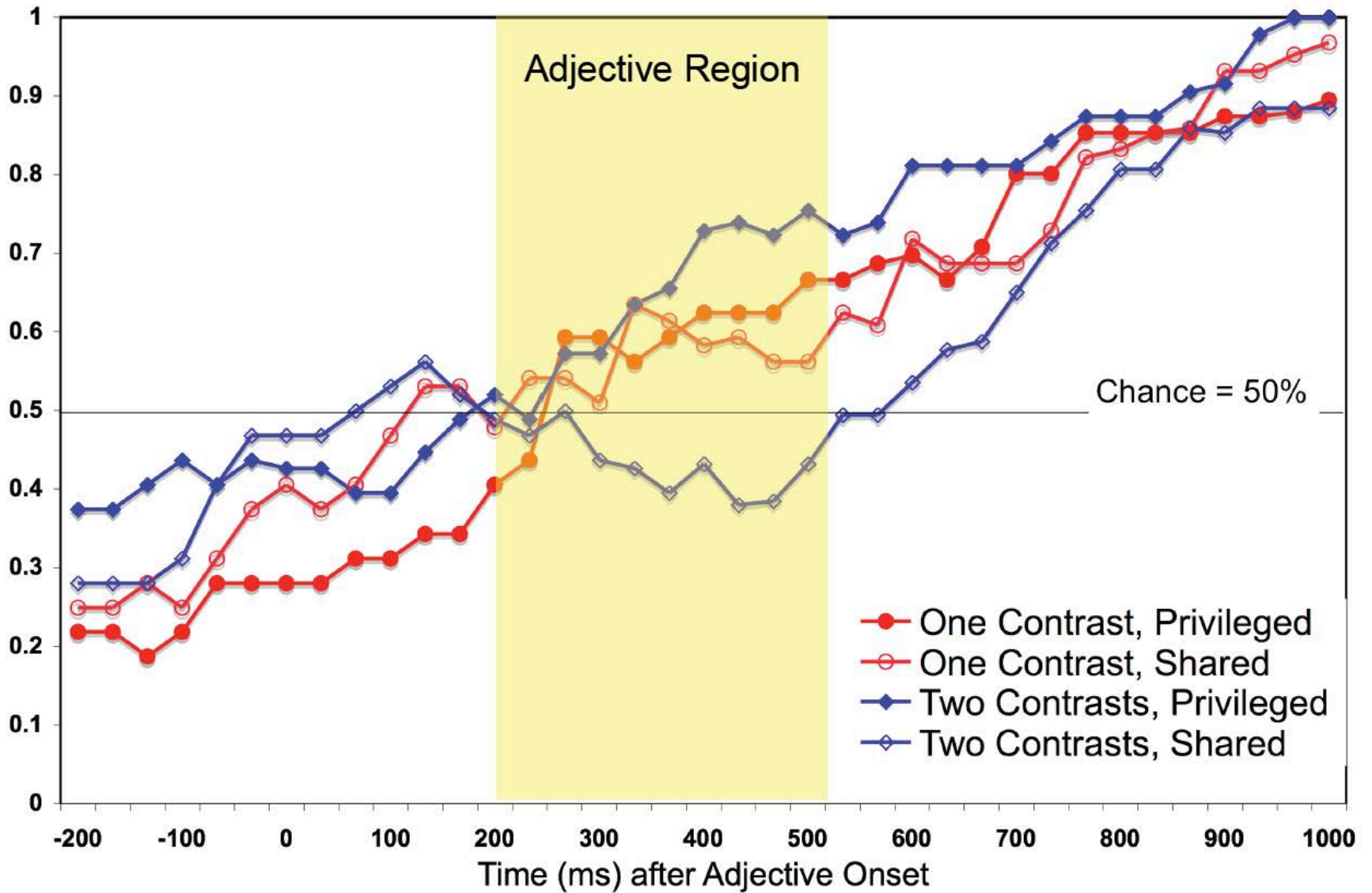


“pick up the *big* duck”

two privileged



# Proportion of Fixations to Target vs. Competitor



# 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



9.59J/24.905J Lab in Psycholinguistics  
Spring 2017

For information about citing these materials or our Terms of Use, visit: <https://ocw.mit.edu/terms>.