24.904
Language Acquisition

Class 23: Presupposition

Semantics and Pragmatics

- **Semantics:** “hardwired”, grammatically derived meaning
- **Pragmatics:** what rational agents do with that hardwired meaning in social situations

  - Pragmatics contributes a lot to meaning; need to understand it to know what semantics is actually responsible for (Grice’s Razor)

  - Danger: need a theory of everything

Different types of inferences

Some of the boys failed the exam again.

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(i) One or more boys failed the exam.

(ii) Failing the exam had happened before.

(iii) Not all of the boys failed.

Different types of inferences

Some of the boys failed the exam again.

(i) One or more boys failed the exam. Asserted content

(ii) Failing the exam had happened before.

(iii) Not all of the boys failed. Implicature

Different types of inferences

Some of the boys failed the exam again.

(i) One or more boys failed the exam. Asserted content

(ii) Failing the exam had happened before. **Presupposition**

(iii) Not all of the boys failed. Implicature

Presupposition

A component of meaning that appears to be distinguishable from ordinary truth-conditional entailments…

Presupposition

…in at least two ways:

1) When a sentence with a presuppositional component is asserted, the presupposition is not thereby put forward as potentially new and worthy of discussion; instead, the presuppositional component is taken to be something that **the speaker is taking for granted**, assuming that it is already agreed upon.

2) When a sentence with a presuppositional component is embedded in a larger structure, more often than not the larger structure **inherits that presuppositional component** (whereas one might have expected the component to be operated on by the embedding construction in the way that simple entailments are)

Examples

(1) It was Sam who broke the printer.

(2) Sue is going to drop out of school again.

A test for what's being taken for granted

- **The Hey, wait a minute! Test** (von Fintel 2008, inspired by Shanon 1976)

(3) A: It was Sam who broke the printer.
B: Hey, wait a minute! I had no idea that the printer was broken.
B': #Hey, wait a minute! I had no idea that Sam did that.

(4) A: Sue is going to drop out of school again.
B: Hey, wait a minute! I had no idea she dropped out of school before.
B': #Hey, wait a minute! I had no idea she was going to do that.

Presupposition inheritance (“projection”)

(5) It wasn’t Sam who broke the printer.

(6) Sue isn’t going to drop out of school again.

Presupposition

in at least two ways:

1) When a sentence with a presuppositional component is asserted, the presupposition is not thereby put forward as potentially new and worthy of discussion; instead, the presuppositional component is taken to be something that **the speaker is taking for granted**, assuming that it is already agreed upon.

   ➡ pragmatic status

2) When a sentence with a presuppositional component is embedded in a larger structure, more often than not the larger structure **inherits that presuppositional component** (whereas one might have expected the component to be operated on by the embedding construction in the way that simple entailments are)

   ➡ semantic behavior

Presupposition triggers

- **Definite descriptions**

  The linguist who discovered presuppositions was a woman.

  It's not true that the linguist who discovered presuppositions was a woman.

  Was the linguist who discovered presuppositions a woman?

Presupposition triggers

- **Factive verbs**

Dana is aware that Sue is a genius.

It’s not true that Dana is aware that Sue is a genius.

Is Dana aware that Sue is a genius?

Presupposition triggers

- **Additive particles (too, again)**

  Sue is going to drop out of school again.

  It's not true that Sue is going to drop out of school again.

  Is Sue going to drop out of school again?

  SUE is going to drop out of school, too.

  It's not true that SUE is going to drop out of school, too.

  Is SUE going to drop out of school, too?

Presupposition triggers

- **Change-of-phase predicates**

John has stopped smoking.

It’s not true that John has stopped smoking.

Has John stopped smoking?

Research questions

- **Questions of Description**

(1) Give a catalog of presupposition triggers and what they presuppose.

(2) Describe the facts of presupposition inheritance.

Research questions

- **Questions of Explanation**

  (1) What is the nature of the presuppositional component of meaning?

  (2) What is the source of the special informational status?

  (3) Why does it interact differently with its linguistic environment?

  (4) Is it a lexical “accident” that a particular presupposition trigger triggers the presupposition it triggers?

A (somewhat) standard analysis

(i) **Semantics:** the semantic presupposition of a sentence S is a proposition that has to be true in order for S to be either true or false

(ii) **Pragmatics:** the semantic presuppositions of a sentence has to be old information not just for the speaker, but also the listener.

- **Key question:** why does (i) lead to (ii)?

Presuppositions: the semantics

Expanding our bivalent worldview:

- In a given context/situation, “The linguist who discovered presuppositions is a woman” gets assigned:
  - **1** if there is a linguist who discovered presuppositions and she is a woman.
  - **0** if there is a linguist who discovered presuppositions and she is not a woman.
  - **N** if if there is not a linguist who discovered presuppositions

NB: dangers of expressibility

- The transition from bivalent to trivalent semantics aggravates explanatoriness issues

  - there are multiple logically possible ways to expand a given bivalent truth-table into a trivalent one

  - if there is one that is more fitting for natural language, we want to know why that is

A	B	A & B
1	1	1
1	0	0
0	1	0
0	0	0

A	B	A & B
1	1	1
1	0	0
0	1	0
0	0	0
1	N	?
N	1	?
N	N	?

Presuppositions: the pragmatics

- Bob Stalnaker's expansion of the Gricean program

- Utterances are made against a body of background information the participants are already assuming, the conversational common ground

- In making an assertion, the speaker is proposing to update the common ground by adding the information conveyed to it

  - **Use condition on assertion:** don't assert something your listener already knows!

- If the listener accepts, that information is added and thus becomes part of the established background information

Presuppositions: the bridge

- “Bridging” between semantics and pragmatics:
  - A sentence ϕ can only be used to update a common ground if it will never yield for ϕ the truth-value N in that common ground

Presuppositions: the bridge

Stalnaker on the bridge in 1973:

- “Since the whole point of expressing a proposition is to divide the relevant set of alternative possible situations into two parts, **to distinguish those in which the proposition is true from those in which the proposition is false**, it would obviously be inappropriate to use a sentence which failed to do this. Thus, that a proposition is presupposed by a sentence in the technical semantic sense provides a reason for requiring that it be presupposed in the pragmatic sense whenever the sentence is used.”

Presuppositions: the bridge

- In order for an update to go through, the listener should be able to evaluate— deterministically— whether or not that information is true in a given state of affairs.

- Given the partial semantics of presuppositional sentences, they can be evaluated as true/false against some state of affairs only when their presuppositions are true in that state of affairs.

- **Use condition on presupposition:** Don’t presuppose something your listener doesn't already know!

The emerging picture

- Units of linguistic meaning as a tuple:
  <form, <asserted content, presupposition>>
  - For some such units, the presupposition component is null (e.g. *a*)
  - For others, the asserted meaning component is null (e.g. *too*)
  - Yet others have contentful asserted and presuppositional components (e.g. *the, stop*)

The emerging picture

- For each primitive unit of her language, the child has to identify its asserted content (if any) and also its presuppositions (if any)

Hard learning task

Why identifying presuppositions might be hard:

- Background information, so necessarily **non-salient** and **not attended to** by the speaker

E1

E2

Billy jumped again.

Billy jumped twice.

Public domain image courtesy of Alabama Extension on Flickr.

Early?

- On the one hand, we find early and adult-like use of certain presuppositional expressions

- Words like *too, again, more* are among children's earliest vocabulary items (CDI; Fenson, 2007, Wordbank; Frank et al. 2016)

Late?

- At the same time, we find fairly robust errors with certain presuppositional items

- Children up to age 6 overuse *the* in situations where a unique referent is not known to the listener (and hence, require *a*)

Issue

- We can’t tell actually from production that children know (or fail to know) the presuppositional meanings of these words *qua* presupposition

Aravind et al. 2022

- Investigate 4-to-6-year-olds' knowledge of presuppositions in comprehension

- "early" (*too*) and "late" (*the*) triggers

Use conditions as a probe

- Presuppositions and assertions are governed by different conversational rules

- These rules arise in part due to differences in how the two types of content are encoded in the semantics

- If children can be shown to be sensitive to these conversation rules, we can also conclude that they know the *semantic* distinction between presupposed and asserted content of sentences

Paradigm

"Who is the listener" Task

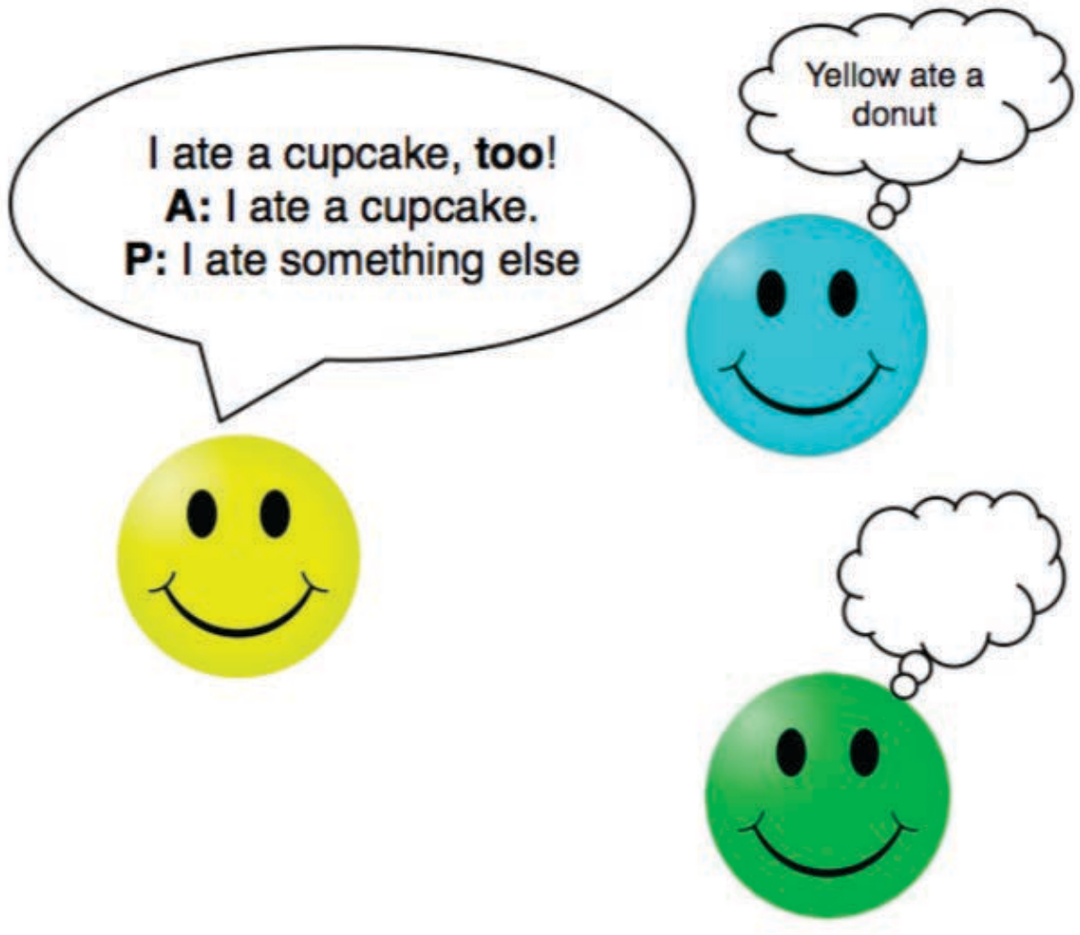
- Participants rely on properties of an asserted sentence to identify the intended listener

- Forced choice between two potential listeners

- Distinguishing feature: their information-states with regard to some critical piece of information

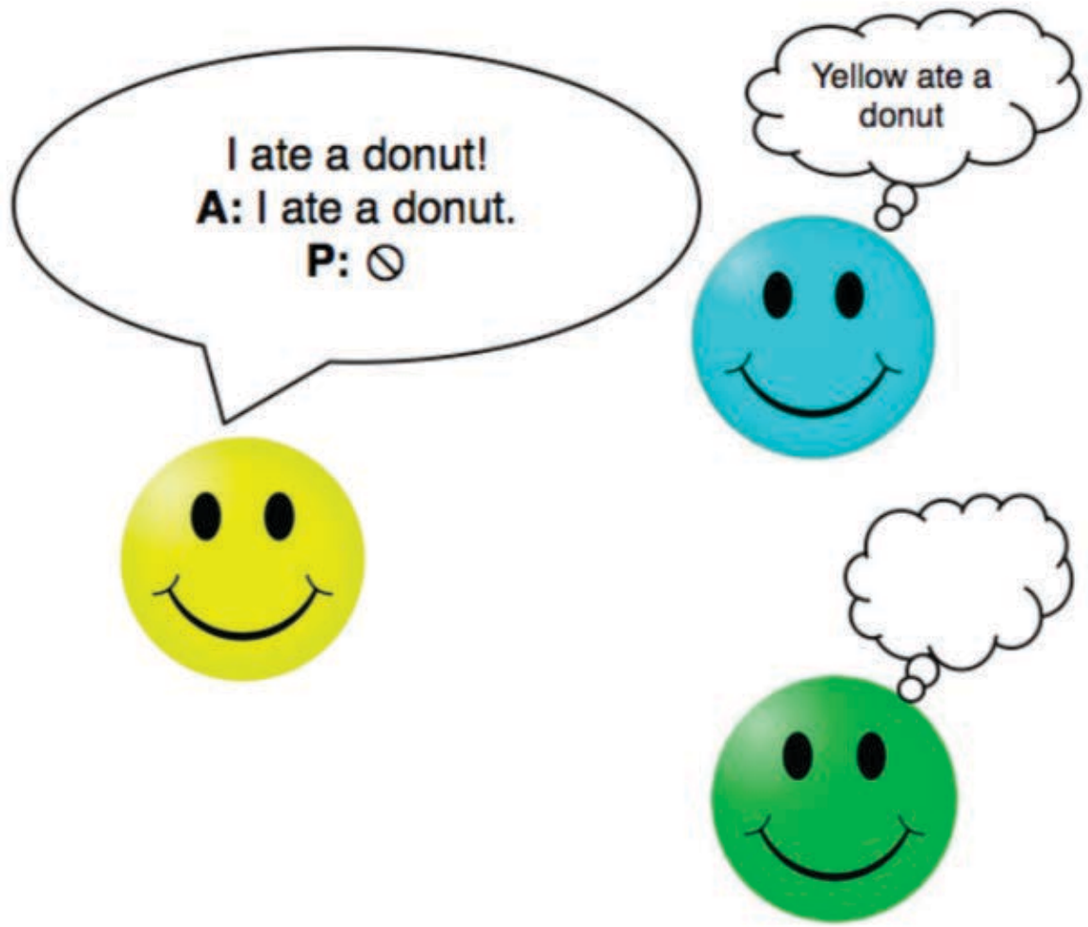
A schematic illustration

Presupposition Condition



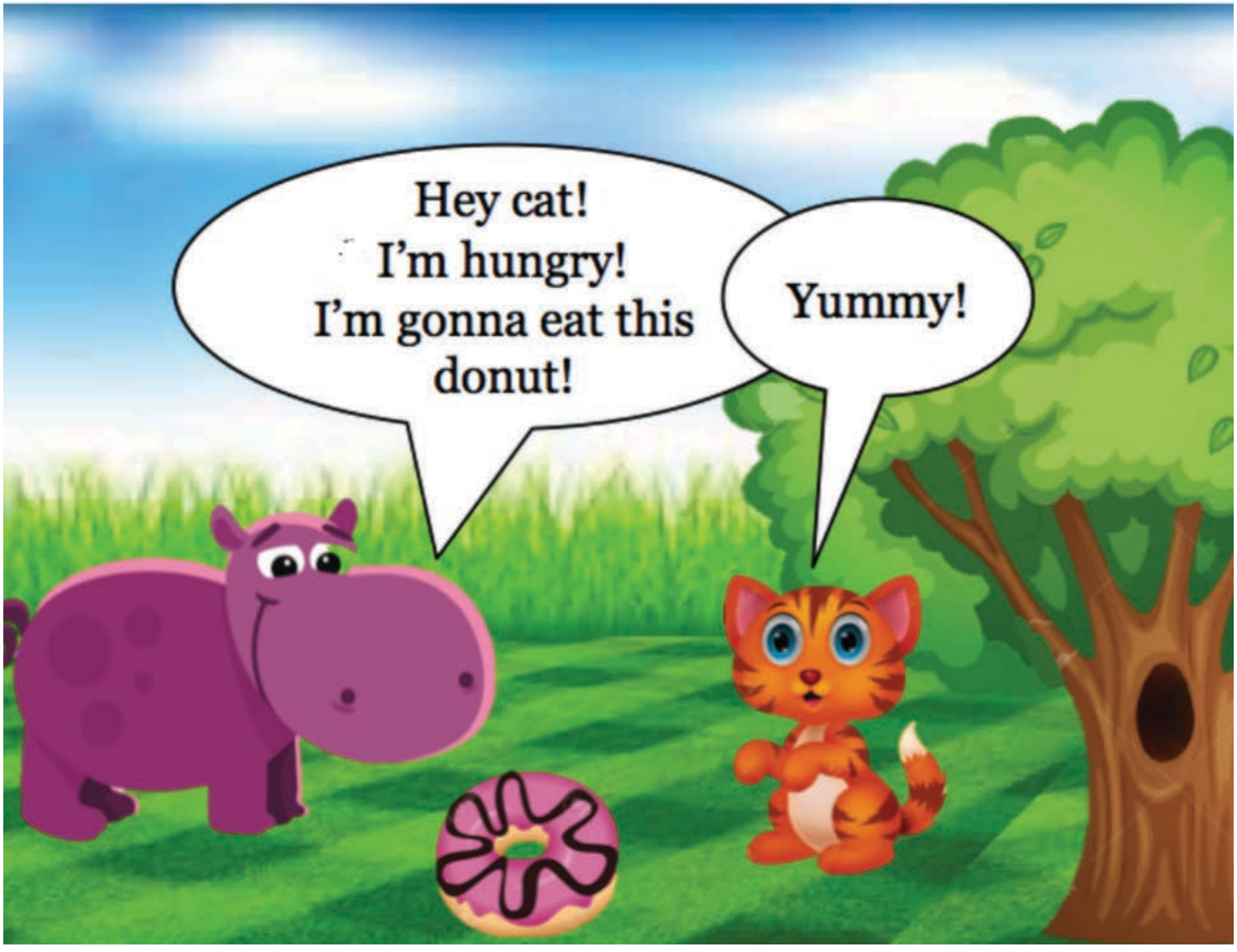
A schematic illustration

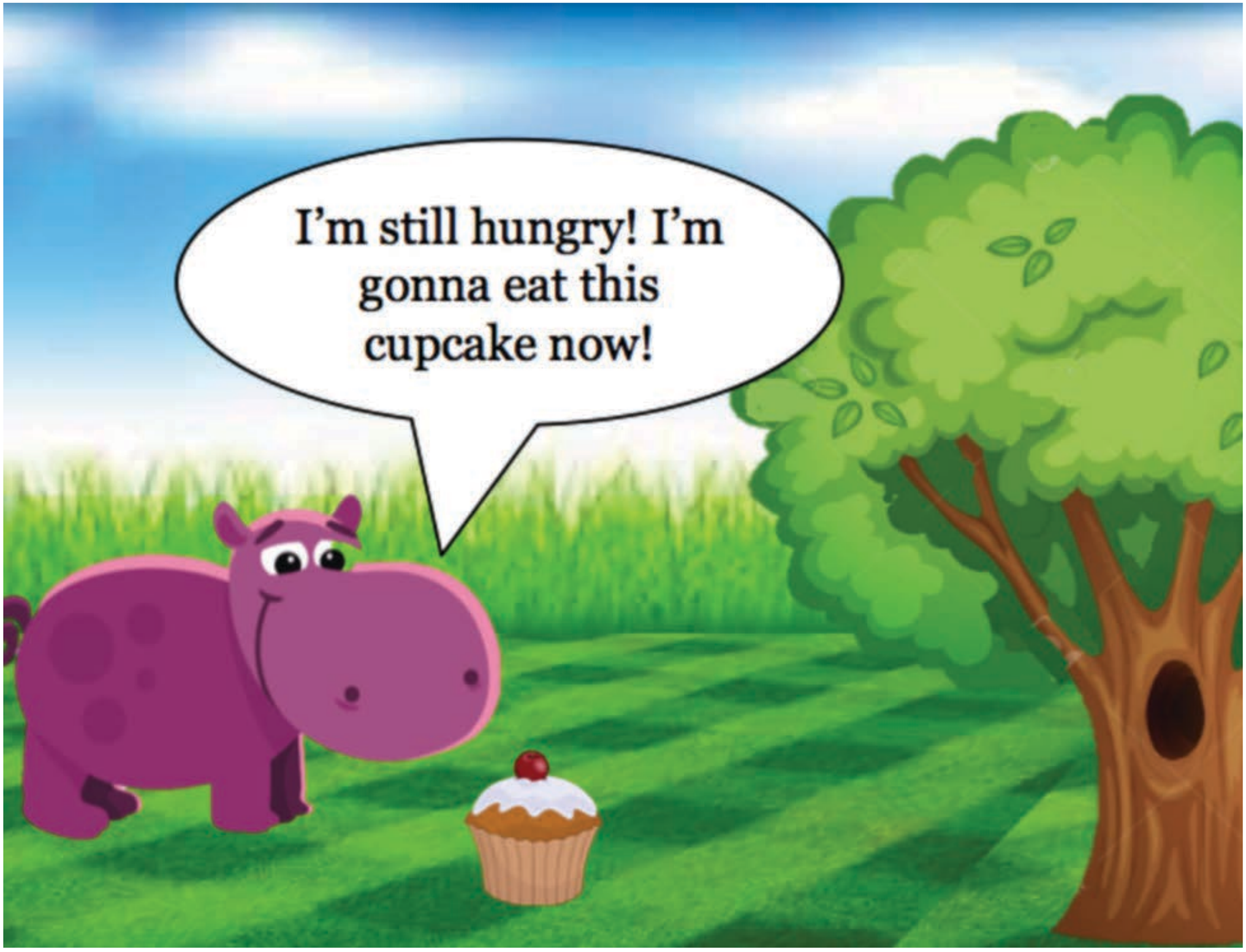
Assertion Condition



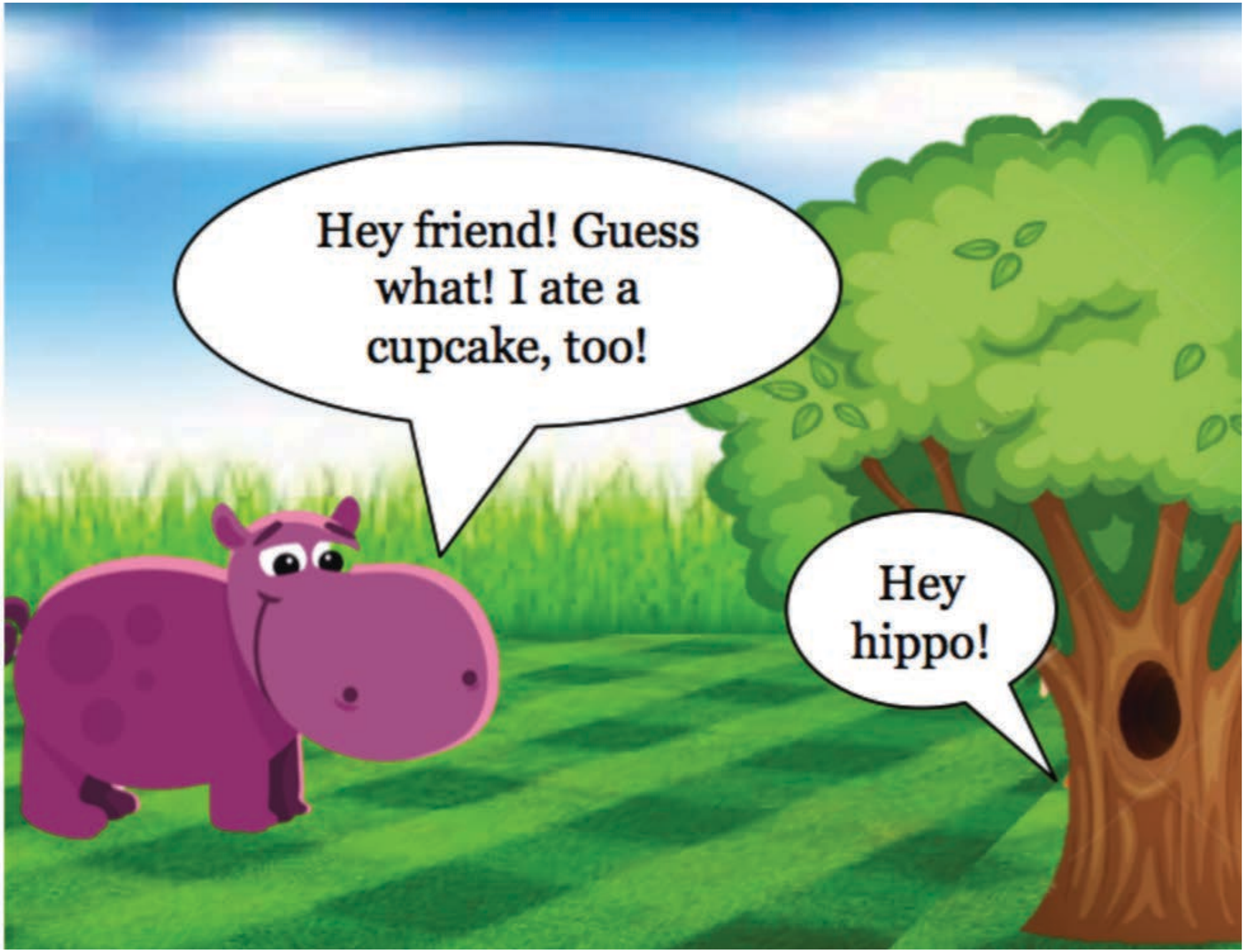
Experiment 1: *too*

- 36 children ages 4-to-6 (Mean Age = 5;2)
- 37 adults
- "Game" in which the child figures out the identity of an occluded character based on what was said to them
- Age-appropriate variants of similar scenarios for adults

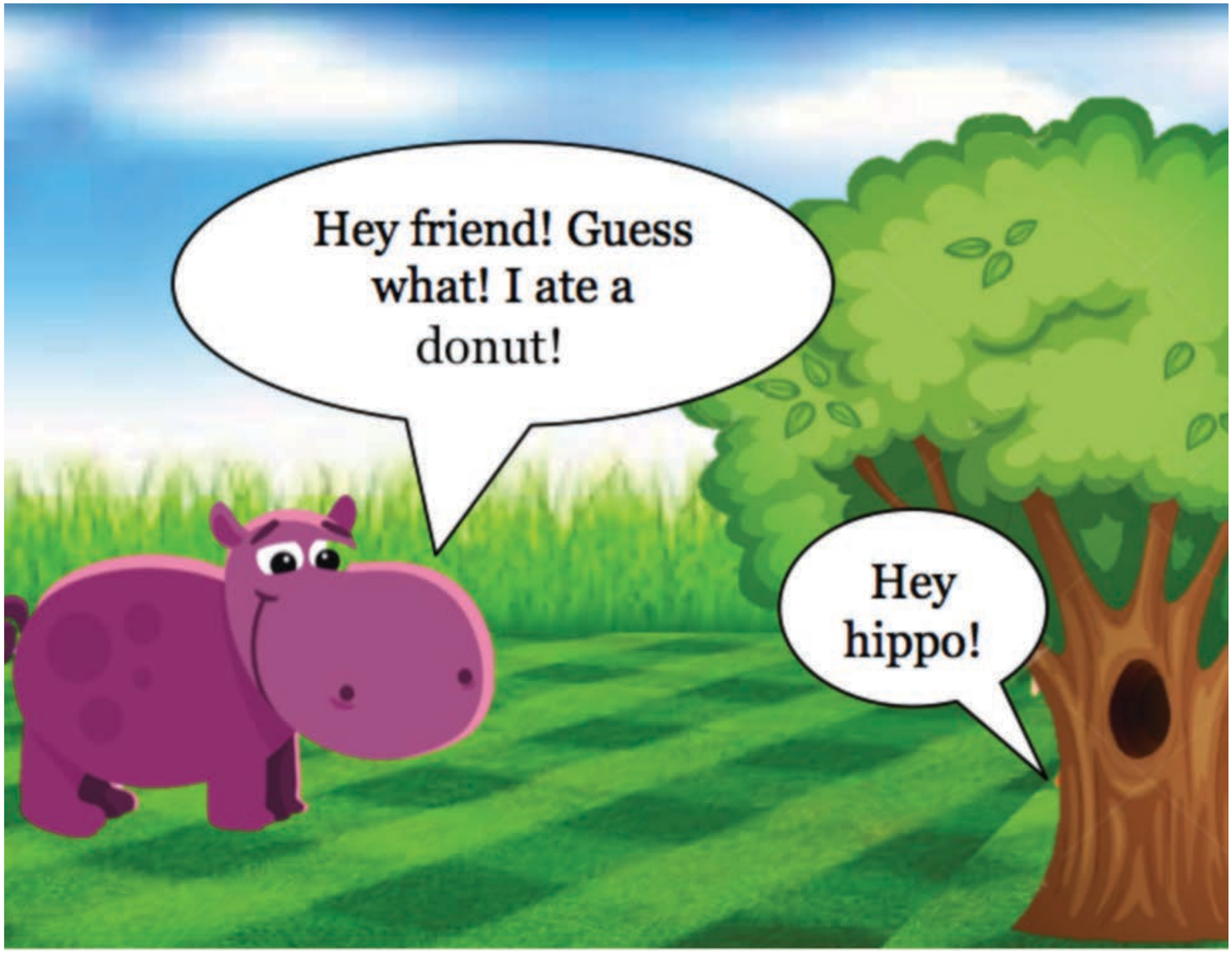

Hey cat!
I'm hungry!
I'm gonna eat this
donut!
Yummy!


I'm still hungry! I'm gonna eat this cupcake now!

Presupposition Condition



Assertion Condition

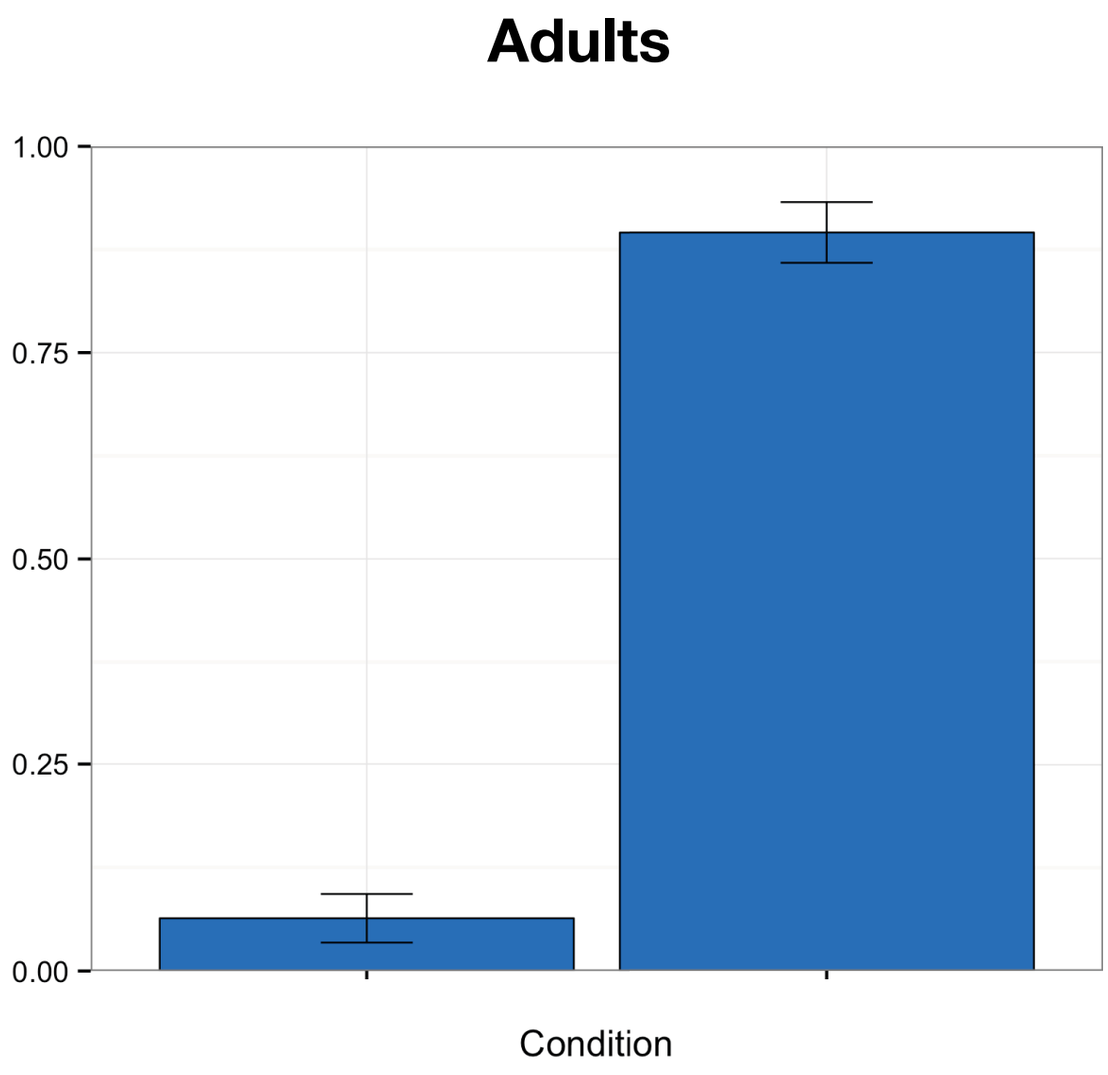


Expectations

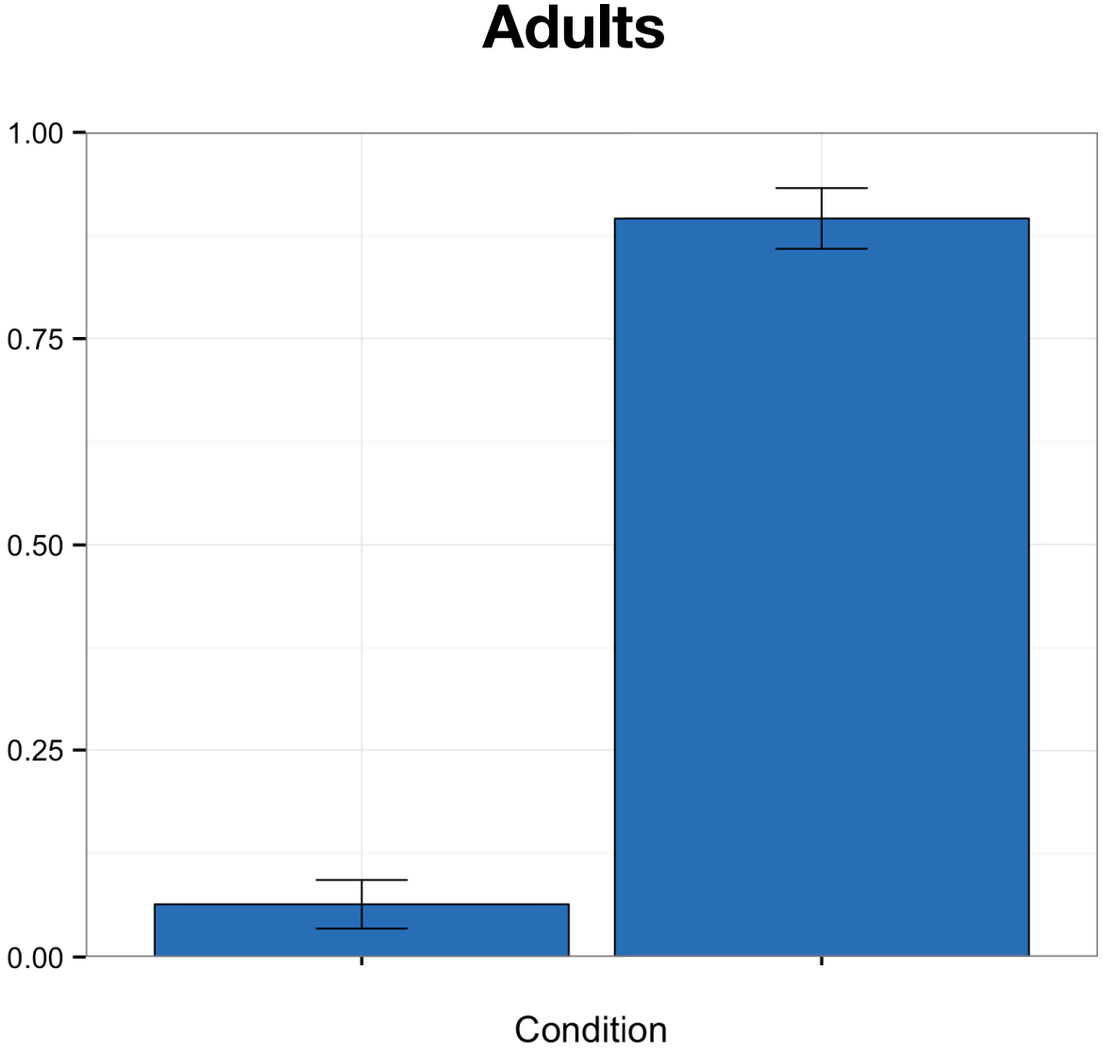
- In the presupposition condition, the hippo utters a sentence with the presupposition that something else was eaten
  ⇒ Listener should be the character who was there earlier

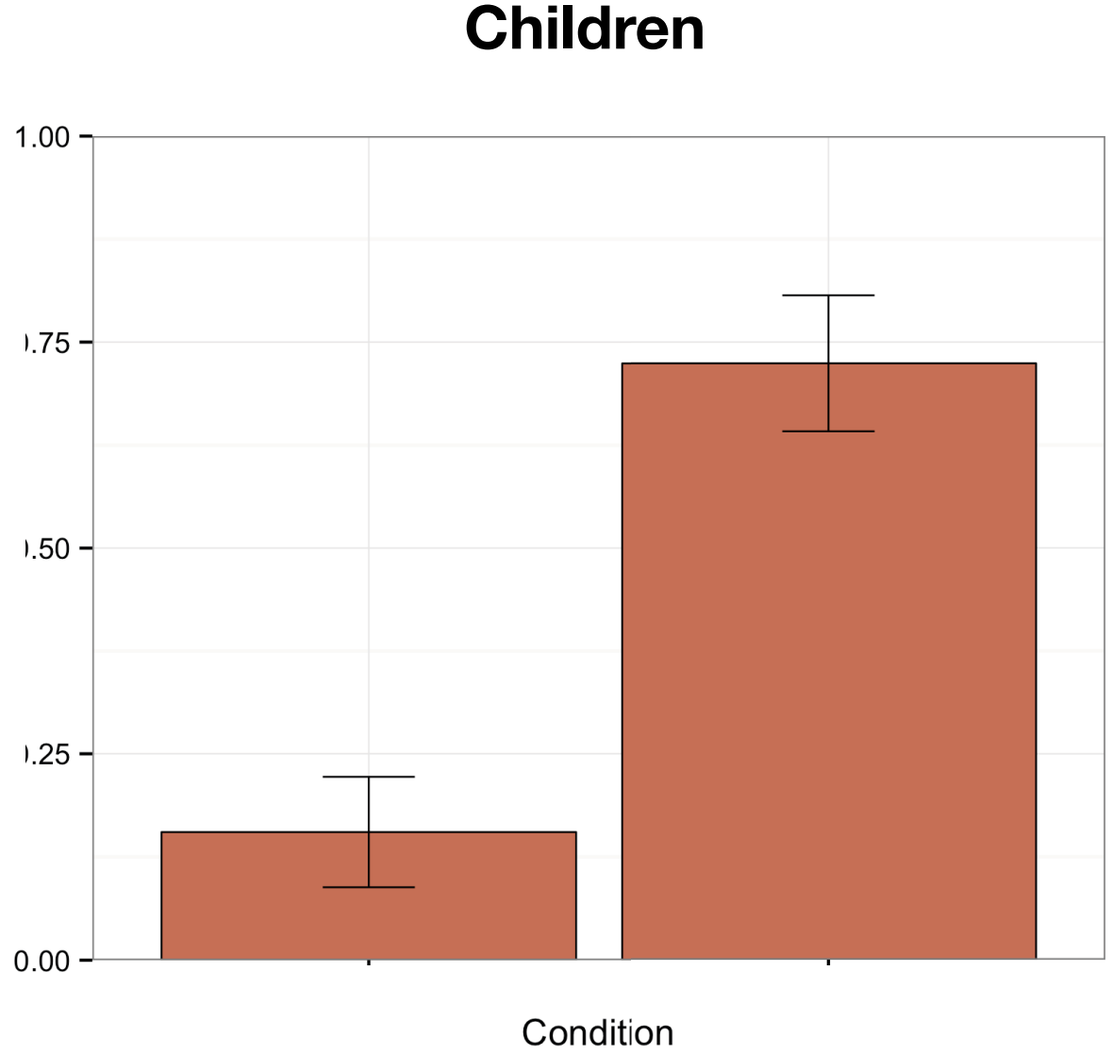
- In the assertion condition, the hippo utters a sentence with the asserted content that he ate a donut
  ⇒ Listener should NOT be the character who was there earlier

Results

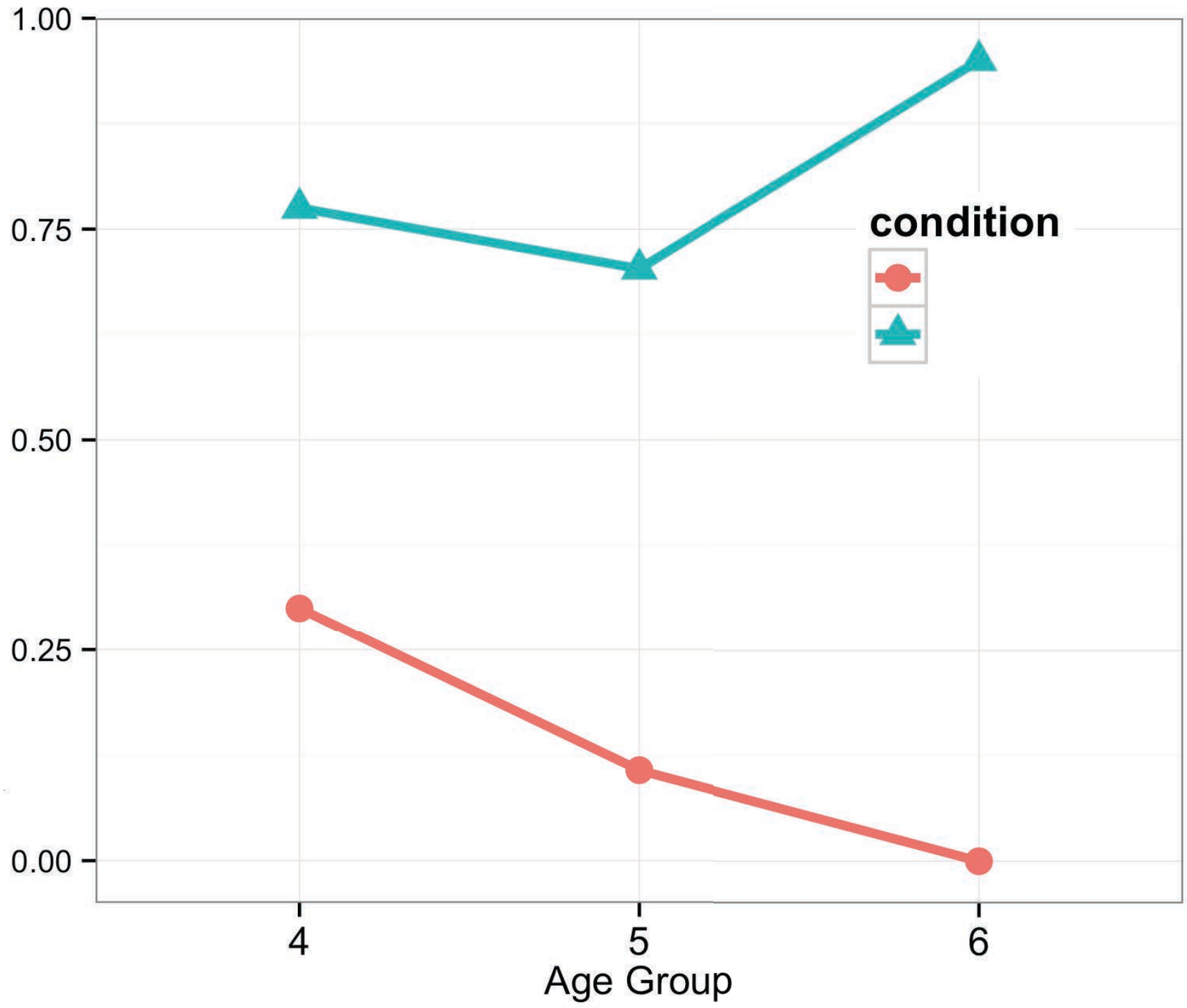


Results


Adults
1.00
0.75
0.50
0.25
0.00
Condition


Children
1.00
.75
.50
.25
0.00
Condition

Results



Key findings

Both children and adults:

- Showed a bias towards the listener who already knew the presuppositions of an uttered sentence

- Showed a bias towards the listener who didn’t already know the asserted content of an uttered sentence

What kids can do

4-year-olds:

- Keep track of the conversational common ground
- Understand what it must look like in order to assert something
- Understand what it must look like in order to presuppose something with *too*

Experiment 2

What about *the*?

- Apparent misuse by children till late preschool years

Experiment 2

- Separate group of 36 children ages 4-to-6 (Mean Age=5;1)

- 30 adult controls

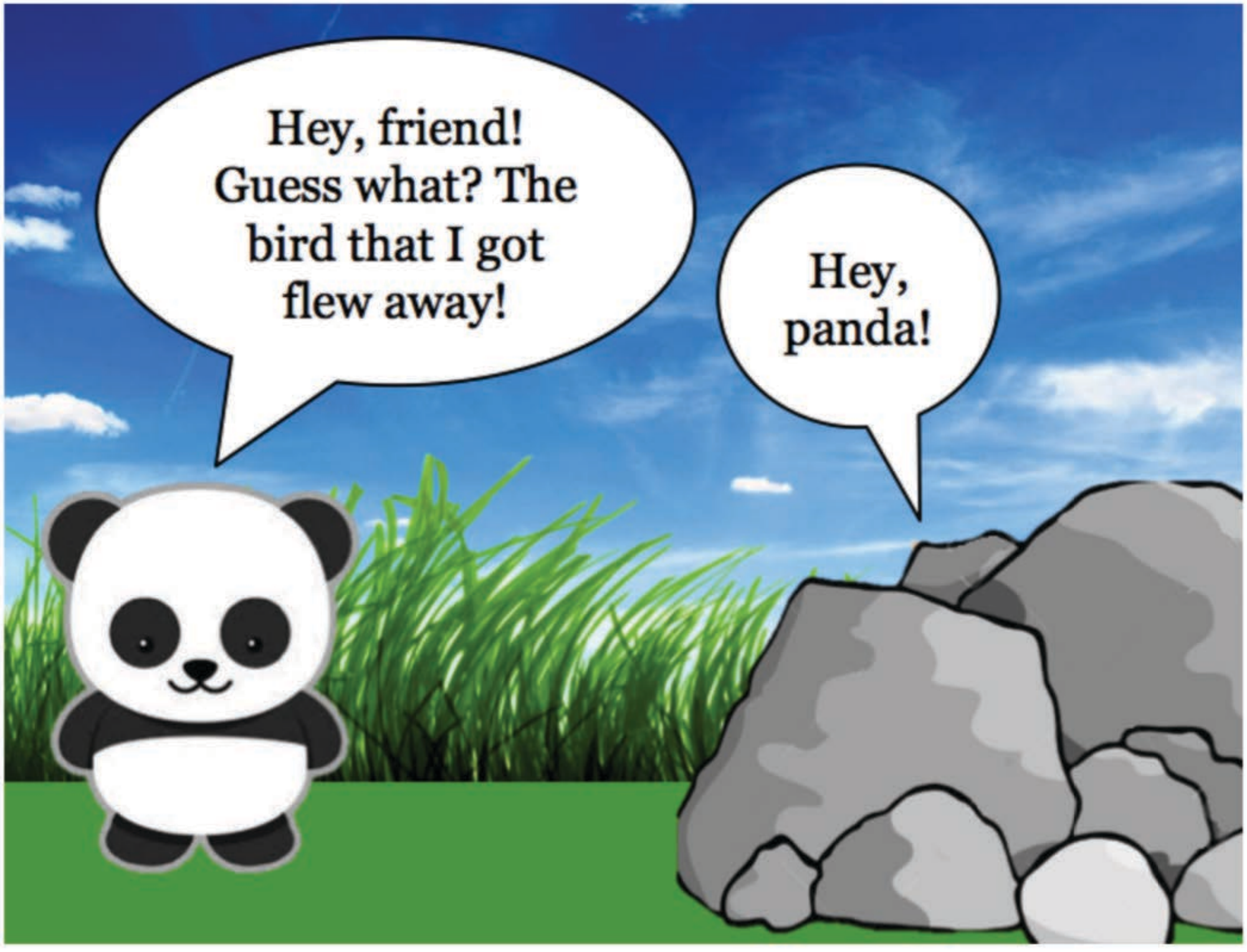
- Same paradigm for both groups, with slightly modified stories


Let's go to the animal shelter!
Ok!

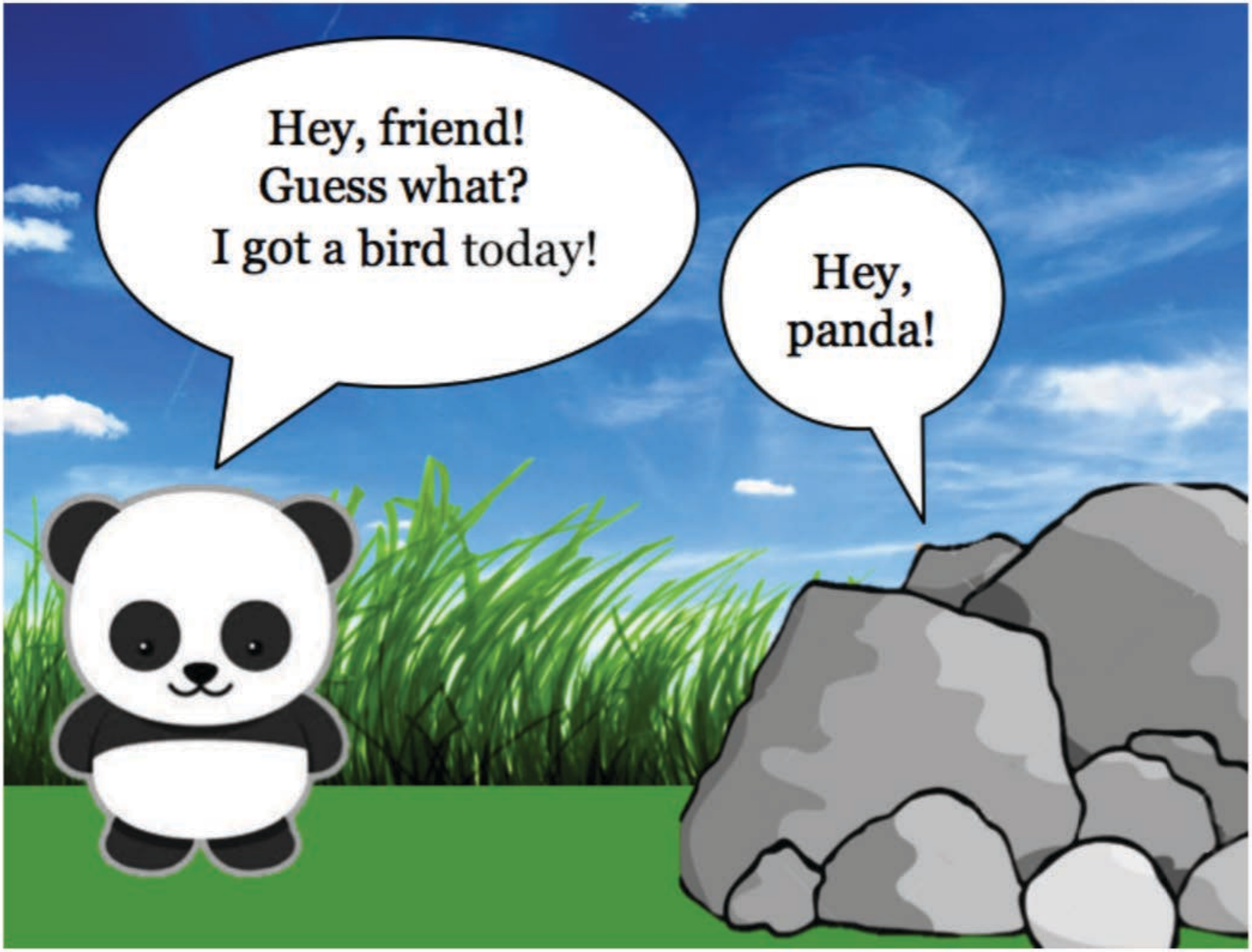

ANIMAL
SHELTER


ANIMAL
SHELTER
26

Presupposition Condition



Assertion Condition



Expectations

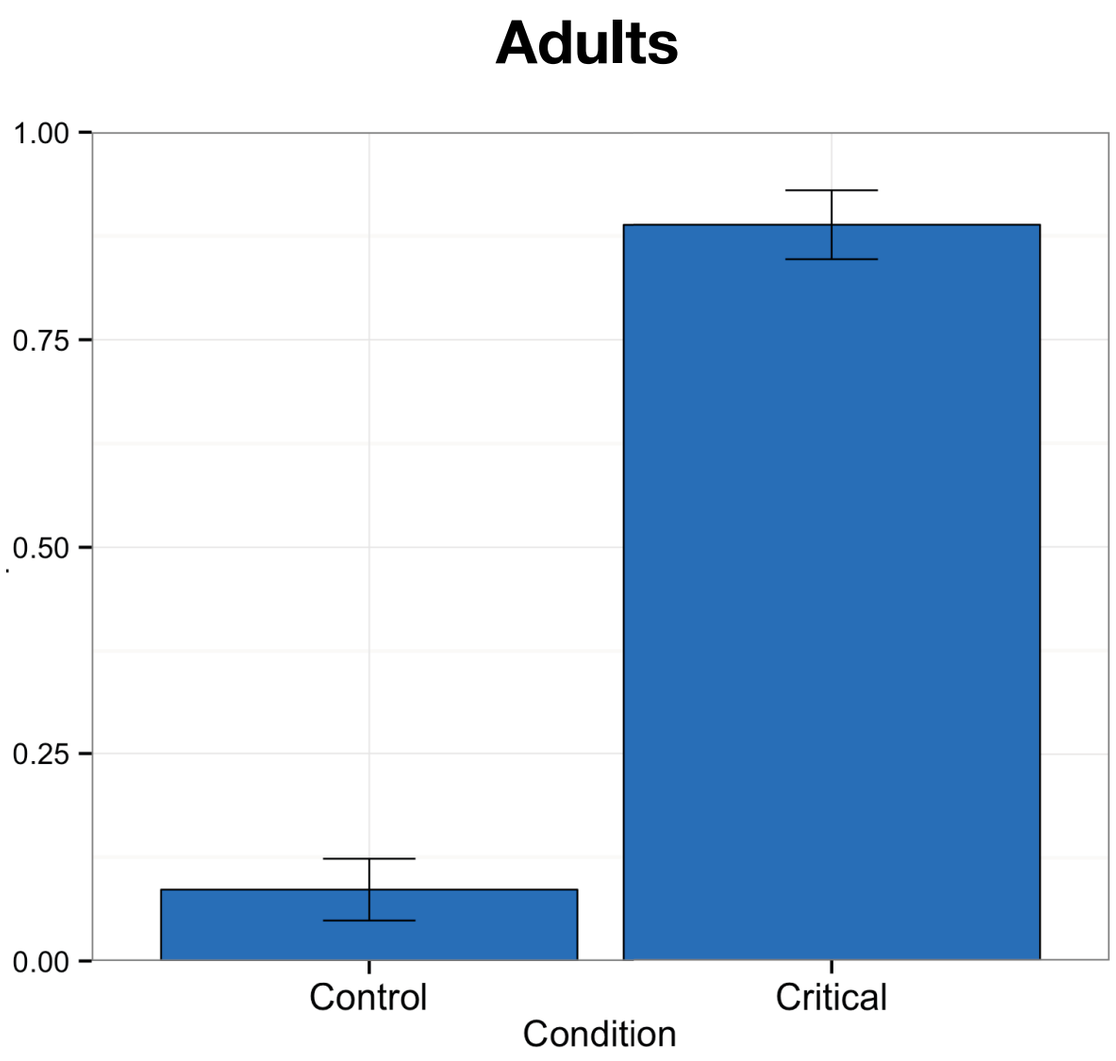
- Possibility 1: Experiment 2 = Experiment 1

  ➡ Would tell us that not only do children know the presuppositions of *the*, they generalize the relevant pragmatic rules across presuppositional expressions

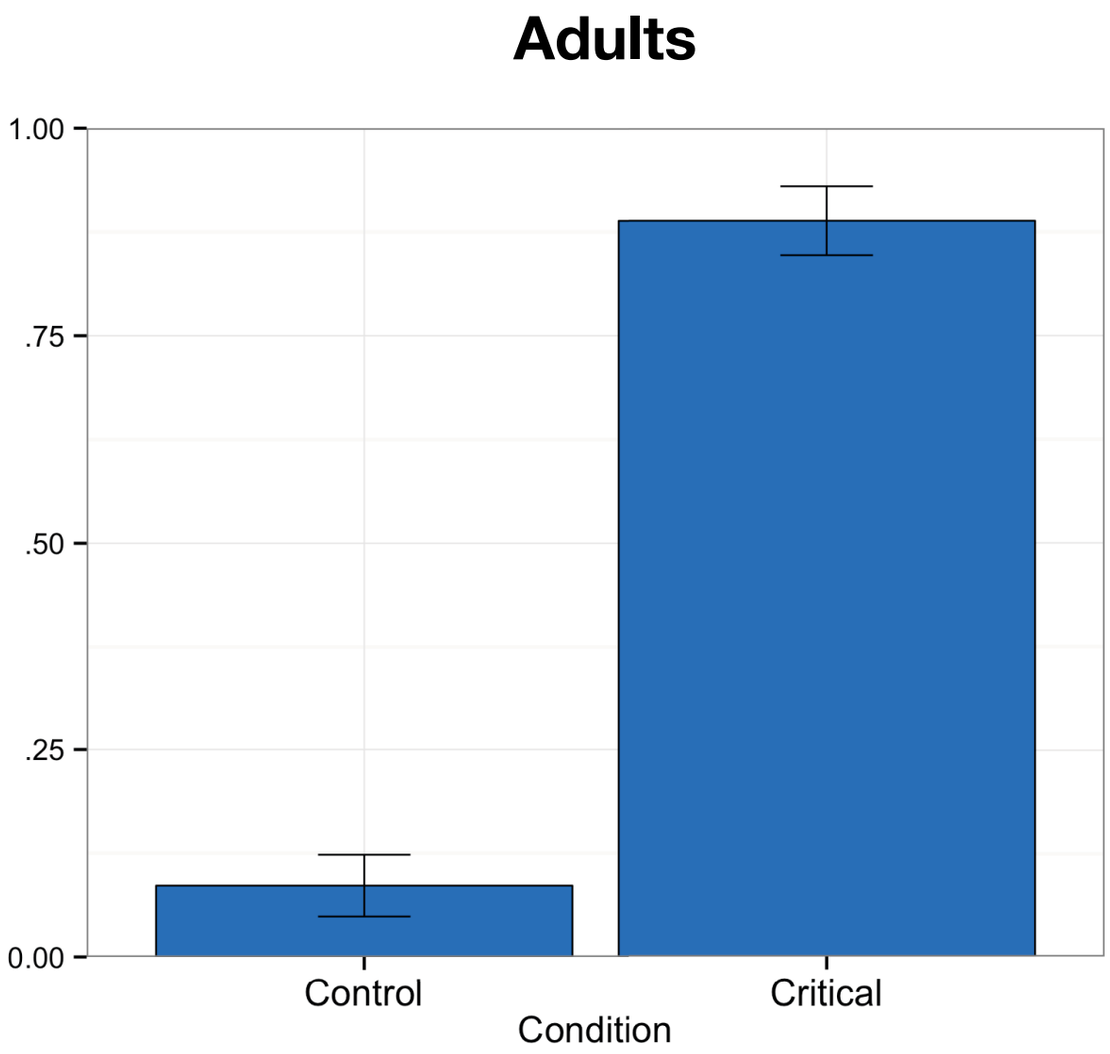
- Possibility 2: Experiment 2 < Experiment 1

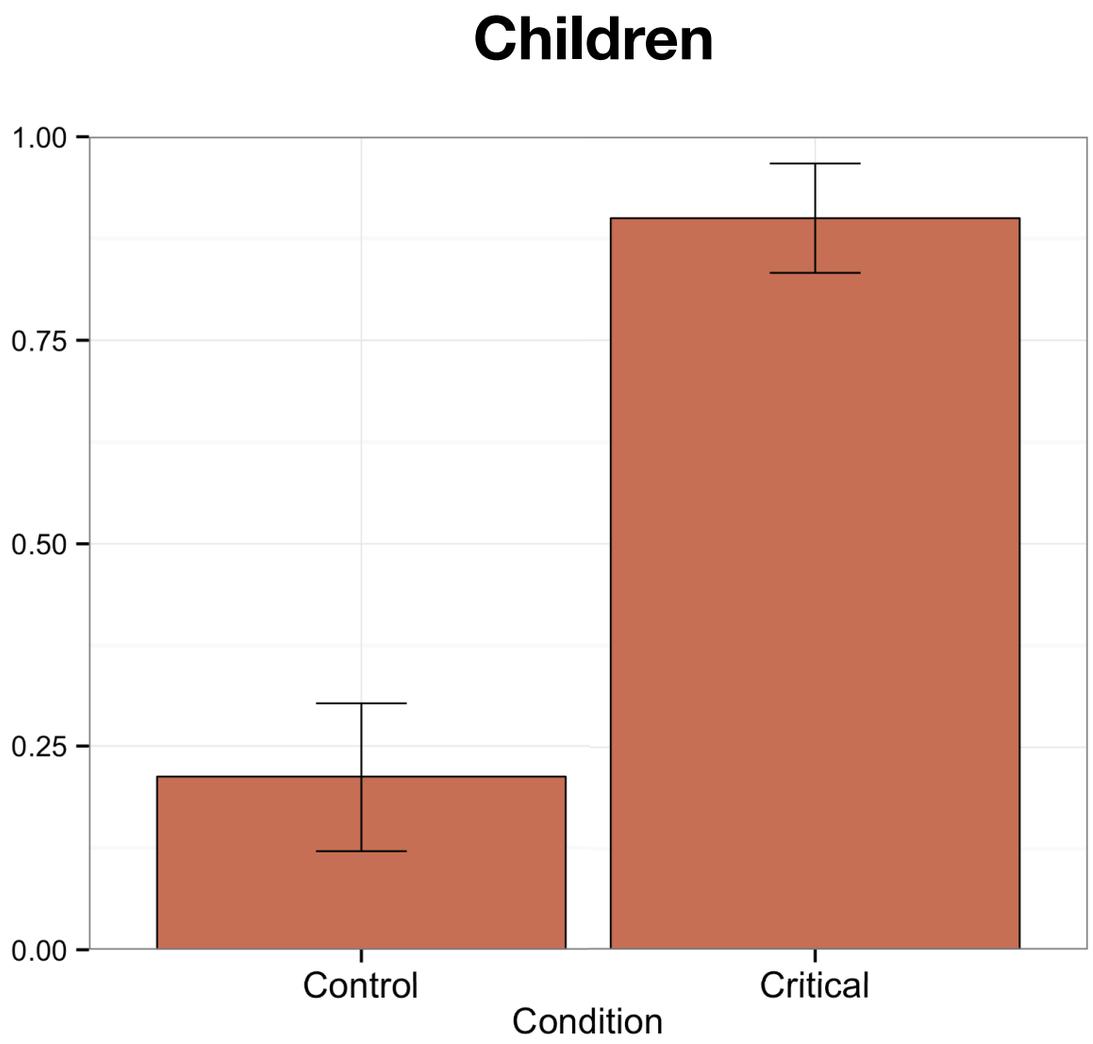
  ➡ Would point to non-adult semantics, pragmatics or both with *the*

Results

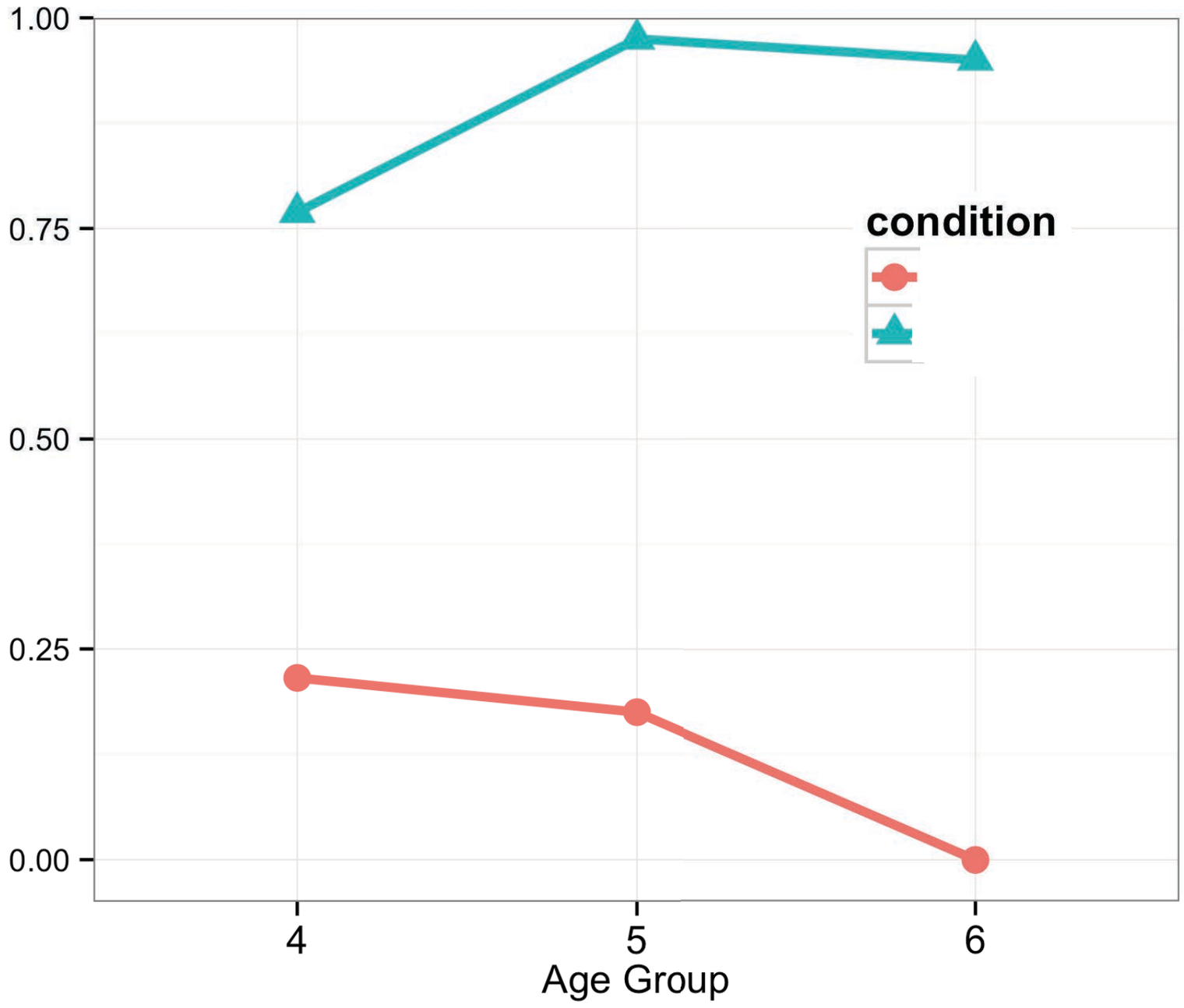


Results


Adults
1.00
.75
.50
.25
0.00
Control
Critical
Condition


Children
1.00
0.75
0.50
0.25
0.00
Control
Critical
Condition

Results



Key findings

- **Uniformity:** same biases as in Experiment 1 for both groups
  - Preference for conversational contexts where the listener did not already know the asserted content of an utterance
  - Preference for conversational contexts where the listener was already aware of the presuppositions

But…

Instructor on the first day of class:

Sorry I’m late, the car that I rented broke down on the way here!

Next time

- The debate, acquisition bearing on that debate