A new look at the relationships of language and context.

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Handouts will be posted at www.umass.edu/aae (downloads)

Meaning from context?

• We normally assume that visual context provides the “support” for a linguistic expression.
• Language “fits” the visual context.
• At the point of acquiring a piece of grammar e.g. the passive, the context triggers grammar.

Case 1: reading simple events

• Active: child sees Mouse eat cheese
• Child must identify parts of event e.g.
  Agent-action-object
• Hears “the mouse eats the cheese”
• Perfect fit
• Fixes grammar as agent-action-object
• Now if three year old child hears sentence “the cheese eats the mouse”
• The child knows something is wrong: grammar is independent.

Case 2: Passive

• At first, when child hears:
  The rat was chased by the cat
• They assume it means:
  The rat chased the cat
• How do they learn the passive?
  They hear a sentence like
  The milk is drunk by the boy
  in a context where the boy is drinking milk.
  They change their grammar: add passive.
Passive grammar

- Passive is now independent of context
- Child can understand
  The rat was chased by the cat
  And if he hears
  The boy was drunk by the milk
  he knows that’s wrong.
Child’s goal: a grammar that is independent of context.

A second example of “resisting” context

“John has socks”  Can you find: “John wants to eat some.”
Eventually, grammar overrides plausibility

Differentiating discourse and visual context

- Take case of eliciting indefinite article “a”:
  Intend child to say “the man is eating an apple”
  But picture makes it definite = the apple, so context misleads child.
  “The” is used for established information.
  The child can take the picture as establishing the apple as common knowledge, just as we assumed for “the man”.

Accommodation: Legitimate use of context to supplement grammar

- Teacher has two groups of children: one set are sewing, the other set are coloring.
- Teacher at second table says:
  “Does everyone have a crayon”
- Child as first table says “Not me!”
  What’s gone wrong?
- Does everyone have a crayon? =
  Does everyone at this table have a crayon?
Three boys are in the sandbox. Are two sitting on buckets?

Where children fail to accommodate

Some kids are playing in the sandbox. Are two upside down?

Linguistically:

Two = two \[\text{kids}\]_{\text{ARG}} \ [\text{in the sandbox}]_{\text{ADJ}}

- Children often drop linguistic restriction in favor of visual suggestion

The relationships of language and context.

- Review alternatives
- Introduce some complicating factors
- Introduce some bidirectionality of influence
When matching fails

- Picture choice tasks often fail to consider that the child has to encode the complex scene at the same time as keeping in mind a complex form.

- Example: “that” case with picture choice:
  “The girl said at school that there was a flood”
  “The girl said that at school there was a flood”

A second consideration

- What about the cases of the article, and failed accommodation?
- There is a third factor at play: intentionality.
  - Bag with hammer case: “Uh-oh!”
  - Novel verb case:
    “Let’s moop Big Bird- Whoops!”
Two year olds do NOT associate the object or action with the word used. That association is cancelled by the expression of “mistake”.

Show me:
The girl said at school that there was a flood

Too hard! Encoding the pictures and retaining the details of the sentence overwhelms the system
There is a third element:
What does the speaker know?
What does the speaker intend?
What is the speaker’s focus of attention?

Is scene interpretation simple?
• We have assumed that the process of scene interpretation is “language-like”,
• That is, the child can divide the scene into the kinds of parts that language maps onto: agents, actions, causal direction etc.
• But sometimes, language directs the parsing of the scene in ways that the child might not otherwise do.

Syntactic bootstrapping: language controls attention
• The sentence argument structure can direct attention to different parts of an event.
• Naigles, Fisher, Gleitman, Johnson have all studied this effect.
• For example, take an event with two actions happening:

The woman is zanning the apple to the clown.
• Which one was the zanner?
• Which one was zanning?
The clown is zanning the woman to send the apple

- Which one was the zanner?
- Which one was zanning?

Mental states

- A scene in which someone has a false belief may go unrecognized by the child without narration.
- The three year old child may attend to what physically happens but does not step beyond behavior to understand the underlying causes.

Video of dog hat

- 3 year olds cannot describe what happened in mental terms.
- They laugh when he puts the dog on his head, but can’t explain it.
- 4 year olds and adults laugh in anticipation, and explain: “He thought the dog was his hat!”

What changes?

- At around age 3.5-4 years, children develop the language about mental states such as false beliefs and knowledge states.
- It helps them structure stories, and guides their attention to scenes in new ways.
- They become sensitized to a “landscape of consciousness” (Bruner), not just a “landscape of action”.

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Before they can do it themselves..

- Children have an easier time with narratives than wordless picture scenes.
- The narrative helps them to structure the stream of events.

So when there is another deeper layer (e.g. mental states of characters) to events:

One final case

Parts of a sentence are not all equivalent when matching to context.

Take 3rd person /s/:
- The *cat* *likes* milk
- The *cats* *like* milk

There are two cues to number:
- the subject noun is either singular or plural,
- and the verb is either singular /s/ or plural.

Can the child use either cue to match with context?

Show me: “The cats sleep on the bed”
OR “the cats sleeps on the bed”

Johnson, de Villiers & Seymour, 2005: 3 and 4 year olds cannot use the 3rd /s/ to decide on the picture, in the absence of the cue from the subject. Just possibly, agreeing features cannot carry referential information in the same way as the original. So correspondences to visual stimuli may be less available for some linguistic forms than others.
Conclusions

• We have suggested a complex interplay of language and context.
• Initially, the child uses context to help grammar
• But then grammar comes to stand alone.
• In fact it may even drive or at least assist scene analysis.
• The child must also use intentionality as a mediating factor in judging how sentences fit context
• Accommodating to discourse requires the integration of many sources of evidence.