



# Fear & Loathing in Discourse Coherence: Children use Argument Structure in Pronoun Interpretation

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## Introduction

Intersentential pronominal reference is underdetermined syntax and the pronoun's own lexical semantics and must be fixed by context.

Pronouns often refer to the subject/first-mentioned entity of the previous sentence (Corbett & Chang, 1983; Gernsbacher & Hargreaves, 1988; Arnold et al., 2000).

Inconsistent evidence that 3-5 y.o. children are sensitive to this bias (Arnold, Brown-Schmidt & Trueswell, 2007; Song & Fisher, 2007).

Because the first-mention bias is an epiphenomenon of discourse relations? (Kehler, Kertz, Rohde & Elman, 2008)

## Question

Are children more sensitive to the first-mention bias if supported by coherence relations?

**Implicit Causality** (Garvey & Caramazza, 1974):

- (1) Sally *frightens* Mary because she's from Cambridge.
- (2) Sally *fears* Mary because she's from Cambridge.

In an *explanation* coherence relation, pronouns refer to the subjects of stimulus-subject (SS) verbs but the objects of stimulus-object (SO) verbs. (Brown & Fish, 1984).

## Experiment 1

Visual world paradigm (Tanenhaus et al., 1995).

### Task

Listen to stories while viewing scenes containing the mentioned characters

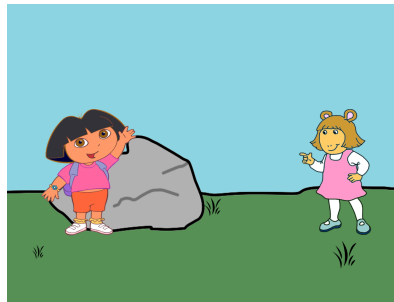
Eye movements recorded (Tobii system)

Active sentences (passive sentences used in a separate experiment and reported elsewhere).

SS verbs: confuse, frighten, scare, surprise

SO verbs: admire, like, love, hate

Other: beat, bite, catch, find, hear, help, smell, thank



### SS Condition

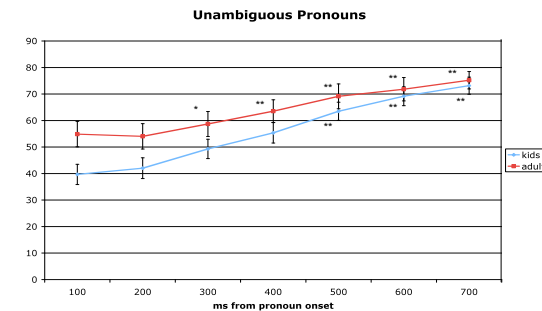
Dora frightens D.W. very much, because she is such a silly girl. Can you point to her?

### SO Condition

Dora loves D.W. very much, because she is such a nice girl. Can you point to her?

### Unambiguous Condition

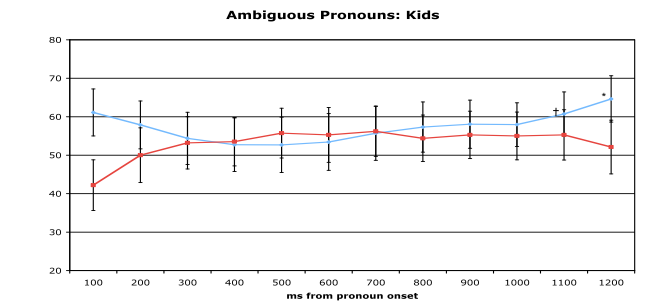
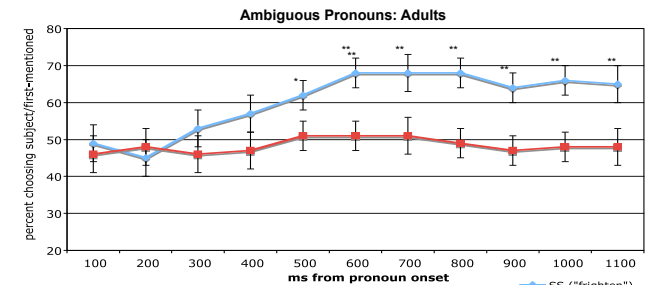
Dora bites Arthur on the arm, because s/he is such a silly girl.



## Off-line Results: Ambiguous Condition

	Adults	Kids
SS	79% (4%)**	68% (6%)**
SO	38% (5%)*	40% (6%)

Percent choosing grammatical subject, with standard errors.



## Discussion

Kids, like adults, show a first-mention bias both off-line and on-line for SS (frighten) verbs.

Suggests children in Arnold et al. may have had difficulty with discourse contexts used.

Why don't adults or kids show fast resolution of bias for SO (fear) verbs?

Perhaps because lack of a CAUSE? (Hartshorne, Pogue & Snedeker, 2009; Pesetsky, 1995)

What other discourse relations can support pronoun reference in children?

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