# What drives the Maratsos Effect, agentivity or eventivity?

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# Background

### The Maratsos Effect

- Children comprehend passives of "actional" verbs better/earlier than the passives of "nonactional" verbs, first observed by Maratsos et al. (1985).
- It is now known as the Maratsos Effect and has been robustly replicated (e.g., Gordon & Chafetz 1990, Fox & Grodzinsky 1998).
- Hirsch & Wexler (2006)
- Children perform poorly on comprehension tasks with the passive until 4;0.
- At 5;0, children perform above chance on "actional" passives.
- tional" passives.

### What underlies the effect?

- Various theories of the passive delay have been proposed (Borer & Wexler 1987, 1992, Fox & Grodzinsky 1998, Wexler 2004, Orfitelli 2012, Hyams & Snyder 2006, Snyder & Hyams 2015).
- In terms of explaining the Maratsos Effect, most proposals rely on children understanding "actional" passives because the participle makes a good adjective.
- However, some "actional" participles don't make good adjectives (e.g., \*the bumped child).
- By 6;0, they are still not above chance on "nonac- And some "nonactional" participles do make good adjectives (e.g., the known suspect).

### Previous Studies

- Previous studies have used a wide variety of verbs that they categorized as "nonactional".
- The verbs tested constitute a heterogeneous set and as a consequence the source of the Maratsos Effect is unclear.
- For "actional" verbs, previous studies were generally consistent in using eventive verbs with agentive subjects.
- For "nonactional" verbs there has been a mixture of eventive & agentive, eventive & nonagentive, and noneventive & nonagentive (stative) verbs.
  - Grover deliberately watched Elmo.
- \* Grover deliberately saw Elmo.
- a. \* Grover deliberately liked Elmo.
- b. \* Grover sees Elmo.

Grover likes Elmo.

eventive & agentive

b. \* Grover watches Elmo.

eventive & nonagentive

noneventive & nonagentive (stative)

### "Nonactional" verbs

Study	Verbs tested
Maratsos et al. (1985) Exp. I	watch, know, hear, like, remember, see, forget, miss
Maratsos et al. (1985) Exp. 2	see, hear, like, love, hate, remember

Study	Verbs tested	
Gordon & Chafetz (1990)	watch, forget, hear, know, remember, believe, like, see, hate	
Fox & Grodzinsky (1998)	hear, see	
O'Brien et al. (2006)	see, like	

#### • Research questions:

- Do the eventive & nonagentive verbs pattern with the noneventive & nonagentive verbs?
- If not, is it only eventivity that contributes to the Maratsos Effect, or does agentivity play a role, too?

### Experimental Design

Exp	o. I E	xp. 2
Eventive and		Noneventive and
agentive	nonagentive	nonagentive
paint	forget	know
fix	find	hate
wash	spot	love

• Truth Value Judgement Task: 4 training, 24 target

• 2 active, 2 passive (4 for each verb)

 Active trials were used as a control; only children who were above chance on active trials are included in the analysis.

## **Controlling for discourse felicity**

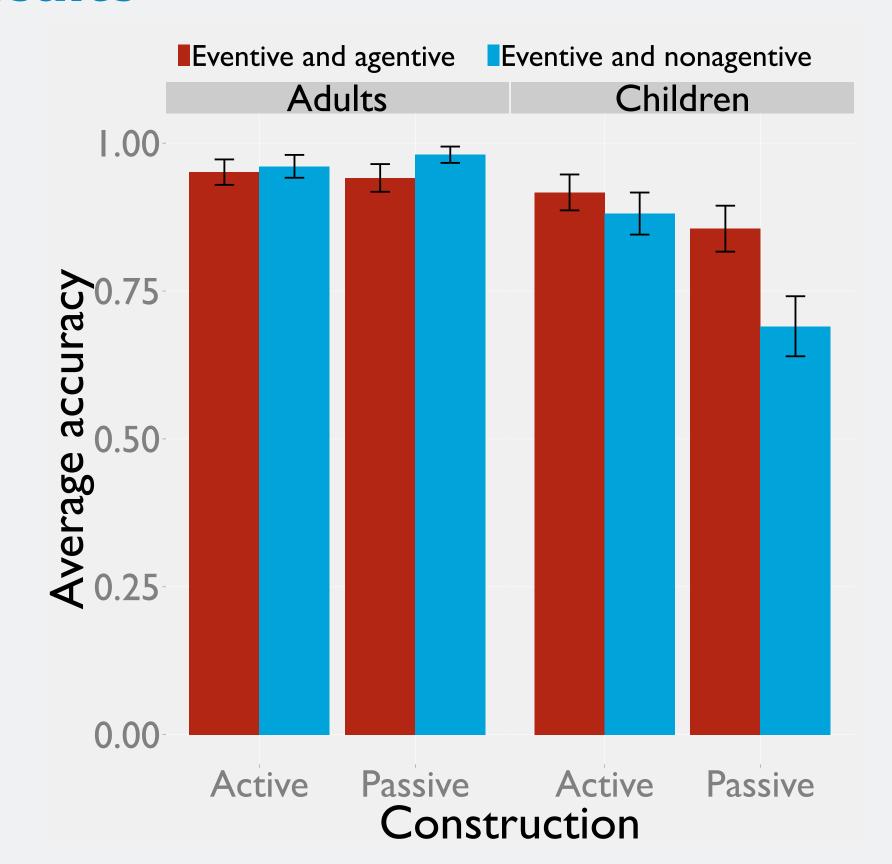
- Each sentence was introduced by I know Q, where Q set up an explicit Question Under Discussion that made the following sentence felicitous.
- Example: I know something about the red turtle! The red turtle was loved by the blue turtle.

## Experiment I

### Methods

- 17 native English speaking adults were tested.
- 18 native English speaking children were tested.
- 4 were not above chance on the active trials.
- Thus, we only analyzed data for 14 children (age range: 4;05,10-6;02,08; mean age: 5;01,07).

#### Results



- Children were above chance on both eventive & agentive passives (t(82) = 9.15, p < 0.01) and eventive & nonagentive passives (t(83) = 3.75, p < 0.01).
- However, children performed better on eventive & agentive passives than on eventive & nonagentive passives (t(154.91) = 2.58, p < 0.01).
- Frequency counts from CHILDES do not support a frequency account of the results:
- (paint, spot) < wash < forget < find < fix

### Discussion and Conclusions

#### Discussion

- Since only children who performed above chance on actives were included in the analysis, their performance cannot be attributed to them not knowing the verb.
- Because discourse felicity was controlled for, it is unlikely to be driving children's performance.

#### Conclusions

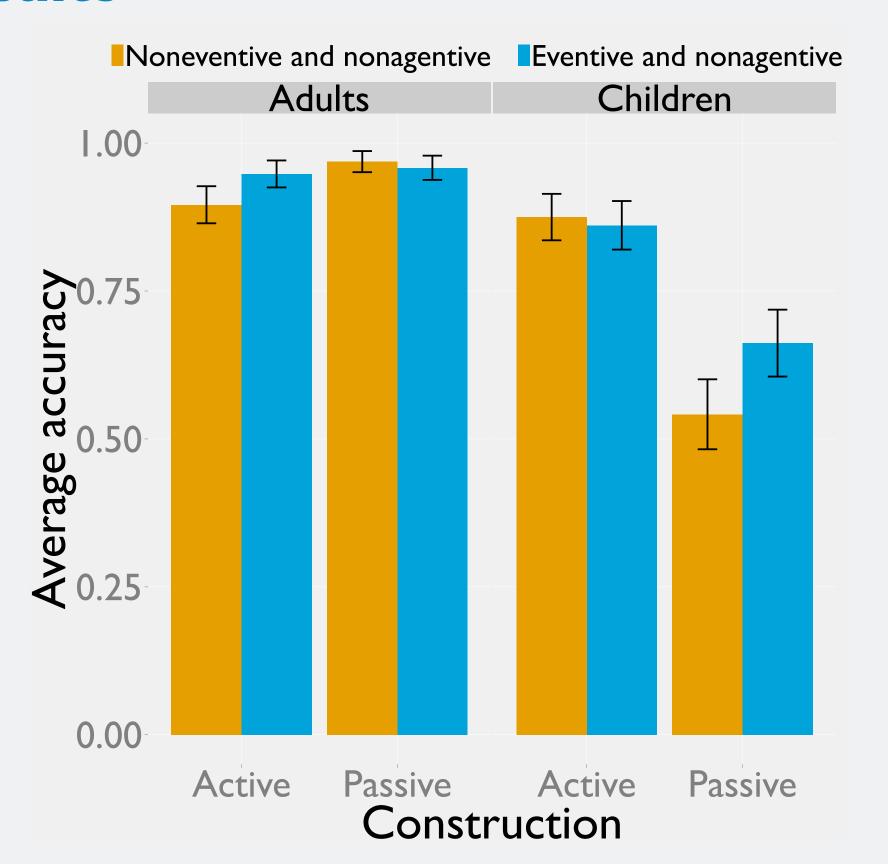
- Our results suggest that both eventivity and agentivity play a role in the Maratsos Effect.
- Children seem to learn the passives of different verb types in the order eventive & agentive > eventive & nonagentive > noneventive & nonagentive.
- The Maratsos Effect is likely due to incremental learning of the range of passivizable verb types, not the result of children not knowing the passive at all.

## Experiment 2

#### Methods

- 16 native English speaking adults were tested.
- 26 native English speaking children were tested.
- 14 were not above chance on the active trials.
- Thus, we only analyzed data for 12 children (age range: 3;09,11-5;10,07; mean age: 4;11,15).

#### Results



- Children were above chance on eventive & nonagentive passives (t(70) = 2.86, p < 0.01) but not noneventive & nonagentive passives (t(71) = 0.7046, p = 0.24).
- Children's performance on eventive & nonagentive passives compared to noneventive & nonagentive passives approached significance (t(140.8) = 1.47, p = 0.07).
- Moreover, comparing across the subjects in experiments I and 2:
  - There was no difference in their performance on eventive & nonagentive passives (t(147.48)) = 0.38, p = 0.35).
- But children's performance in Exp. I on eventive & nonagentive passives was significantly better than children's performance on noneventive & nonagentive passives in Exp. 2 (t(146.24) = 1.91, p < 0.05).
- Frequency counts from CHILDES do not support a frequency account of the results:

(hate, spot) < love < forget < find < know

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