

What drives the Maratsos Effect, agentivity or eventivity?

Adam Liter Tess Huelskamp Susima Weerakoon Alan Munn

MSU Language Acquisition Lab

MICHIGAN STATE UNIVERSITY

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.
 - By 6;0, they are still not above chance on “nonactional” 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*).
- 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.

- (1) a. Grover deliberately **watched** Elmo. (2) a. **Grover deliberately **saw** Elmo.* (3) a. **Grover deliberately **liked** Elmo.*
 b. **Grover **watches** Elmo.* b. **Grover **sees** Elmo.* b. Grover **likes** Elmo.
- eventive & agentive** **eventive & nonagentive** **noneventive & nonagentive** (stative)

“Nonactional” verbs

Study	Verbs tested	Study	Verbs tested
Maratsos et al. (1985) Exp. 1	watch, know, hear, like, remember, see, forget, miss	Gordon & Chafetz (1990)	watch, forget, hear, know, remember, believe, like, see, hate
Maratsos et al. (1985) Exp. 2	see, hear, like, love, hate, remember	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. 1		Exp. 2
Eventive and agentive	Eventive and nonagentive	Noneventive and 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

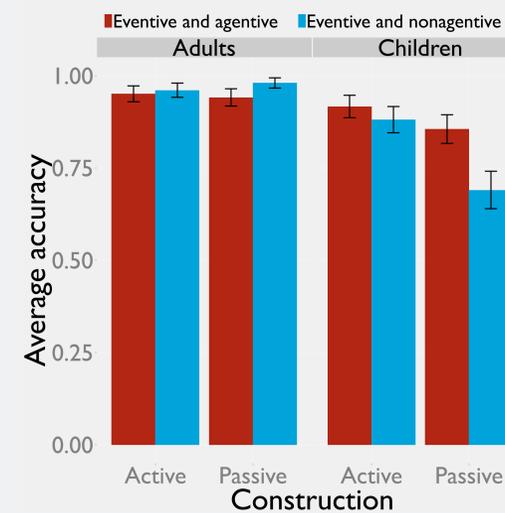
- Each sentence was introduced by *I know Q*, where *Q* set up an explicit Question Under Discussion that made the following sentence felicitous.
- Example: *I know something about the red turtle! The red turtle was loved by the blue turtle.*

Experiment 1

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

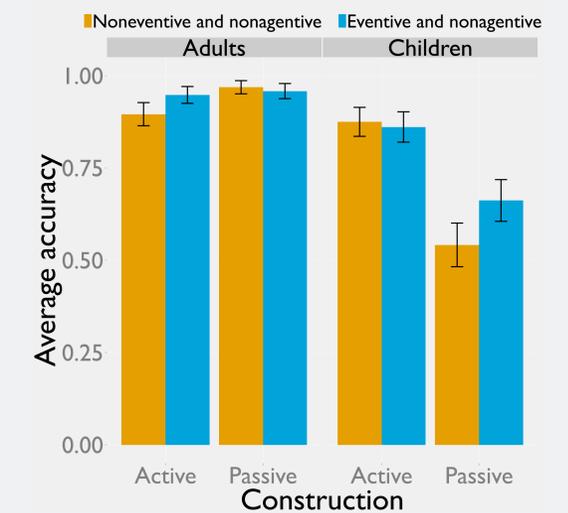
- Our results suggest that both eventivity and agentivity play a role in the Maratsos Effect.
- Children seem to learn the passives of different verb types in the order **eventive & agentive** > **eventive & nonagentive** > **noneventive & nonagentive**.
- The Maratsos Effect is likely due to incremental 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 1 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. 1 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*

Acknowledgements

- We would like to thank Cristina Schmitt, Ai Taniguchi, Rachel Stacey, and all the members of the MSU Language Acquisition Lab.
- Thanks to the parents and children at Stepping Stones Montessori School, East Lansing, MI and Montessori Radmoor, Okemos, MI.