EVENT PARSING AND VERB LEARNING: HOW WELL DO CHILDREN LEARN VERBS AMIDST DISTRACTIONS?

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Verb acquisition requires children to segment dynamic scenes and link different elements to specific verbs. In most verb studies, children only see relevant events. Two studies ask 1) how well children learn verbs while seeing relevant and irrelevant events, and 2) if they can parse events, linking only relevant subevents to new verbs. Structural alignment (SA) theory (e.g., Markman & Gentner, 1997) predicts that events (or subevents) with few alignments will be discarded.

Study 1. Study 1 asks how children compare events during verb learning when more naturalistic backgrounds are shown and some events are irrelevant. This is an important question because events that could be compared to each other usually are interleaved with other events. English-speaking 2 ½ year old children (range: 2;4-2;10), and 3 ½ year old children (range: 3;4-3;10), n=32 to date, participated in the study. Children were randomly assigned to one of 3 conditions. In the Relevant First condition (RRDDR), for a single verb, each child saw 2 events that show the same action, then two distracting events, then a relevant event before test (see Fig 1). In the Distractor First condition (DRDRR), each child first saw a distracting event, a relevant event, a distractor event and two relevant events before test. In an Alternating condition (RDRDR) no relevant events follow each other. This condition allows for the event immediately before test to be the same across conditions.

The event stimuli included a more complex background to better simulate the kinds of scenes children are viewing when they see events. Two sets of events were created in a kitchen and two took place in a park. In each, an animate agent causes a salient change in an inanimate patient, fitting prototypical causal event structure (Slobin, 1985).

The study began with 2 warm up pairs so children could practice pointing to the screen. Then the experimental trials started. When seeing a relevant event, children heard "Look! She's gonna <verb> it! She's <verb>ing it. She <verb>ed it." When seeing a distractor event, children heard "Now look at what she can do. Wow! Look! " during the event. These phrases were repeated until the child had seen 5 events. In the test phase, immediately before the test trial, children heard "Now it's your turn to find <novel verb>ing." and then saw two scenes in a split screen while hearing "Which one is <verb>ing it? Can you show me? Can you point to it? Where's she < verb>ing it?". In a second test trial, the same events were shown but on the opposite side of the screen as in Test Trial 1. The learning and test phase formed a single block of trials. The entire process was repeated until children had completed a block of trials for two novel verbs. Children's pointing behavior at test was coded as Correct or Incorrect or No Response.

A 2 (Age group: 2 ½, 3 ½) by 3 (Condition: Relevant First, Distractor First, Alternating) univariate ANOVA was computed; dv= correct extensions at test. A preliminary analysis reveals an effect of age, $F(1, 45) = 22.10$, $p < .001$, np2= .36. A one-sample t-test shows that 3-year-olds succeed across conditions, $t(22) = 12.81$, $p < .001$ (see Fig. 1). With additional participants, additional results may emerge.

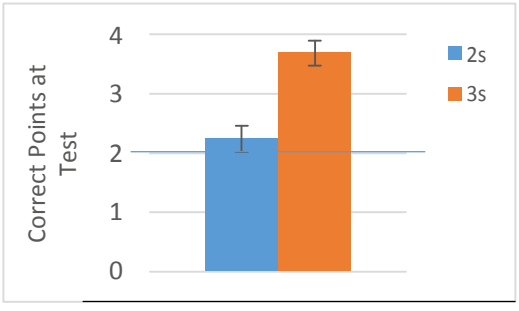

Fig. 1

Study 2.

Irrelevant events are oftentimes directly connected to relevant ones in everyday life. For example, a child may see her dad get a spoon from a drawer in the kitchen and

then turn and stir spaghetti. Previous work by Baldwin et al. (2001) and Hespos (2009) show infants can parse events embedded within a stream of action. If children are able to structurally align (or compare) similar segments of events, they should still be able to learn verbs even when the event referred to by the new verb is adjoined to a distracting event.

In Study 2, 2 ½- and 3½-year-old children (n= 30 to date) participated in one of two conditions. In the Relevant First condition (RD,RD,RD), for a single verb, each child saw a relevant event immediately adjoined to an irrelevant event, and then saw two more examples with that sequence. A similar logic was used for the Distractor First condition (DR,DR,DR).

The stimulus events were similar to those used in Study 1, except that the distractor event was filmed to appear immediately before the relevant event in one condition and immediately after the relevant event in the other condition. We also added difficulty to the test trials by creating a first pair of events using a new relevant event and a distractor event we had shown previously in the learning trials. In the second pair of events, children saw a new relevant and new distractor event (see Fig. 2).

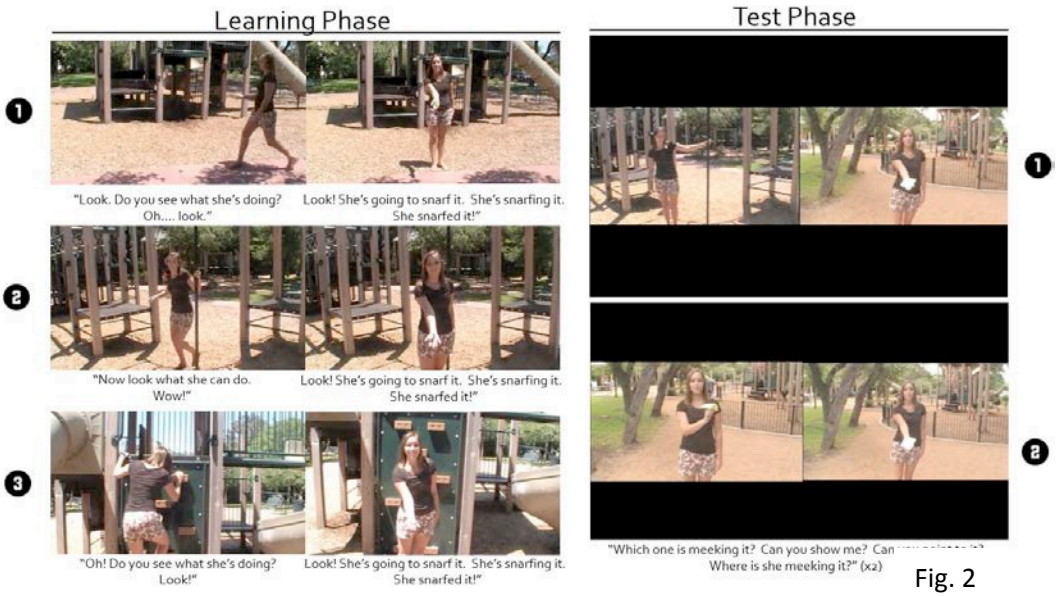

Fig. 2

The procedure was the same as that used in Study 1, except that distractor actions are attached to relevant actions (see Fig. 3).

The same analyses used in Study 2 as was used in Study 1. Preliminary results show a main effect of Age, $F(1, 39) = 21.47$, $p < .001$, with 3-year-old children's succeeding across conditions, $t(25) = 6.08$, $p < .001$ (see Fig. 4); additional participants are needed. Results from Loucks and Meltzoff (2013) suggest that preschoolers can reorder events based on the overarching goals of each set of across relevant examples, and thus, could be successful in all conditions, which would also be a useful result as no other verb study has (tested or) shown that children can disregard intervening events. Success in both studies despite intervening irrelevant events is consistent with predictions from structural alignment theory as irrelevant events or parts of events will not align with the target action.

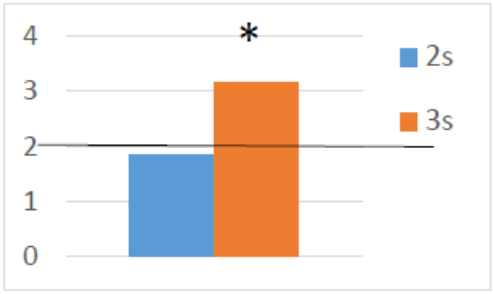

Fig. 3