Two-Year-Olds correctly adjust their syntactic interpretations following the information provided by different syntactic contexts

Alex de Carvalho, Isabelle Dautriche & Anne Christophe
École Normale Supérieure – PSL Research University, Paris, France
Contact: alex.carvalho@ens.fr

To understand sentences, adults integrate their prior expectations about likely utterances (world-knowledge, linguistic regularities (Trueswell & Kim, 1998) with the information they extract from the input (auditory, visual (Tanenhaus, Spivey, Eberhard, & Sedivy, 1995)). Depending on the level of uncertainty of a given environment (noise, accents, new talker), adults adjust their prior linguistic expectations to weigh the plausibility of different information sources (Gibson, Bergen, & Piantadosi, 2013). Here we test whether toddlers learning their language engage in a similar process while interpreting novel verbs.

Concretely, we rely on the work of Dautriche et al., (2014) who showed that French 2-year-olds incorrectly expect novel verbs embedded in right-dislocated sentences (e.g. *il VERB, le bébé, ‘he, is VERBing, the baby,’ meaning ‘the baby is VERBing’) to map to a causal action (someone else is VERBing the baby), even though the post-verbal intonational phrase boundary should block this interpretation. Importantly, toddlers correctly interpret right-dislocated sentences with familiar verbs (*it, eats, the rabbit,*). Thus, their failure to integrate prosodic cues when interpreting novel verbs is not a failure to use prosody *per se* but a reflection of their prior syntactic expectations. Indeed, several studies (e.g., Yuan & Fisher, 2009) suggest that toddlers’ initial representation of sentences is driven by the set of noun phrases (NPs): each NP gets a participant role. By default, any novel verb appearing in a NP-verb-NP sentence would thus refer to a causal action where an agent (the first NP) acts on a patient (the second NP).

We hypothesize that enriching the learning context of the novel verb may help toddlers to depart from their default interpretation. More specifically, the set of syntactic frames in which a verb appears, rather than a single frame, may help toddlers to infer its meaning (Scott & Fisher, 2012). For example hearing “She, blicks, the baby! Oh, she blicked!” may increase the probability of *blick* being considered intransitive, and hence refer to a non-causal action (since *blick* also appeared in an intransitive sentence).

Following the preferential looking paradigm of Yuan & Fisher (2009), we presented 28-month-olds (n=80) with dialogues introducing a novel verb (*‘daser’*) in one of four conditions (20 babies in each condition): transitive-intransitive sentences, dislocated-intransitive sentences, dislocated sentences only and intransitive sentences only. After being exposed to the dialogue phase, toddlers were then asked to look for *‘daser’* while viewing two videos displayed side-by-side in a TV screen: a causal action featuring two participants, and a one-participant action.

As expected, children in the dislocated only condition associated the novel verb to the causal action, and so did children in the transitive-intransitive condition. Indeed, many verbs relating two participants (e.g., *eat*) can enter an alternating pattern between transitive and intransitive sentences in which the object is sometimes dropped. Crucially, in the dislocated-intransitive condition, children behaved as in the intransitive only condition: they did not show any preference for the causal action. Thus, the presence of intransitive sentences in the dialogue increased the plausibility of the non-causal interpretation, only when combined with dislocated sentences. We conclude that toddlers can adjust their prior syntactic expectations when given more information in the input, and flexibly revise a default interpretation.

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References:


