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

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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. $,il_i$ *VERB***,** *le bébé*$_i$ 'he$_i$ is VERBing**,** the baby$_i$' 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$_i$ eats***,** *the rabbit$_i$*). 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$_i$ *blicks***,** the baby$_j$! 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.

Key-words: syntax; language acquisition ; prosody ; online sentence processing; rational inference

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