The role of prosody in interpreting novel verb argument structure
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Background & Objective
- Previous studies show that 2-year-olds are able to use the number of noun phrases (DP) to interpret transitive and intransitive sentences differently [1][2].
- We tested whether prosody can also bias toddlers’ interpretation of novel verbs in right-dislocated sentences, a frequent topicalization device in French whose semantic representation is not driven by the number of DP but by prosody.

Right-dislocated sentences in French
Right-dislocated sentences are highly frequent in French (5% of all sentences uttered by parents are right-dislocated, in a CHILDES corpus). Dislocations do not increase sentence length or superficial complexity. However, they force non-canonical interpretations:

This prosodic information marks the co-reference between the dislocated DP and the pronoun (i/l): listeners can thus infer that both DPs share the agent role assigned by the verb.

To learn to interpret right dislocations correctly, French children need to achieve two things:
1. learn that the specific prosody of right-dislocated sentences blocks simple mapping of DPs onto arguments
2. discover that the dislocated DP co-refers with a pronoun from the main sentence.

References

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Experiment 1 - Interpreting a novel verb in RD sentences

- Participants : 64 28-month-old French learning children (16/cond)

Transitive & Dislocated Condition
A: Hey il va daser, le bébé !
B: Ah bon, il va daser, le bébé ?
A: Oui, et en plus ils ont dásé, les canards
B: C’est vrai, ils ont dásé, les canards

Intransitive Condition
A: Hey il va daser !
B: Ah bon, il va daser ?
A: Oui, et en plus il s’est dásé
B: C’est vrai, ils s’est dásé

Results:
An ANOVA with a between-subject factor Condition and a within-subject factor Event Type revealed a significant interaction between Condition and Event Type on the looking time (F(3,60) = 6.9, p < 0.001 **).

Conclusion
Results from Exp2 suggest that children have learned both (1) that the prosody of RD blocks simple mapping; and (2) that the pronoun and the postverbal DP corefer. Thus, they can use prosody to constrain online meaning processing. However, Exp1 shows no evidence that toddlers integrate such prosodic cues when learning new verbs from dialogues. In Exp1, they interpreted the post-verbal DP as the patient as in a canonical transitive sentence DP-V-VP.

Why children did not generalize RD structure to interpret novel verbs?
- Children may rely on simple processing strategies while dealing with highly complex tasks (as Exp1) [5][6].
- In any case, children clearly use multiple mechanisms during sentence processing. However, they may default to noun counting, even in the presence of other cues, in demanding tasks.

Experiment 2 - Interpreting RD sentences with familiar verbs

- Participants : 32 28-month-old French learning children (16/cond)
- Procedure : online preferential looking task

Results:
An ANOVA revealed a significant effect of condition on looking time (F(1,30) = 19.5, p < 0.001 **).

Dialogue Phase
il va manger le canard !
It will eat the duck !

Test Phase : Elle est où celle qui dásé ?
Where is the one dasing ? (3xbs)

DP-Patient
DP-Agent

Participants in the dislocated condition looked more toward the DP-Agent video than the DP-Patient video (F(1,15) = 8.09, p < 0.006 **)
Participants in the intransitive condition looked more toward the DP-patient video than the DP-Agent video (F(1,15) = 10.54, p < 0.006**).

Inspection of the results item by item revealed that ‘hitting’ trials exhibited a very strong bias towards the 2-participant video. We removed this item from the analysis presented here (the results were still significant with this item included).
- Children in the dislocated condition looked more toward the DP-Agent video than the DP-Patient video (F(1,15) = 8.09, p < 0.006 **)
- Children in the intransitive condition looked more toward the DP-patient video than the DP-Agent video (F(1,15) = 10.54, p < 0.006**).

Conclusion
Results from Exp2 suggest that children have learned both (1) that the prosody of RD blocks simple mapping; and (2) that the pronoun and the postverbal DP corefer. Thus, they can use prosody to constrain online meaning processing. However, Exp1 shows no evidence that toddlers integrate such prosodic cues when learning new verbs from dialogues. In Exp1, they interpreted the post-verbal DP as the patient as in a canonical transitive sentence DP-V-VP.