Inferences of co-speech sound effects project: Further experimental evidence

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Summary: *Co-speech gestures*, which are produced simultaneously with speech, have been argued to give rise to presupposition-like inferences that project from a variety of linguistic environments, much like verbal presuppositions do [1]. [2] extend this analysis to *co-speech sound effects*, i.e. sound effects accompanying parts of a spoken sentence, and [3] provide experimental evidence that co-speech sound effects indeed display similar projective patterns as co-speech gestures. The present study further probes the meaning contributions of co-speech sound effects and attempts to use them as a methodological tool for studying the acquisition of presuppositions more generally.

Background: Much recent work has focused on the semantic/pragmatic contributions of *co-speech gestures*, which appear to contribute *not-at-issue* meanings [1,4-7]; these meanings appear to project from linguistic environments such as negation, just as verbal presuppositions do. As shown experimentally in [8], the sentence *Mary will [use the stairs]_UP*, with an upwards-pointing index finger accompanying the phrase 'use the stairs' triggers the inference that Mary will go *up* the stairs; crucially, this inference survives in a conditionalized form in the negative sentence *Mary will not [use the stairs]_UP*, namely: *if Mary were to use the stairs, it would be to go up*. [3] adapted the inferential judgment task methodology in [8] to study the inferences of (five) sound effects.

Experiment: In the present study, we aim to (i) obtain further experimental evidence that a wide(r) variety of co-speech sound effects display presupposition-like projective behaviour, and (ii) adapt the paradigm in [3] to create a child-friendly version that can be used with young children. This will allow us to capitalize on the iconicity of sound effects to test for knowledge of presupposition in young children. The task involved listening to pre-recorded audio clips of sentences such as *The little boy will [get ready for bed]_BRUSH-TEETH*, in which a sound effect of tooth-brushing co-occurred with the words 'get ready for bed', triggering the inference that *the little boy will get ready for bed by brushing his teeth*. Crucially, the negative sentence *The little boy will not [get ready for bed]_BRUSH-TEETH* should trigger the inference that *if the little boy were to get ready for bed, he would do so by brushing his teeth* (unlike the control sentence *The little boy will not get ready for bed by doing this – BRUSH-TEETH*, which explicitly denies the manner inference). Participants used a slider bar to indicate how strongly they felt the sentence gave rise to the inference indicated in text below the audio clip (Fig.1). 60 native speakers of English were recruited through Prolific and randomly assigned to the target or control ('like this')

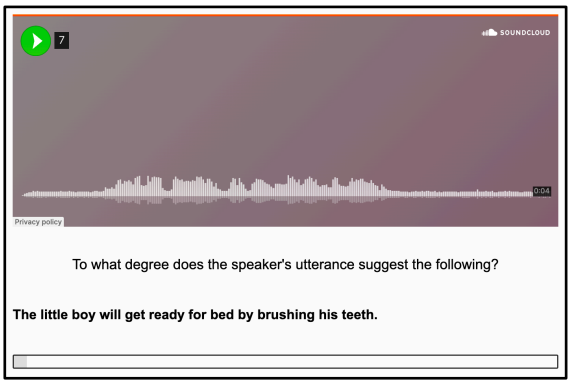

Fig.1. Screen capture of a test trial.

condition. The results (Fig.2) indicate endorsement of the target inferences and *projection* of the inferences from negative sentences; linear regression models reveal stronger endorsement of the target inferences for negative targets compared to controls. The present results replicate (with a new set of materials) the results of [3], and lend further support to previous suggestions that the projection pattern observed for gestures extends to other modalities. Our next step is to conduct a binary yes/no version of the task, which we will also run with child participants.

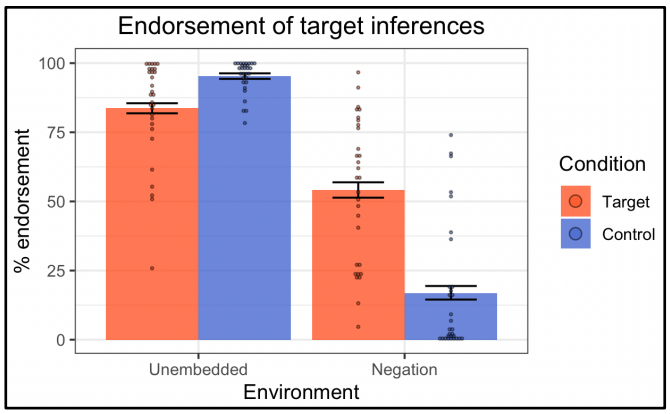

Fig.2. Results across conditions.

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