PNAS

Supplementary Information for
Rapid infant learning of syntactic-semantic links

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Supplementary Information Text

Preliminary Experiments. Prior to the main experiment, one small-scale pilot with adults and two pre-registered full-scale experiments with pre-school children were run to test the viability of our experimental protocol (data and analyses codes are available on OSF). These experiments were all one-day experiments: participants saw the training video (x1, ~7 min) and then proceeded directly to test. The first experiments were on a tablet, allowing for quick set-up, recruitment, and testing. They were run before launching a more time- and resource-costly eye-tracking study. The pilot with adults (n = 12) revealed that they were able to use the novel determiners to narrow down the meanings of new nouns (β = 2.37, SE = 1.069, t = 2.217, P = 0.034, Cohen's d = 0.859), confirming the viability of the task. Next, we ran the first experiment with pre-school children (n = 26; mean: 3;9 y; range: 3;1-5;5 y; 12 girls, 16 boys). The results revealed that children did not seem to actively use the novel determiners to interpret the meanings of new words. Though the training video was appreciated by all the children, the test phase in tablet format had little appeal, with many children wanting to abandon the game during the test. We speculated that the dissatisfaction with the tablet may have been because children had to make an explicit choice and touch the image that corresponded to the prompting sentence, which is not an easy task when the word is novel. The second experiment with pre-school children used an eye-tracking set-up (n = 24; mean: 4;11 y; range: 4;2-6;0 y; 13 girls, 11 boys). Again, children did not appear to use the novel determiners to narrow down the meanings of the novel words. We surmised that perhaps a one-day paradigm may not be pragmatically sound, and that 7 min may just not be enough exposure time. We thus decided to add three times more training time for the main infant experiment. This change was noted as an amendment to the pre-registration.
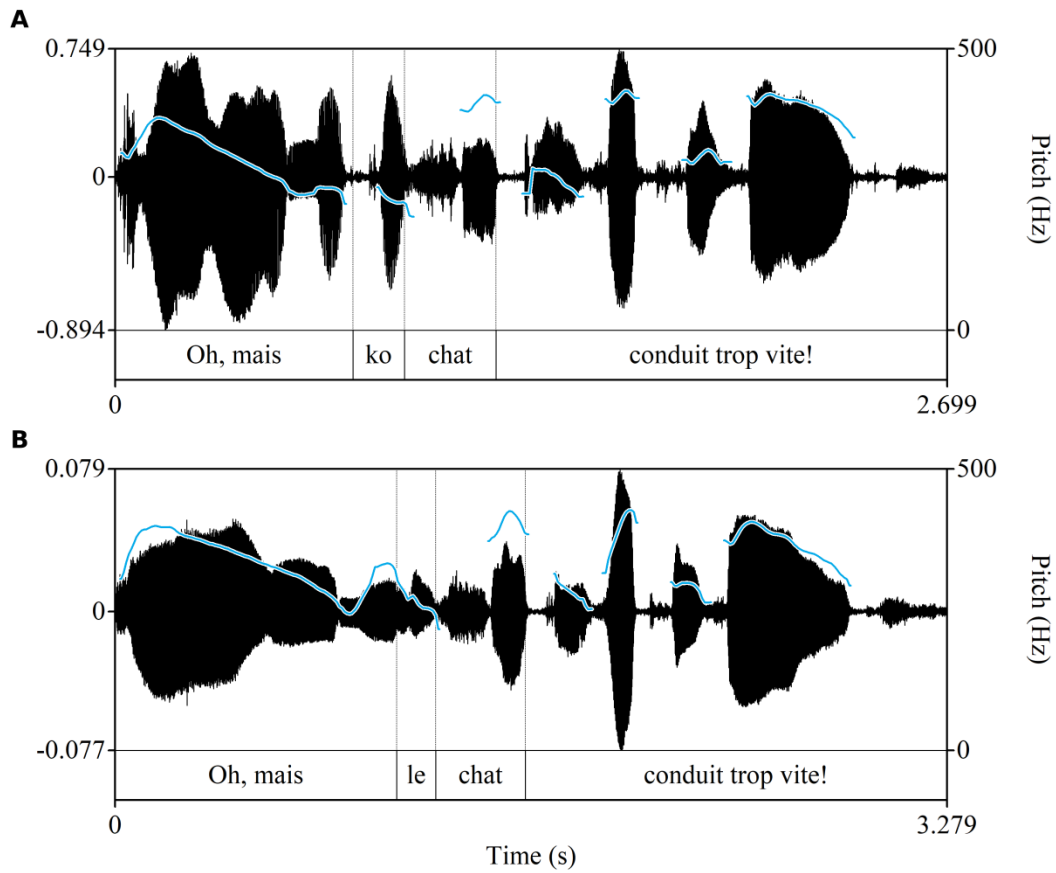
Fig. S1. Soundwave for sentences with novel and French determiners. The sentence 'Oh, my, *ko/the* cat drives too fast!' (Oh, mais *ko/le* chat conduit trop vite !). Blue lines indicate mean pitch (Hz). (*A*) Novel determiner (*ko*). (*B*) French determiner (*le*). There were no significant differences in the pitch or length of the determiner or of the first syllable of the noun.