Do caregivers modulate their pitch to indicate the spatial position of objects?

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Even newborns are sensitive to abstract cross-sensory correspondences: They map higher pitch to a higher vertical position in space and lower pitch to a lower vertical position. Preliminary unpublished data suggested that adults align pitch and visuo-spatial height within their infant-directed speech. Adults – who imagined talking to an infant – used a higher pitch for pseudo-nouns (e.g. “temu”) when this noun refered to an object at an upper position at a screen rather than when the same noun referred to an object at a lower position. In our planned pre-registered study, we ask whether caregivers use respective spatial-specific pitch modulations in the speech they produce to direct their children’s attention towards objects at different spatial positions. Together with their 8- to 23-month-old child, caregivers saw four different objects in each corner of a screen. Preceding this presentation, caregivers read a sentence. They should produce this sentence to guide the attention of their child to one of the four objects when they appeared (e.g., “Look at the bird.”). Our acoustic analysis of the pilot data revealed that caregivers’ pronunciation of the noun, as well of the preceding sentence, reflected spatial height. Utterances for a noun presented at an upper position received higher pitch compared to utterances for the same noun presented at a lower screen position . We follow up on these results using the same visual-search task within a more standardized lab environment, testing caregivers and children between 18 to 24 months. Data collection just started, but we are confident that we can present preliminary data by the start of WILD. Prospectively, we aim to get more insights into developing language-space associations during early language acquisition.