

The effect of using multimodal gesture on infants' vocabulary development in natural environments

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The objective of this paper is to study how usage frequencies of multimodal gestures (e.g., *pointing*, *showing*, *reaching*) used by the communication partners of infants in natural environments affects the infants' vocabulary development.

The study has been carried out in a rural community in Mozambique, where 18 families were recruited with infants between 11 and 15 m.o. (average 13;1) at the start of the study. Each infant was recoded twice, with 18 weeks apart, for 45-60 minutes of free behaviour, after which an adaptation of the MBCDI infant short form was administered to primary caregivers. Thirty minutes from each video was coded for 10 different categories of multimodal gestures.

Pearson's correlations showed that communication partners' use of the gestures *reaching*, *showing* and *proximal pointing* in observation 1 positively influenced the development of vocabulary understanding in observation 2 ($p < 0.01$ for reaching; $p < 0.05$ otherwise). The partners' use of *taking*, *giving* and *distal pointing* in observation 1, however, had a negative effect on the development of expressive vocabulary in observation 2 ($p < 0.05$).

The findings can be explained by realising that the gestures *reaching*, *showing* and *proximal pointing* tend to strengthen the infants' focus of (joint) attention, thus providing a healthy environment for vocabulary learning. In contrast, the gestures *taking*, *giving* and *distal pointing* tend to break the infants' focus of attention, which appear to affect word learning. Hence, this study suggests that only gestures used to strengthen infants' focus of attention assist vocabulary development, while gestures that break the attention inhibit vocabulary development.