

Developmental Trajectory of Mother-Infant Motor Coordination in Early Interaction: A Four-Case Study

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ABSTRACT

In this work in progress, we examine the motor dimension of early parent-infant dyadic interaction. Our pilot study aims to trace how motor activity contributes to communication during the initial months after birth. We recorded interactive sequences of four mother-infant dyads using a motion capture system when the infants were 1, 2, 3, and 6 months old. By analyzing the time lags in bursts and drops of infant motor activity relative to those of the mother—and vice versa—through windowed cross-correlation, we explore the temporal structure of these early interactions. Advanced time-series analysis provides a meaningful framework for assessing the temporal organization of exchanges and their evolution over the first six months. We hypothesize that a multimodal, continuous approach, rather than a discrete one, more effectively captures the developmental changes in communicative engagement between infants and parents.

Keywords: motor activity; dyadic interaction; time-series analysis; multimodality.