

From Action to Gesture to Word: Multimodal Pathways in Language Acquisition

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ABSTRACT (Times new roman, font size 11) (Max. 300 words)

Multimodality is a key aspect of early communication and correlates with later language and social skills. The first explorations of the world, objects, and tools are carried out through multimodal activities (e.g., grasping, mouthing, dropping, and visual exploration). Language development should be viewed in the context of the body in which it is embedded, as a continuity from motor actions to gestures and words (and signs).

Traditional studies on the onset of intentional communication in children have highlighted the importance of considering communication as essentially multimodal, stressing the vital role of multimodal information in structuring infant comprehension and production.

Meanings (both vocal and gestural) are built on general abilities shared with other cognitive domains and are mediated by common domain-general neural systems (Bates & Dick, 2002; Capirci & Volterra, 2008; Iverson, 2010; Karmiloff-Smith, 2013). The period between the end of the first year and the second year is characterized by a transition from a contextualized to a symbolic and decontextualized use of these communicative behaviors.

I will review major evidence on the continuity from action to gesture to word and sign in the development of multimodal communication. I will describe not only the complex interrelations *between* modalities (e.g., between spoken words and gestures) but also their relationship *within* development. The different modalities that are frequently used together in adulthood follow a specific developmental progression in infancy. Much of this developmental data derives from research conducted in our lab over the past 40 years (now the Language and Communication Across Modalities Lab at the Institute of Cognitive Sciences and Technologies, Italian National Research Council).

The main aim is to provide a stronger grounding for an embodied and multimodal approach to language that considers not only gesture and speech but also their common origin in motor actions.

Keywords: Motor Action; Gestures; Embodied cognition; Development.