

Searching the roots of words and signs in children early action and gestures

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My contribution will focus on developmental evidence on continuity from action, to gesture to sign and word. In language acquisition, linguistic labels become inextricably linked to motor programs through highly frequent co-occurrence. When we use a word we re-construct in some form the sensory and motor information we experienced with the referent. The motor programs are both the infant's own motor programs, through their own interaction with objects, as well as the observed motor programs in caregivers. Different representational techniques used by young children make visible different types of embodied practices.

The present talk offers a review of old and recent studies carried on mainly in our Laboratory (LACAM, ISTC, CNR). In particular more recently, we made an effort to consider all symbolic representational techniques in the manual modality considered by different traditions of studies (often using different terminologies): research on children gestures in spontaneous communication with caregivers, research based on elicited pantomime and research on various Sign Languages.

The four main symbolic representational techniques identified are: **own-body** (i.e. depictions of the movements of an animate agent, such as swimming, not involving an object or the representation of an object); **hand-as-hand** (i.e. including gestures in which the hand acts as a hand, portraying how an object is held or manipulated as well as the motions associated with using the object); **hand-as-object** (i.e. including gestures in which the hand acts as the object itself); **size-and-shape** (i.e. including gestures depicting the size or shape of an object or tracing the path of movement or a shape of an object).

We found that all four representational strategies observed in studies of adult gesture and sign research are already present in the representational gestures of two-year-old hearing children from different cultural groups coming from high gesture cultures as well as from low gesture cultures.

Despite cultural and linguistic differences in frequency of use, techniques for depicting information about objects and events make visible different types of embodied practices and suggest that organizational techniques in the manual modality have a shared cognitive basis, which is recruited by both language and gestural systems.