

COMBINING POINTING AND LANGUAGE DURING THE EARLY STAGES OF DEVELOPMENT: A CASE STUDY OF RUSSIAN AND CHINTANG

Sabine Stoll^{1,2}, Jekaterina Mažara^{*1,2}, and Elena V. M. Lieven³

*Corresponding Author: jekaterina.mazara@uzh.ch

¹Department of Comparative Language Science University of Zurich, Switzerland

²Center for the Interdisciplinary Study of Language Evolution, University of Zurich, Switzerland

³Emeritus Professor, Division of Human Communication, Development and Hearing, University of Manchester, United Kingdom

Both language and pointing are universal features and central components of human societies (cf. Kita, 2003). A milestone of early ontogeny is learning how to communicate intentionally. One of the first entry points into this process is pointing (Bates, 1976; Iverson & Goldin-Meadow, 2005). A number of cross-cultural studies have shown that pointing emerges around the same age and is used for similar communicative functions cross-culturally (Butterworth, 2003; Butterworth & Morissette, 1996; Callaghan et al., 2011; Carpenter, Nagell, & Tomasello, 1998; Liszkowski, Brown, Callaghan, Takada, & Vos, 2012; Ohama, 1984).

Pointing alone, however, is often under-specified without additional linguistic information and adult language users generally accompany points with language (Greenfield & Smith, 1976; Enfield, 2009). While the co-development between gestures and language is well-studied (Iverson & Goldin-Meadow, 2005), so far, little research has been dedicated to the specific content of point-accompanying language. Here, we examine the relationship between pointing and accompanying vocalizations and utterances in the production of **1 to 4-year-old children** in two very different cultural settings, **Russia (St. Petersburg)** and **Chintang** (a rural subsistence community in Eastern Nepal). We analyze the speech acts children perform and the information they convey while pointing to assess whether the way the two domains interact is independent of language and culture. Even though the specific systems of language and pointing differ greatly between cultures (Wilkins, 2003), the development of this interplay is a candidate for a universal of human communication.

In this pilot study, we narrowed our focus on the development of utterances and vocalizations accompanying *finger points*, since they are proposed to be the most commonly and probably most frequently used type of pointing by young children across cultures (Butterworth, 2003). Even though index finger pointing is ubiquitous in the world's societies, pointing behavior is an integral part of the

style of communication between parents and children and might, thus, be subject to specific cultural reinforcement that would result in a different path of development (Masataka, 2003). To understand how children and adults behave in natural communicative situations, we rely on observational longitudinal data. We evaluate whether pointing behavior differs between adults and children of the two cultures and how closely the children's production is linked to child-surrounding adult input. The video and audio data was hand-annotated for type of point as well as type of sentence, intent, and content of accompanying utterances/vocalizations.

First, we compared the proportion of finger points in both cultures in the target children's and adults' production. Second, we examined the development of accompanying utterances to understand how often pointing occurs without accompanying utterances, whether this changes with development, and whether it differs from the production in the ambient language. In a last step, we take a more detailed look at the content of the utterances that accompany finger pointing in both languages.

We found that finger points represent a larger proportion of all points in Russian (65%) than in Chintang (35%). Russian children tend to point more frequently but both Chintang and Russian children followed the distribution of point types found in their surrounding adults. Both Chintang and Russian adults use significantly fewer points unaccompanied by language or vocalizations than the children and neither children nor adults differ significantly between cultures. Over time, fewer of the children's points are silent or accompanied by vocalizations, which reflects their linguistic maturation. This is also reflected in the changes of the utterances' content in children's production over time. Children in the older age groups show a diversification of the information content they try to convey while pointing. 1 to 2-year-olds predominantly use finger points and vocalizations to draw their interlocutor's attention, older children increasingly point while making an additional comment about the referent they are pointing out. They also diversify the sentence types they use (declaratives, interrogatives, imperatives).

The composition of information content and sentence types in the input changes less across all recordings but, over time, we saw a reduction in simple identifications by adults. Across both languages and age groups (excluding the youngest children's production), the most commonly used utterances occurring with finger points are statements. Points and language are used in symbiosis, each adding information to the other.

This case study contributes to understanding the role of language in communicative pointing during the earliest stages of language development. Children in both languages differ from the input in term of content of their utterances but display cross-cultural similarities. Despite the very different cultural environments, overall gestural behavior, and adults' attitudes towards linguistic instruction, the interaction of finger pointing with language shows considerable similarities.

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