Gesture imitation increases reciprocal communication in children with autism spectrum disorder

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Previous studies of typically developing (TD) infants have identified close connections between gestures and communication. However, children with autism spectrum disorder (ASD) have difficulty in understanding and expressing gestures in natural interaction. Children with ASD also imitate gestures less frequently and less accurately than TD children and children with other developmental disorders (Vivanti et al., 2014). One of the difficulties in understanding and expressing gestures and acquiring gesture imitation may be the difficulties in paying attention to others (Vivanti et al., 2014).

In this study, we examined the effects of gesture acquisition on promoting reciprocal communication in children with ASD. In particular, we focused on the fact that they are sensitive to "imitation recognition." Nadel (2004) shows that just like TD children, children with ASD can recognize when their vocalization and gestures are being imitated. Our research revealed that children with ASD would be more likely to communicate with the adult when the adult imitated children's responses immediately (which is called "contingent imitation") compared with when the adult did not imitate but gave a vocal response (Ishizuka & Yamamoto, 2016). Based on this result, we conducted gesture imitation training using contingent imitation for nonverbal children with ASD.

This study was approved by the research ethics committee at the Keio University. Six Japanese male children with ASD (Chronological age: four to five years; Developmental age: one to two years). Developmental age was measured using the Kyoto Scales of Psychological Development 2001 (KSPD). At the time of study, all participants attended kindergarten. All children came to laboratory once or twice a week. A multiple-probe design of single-subject research methodology was used to determine the effectiveness of the gesture imitation training using contingent imitation. Target gesture modeling stimuli were different across participants and selected based on participant's behavior repertoire. In training phase, the therapist immediately imitated all of the children's actions and vocalizations (contingent imitation).

The result showed that gesture imitation training encouraged not only the expression of new gestures but also the linguistic comprehension and the production on the gesture. In addition, after training, the time spent looking at the adult's face had extended, and the duration of reciprocal communicaiton was also prolonged. The result showed that acquisition of gesture plays an important role in communication in children with ASD. It is suggested that children with ASD can recognize when their gestures are being imitated by adults and this leads to understanding and sharing the intention of others. Therefore, gesture could be an important clue for intention sharing in communication.

References

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