



Origins of a theory of mind

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ABSTRACT

Twenty-two pairs of typically developing toddlers ($M = 24.32$ months) and their mothers were observed in a play-room solving puzzles during 30 min. The target of the observations was hand-taking gesture. Researchers have thought that this gesture is rare among typically developing children and is more frequent among autistic children. Ten in 22 children showed this gesture in only 30 min. They should know "I can not do it by myself, but my mother can do it." When we can assume that children know others' mental mechanism, it might be the origins of a theory of mind.

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1. Introduction

Toddlers take other's hand to ask her/him to do some kind of thing. Researchers have termed this behavior "the hand-taking gesture" (Gómez, 2004). Gómez wrote "Although the hand-taking gestures are rare among typically developing children, they are more frequent among children with learning difficulties, especially among some children with autism (p.189)." In Japan this gesture is termed "the crane behavior (Makita, 1966)," because autistic children use other's hand as a "crane" not as a human hand. Phillips, Gómez, Baron-Cohen, Laá, and Rivière (1995) found that children with autism who use hand-taking gestures do not usually look into the eyes of the other person. The first aim of this study was to get fundamental data of this gesture in typically developing children. Because we think this gesture is common in typically developing children, and it has important roles in their social and cognitive development.

Phillips et al. (1995) wrote "It is widely accepted that there are two important but distinct functions of communication: requesting, and commenting . . . In the literature on preverbal communication, this distinction is often discussed in terms of protoimperative and protodeclarative functions . . . Protoimperatives serve to achieve the child's goals, whereas protodeclaratives serve simply to comment on something, and are not considered to have an instrumental purpose (p.1383)." When a child uses "the hand-taking gesture" in some activity, she/he might want to say 'Help me. I can not do it without your help.' This means that the child knows the ability of the other. Phillips et al. (1995) coded the children's behaviors to the experimenter (not to their mothers) in 4 strategies: Object centered, Person as Object, Person as Self-Propelling Agent, and Person as Perceiving Subject. And "throw adult's hand (toward a target)" was coded in "Person as Object." The same behavior will appear with a different meaning in a different situation. The second aim of this study was to observe children's behaviors with their mothers.

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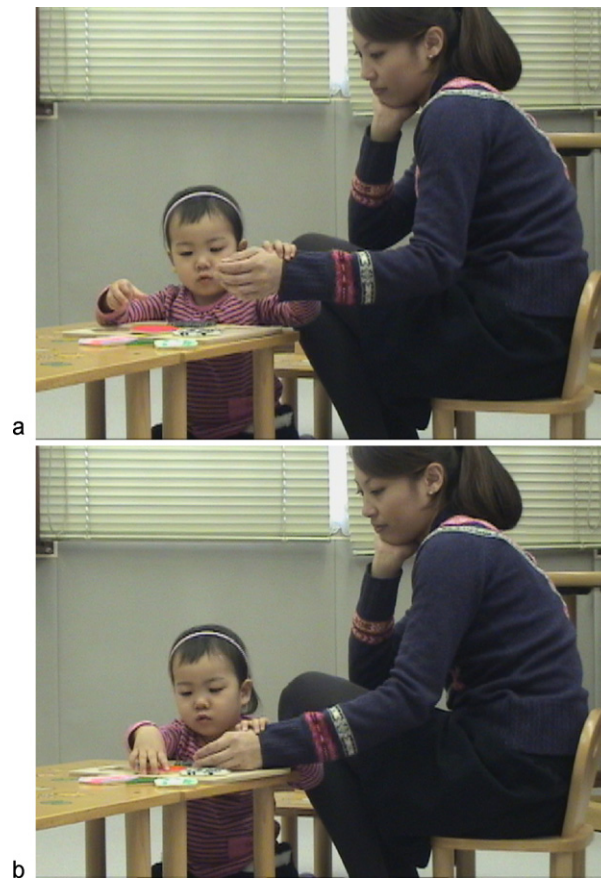


Fig. 1. Typical hand-taking gesture.

Wellman and Lagattuta (2000) wrote that “Currently, however, there is no consensus as to when infants come to understand persons as intentional actors and experiencers . . . (pp. 32–33).” Doherty (2009) summarizes the studies on a theory of mind and shows the figure of Baron-Cohen’s mindreading system (p. 119). In the figure, “Theory of mind mechanism” operates from 18 to 48 months. By the analyses of “the hand-taking gestures,” we will be able to consider the origins of a theory of mind more deeply. That is the third aim of this study.

2. Method

2.1. Participants

Twenty-two typically developing children ($M = 24.32$ months, $SD = 4.89$, 16–30 months; 15 girls and 7 boys; 16 the first born and 6 the second born) and their mothers ($M = 32.55$ years, $SD = 4.47$, 25–41 years) participated to this study.

2.2. Procedure

A pair of one child and her/his mother was observed in the play room about 30 min ($M = 30$ min 17 s 57). The instruction was “Please play with a puzzle freely (see figures).” The first puzzle (see Figs. 2 and 3) was the same for all participants, but the other puzzles were adjusted to the ability of the child. The first puzzle was a plastic cube box (16 cm \times 16 cm) with many kinds of holes in various shapes on plane surfaces and many kinds of plastic blocks. Children must select an appropriate block to fit the hole to put it into the box. It was not easy for our participants to play with it by themselves.

Our target of observation was “the hand-taking gesture,” but we did not explain it to the mothers preceding the observations. In the preliminary observation, a mother who knew our target gesture put her hands unnaturally in front of her child. The observational design (except the target gesture) was explained to mothers, and informed consent was obtained. The research was conducted with the fully informed permission of the Research Ethics Committee of the Department of Psychology, University of the Sacred Heart.

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