

# Peer Imitation in 4-year-old Children: Rational or Irrational?

Benise S.K. Mak (benise@hku.hk)

Department of Psychology,  
The University of Hong Kong  
Pokfulam Road, Hong Kong  
China

## Introduction

A recent study by Gergely, Bekkering & Kiraly (2002) shows that preverbal infants are more likely to imitate others' behavior only when it is perceived as a rational one than when it is irrational. Fourteen-month-old babies imitated a novel act, such as using one's forehead to turn on a light box, only after they observed a female experimenter who did so with her hands free. When the model's hands were occupied, infants tended not to imitate and chose to use a more straight forward way of achieving the goal, using their hands to turn on the light. One-year-old infants are able to see others' behavior as intentional and that the experimenter's head-touching behavior with her hands free must serve some purposes, so that they imitate accordingly.

To determine the intentionality of one's behavior in imitation, children may consider not only the rationality of the behavior but also the rationality of the model. We generally believe that adults behave more rationally than young children. In this respect, the same behavior executed by an adult and a young child might lead to different interpretation by imitators. Children like us might consider adult's behavior as more rational than that of peers and tend to imitate an adult than a child demonstrating the same novel act in achieving the same goal.

In this study, 4-year-old children were tested as they have been found to be more able to form a theory of mind and perform better in some false-belief tasks than 2- and 3-year-olds (e.g., Perner, 1991; Sodian, Taylor, Harris, & Perner, 1991). They were expected to perceive adult's novel acts as more intentional than those of peers and would therefore imitate the behavior demonstrated by adults more often than by young children.

## Method

**Participants.** Thirty 4-year-olds (half boys; half girls) participated.

**Design and Procedure.** An imitation task that was similar to the one used by Gergely et al. (2002) and Meltzoff (1998) was adopted. Children were first required to watch a female model demonstrating a novel act, such as using her forehead to touch a toy monkey producing a laughing sound, and were then observed if they would imitate the model's behavior. Like the hand-free condition in Gergely et al.'s study (2002), the model's hands were not occupied by other activities and her head-touching behavior would be seen as

intentional. Based on their findings, children should be more likely to imitate the novel act. However, it is true only when the demonstrator is an adult.

In this study, in addition to a female experimenter a 4-year-old girl was also trained to be a demonstrator. In the child model condition, unlike in the adult model condition, participants would be less likely to imitate the head-touching act demonstrated by the young model and would tend to opt for a simpler way to achieve the goal by using their hands to make the toy monkey laugh. The novel act demonstrated by the young model would be seen as not quite right by the young participants.

## Results and Discussion

Data are summarized in Table 1. Findings seem to provide support my hypothesis that 4-year-olds imitate others' behavior depending on how they perceive the models. If children see the model (that is, adults in this study) as rational beings and view their behavior as intentional, the behavior (head-touching) is more likely to be imitated. However, if children perceive another young child's novel act as not so reasonable, they tend not to imitate the behavior (head-touching) and choose to use a simpler way to deal with the problem (using help to make the toy monkey laugh). In this study, whether a certain behavior is rational or irrational just like beauty is in the eyes of the beholders.

Table 1: Percentage of the 4-year-old children's head-touching and hand-touching behavior in the two conditions.

| Condition   | Head | Hand |
|-------------|------|------|
| Adult model | 80%  | 20%  |
| Child model | 33%  | 67%  |

N=30

## References

- Gergely, G., Bekkering, H., & Kiraly, I. (2002). Rational imitation in preverbal infants. *Nature*, 415, 755.
- Meltzoff, A.N. (1988). Infant imitation after a 1-week-delay: Long term memory for novel acts and multiple stimuli. *Developmental Psychology*, 24, 470-476.
- Perner, J. (1991). Understanding the representational mind. Cambridge, MA: MIT Press.
- Sodian, B., Taylor, C., Harris, P.L., & Perner, J. (1991). Early deception and the child's theory of mind: False trails and genuine markers. *Child Development*, 62, 468-483.