

# How do children construct a socio-cognitive understanding of minds? : A cultural perspective

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**Abstract:** This paper reviews the studies investigating the social influence on the development of socio-cognitive understanding of minds from a cultural perspective. Research on the western individualistic interpretation of the theory of mind is reviewed and implications from these studies are discussed. The cultural niche is then addressed with reference to existing culture studies. This paper will then discuss hypotheses that could be tested in order to help us reach a better explanation of “cultural pathways through universal development” (Greenfield *et al.*, 2003, p 461) in the area.

**Key words:** theory of mind, maternal language, mental state talk, Japanese culture, social cognition.

There has been a substantial number of studies documenting how children come to understand people’s mind in social contexts over the last 20 years. Our mentalising ability known as “Theories of Mind (ToM)” is one of the hottest areas of studies in developmental psychology, and its origins and nature of developmental courses have been greatly debated. The term ToM was first coined by Premack and Woodruff (1978), when they used it to refer to a general ability to ascribe mental states to others as well as to the self.

Wimmer and Perner (1983) tested young children to examine their ability to ascribe mental states of other people using a task, which induces a situation where a protagonist happened to hold a false belief on the whereabouts of an item, whereby a displacement was made

in the protagonist’s absence. That is, in order for a child to be able to ascribe the protagonist’s mental states, the child needs to understand that the protagonist can hold a false belief that is different from reality. When a child correctly inferred the protagonist’s belief in the task (namely false belief task), the child is supposed to have a theory of mind. There is a robust finding that children do not start to understand the protagonist’s false belief until 4 years of age. This dramatic change in understanding of other people’s as well as their own mind happens around 4 to 5 years of age. Regarding this developmental milestone, several theorists have proposed explanations for how this is achieved. Some are driven by a nativist’s view (e.g. Leslie, 1987) whereas others believe (e.g. Perner, 1991) that there are factors that influence the development of

mentalistic representation that goes along with other cognitive faculties.

Carpendale and Lewis (2004) argue that children's understanding of minds is constructed within social interactions rather than with conceptual development within individuals. They used the term "social interaction" to encapsulate the child's social experiences that relate to parenting styles, familial environment, attachment, and parent-child conversation. Their approach to the development of children's social understanding thus focuses on the "*relations*" between people, which bring about different quality and/or quantity of various social interactions. From their constructivist's point of view, Carpendale and Lewis further argue that the interactional process by which a child comes to understand the social mind is formed on the basis of the mutuality of daily activities and communicative exchanges. Such interactions at a micro-level almost always take place in a social and/or cultural context. Thus, in order to answer the question "how" children construct mentalistic understanding we should not overlook a socio-cultural dimension (i.e. a macro system) that influences how we interact in social contexts.

Despite a large body of research having been carried out on the development of ToM across different cultures, findings on the onset of false belief understanding seem to support no cultural variability (e.g. Callaghan et al., 2005). If any, such a cross-culture difference is largely overlooked and more focus was given to the consistency of developmental pattern (Wellman, Cross, & Watson, 2001). However, there are a few studies that explicitly claim cross-culture differences (e.g. Naito &

Koyama, 2006; Vinden, 1999). Finding, if any, whether or what kind of culture differences exist could bring about important insights into our understanding of the developmental process and what influences the development of such mentalising ability. In order to postulate the importance of cross-culture studies, this paper, drawing on a view of Carpendale and Lewis (2004), reviews the literature that directly or indirectly addresses social and cultural influences on children's understanding of mind with a particular reference to conversational interactions. This paper also considers a possible hypothesis regarding how culture influences the developmental course of children's understanding of peoples' mind that may create individual and intergroup variability.

### Conversation with family members as a window for social influence

Direct evidence of social influence on children's ToM understanding claims that young children who have siblings seemed to pass the false belief tasks at much younger ages than those who have no older siblings. A benefit from siblings has been recognised as the "sibling effect" (Perner, Ruffman, & Leekam, 1994; Ruffman, Perner, Naito, Parkin, & Clements, 1998).

The implications from these findings on the sibling effects are two-folds. The first possibility is that a child who has older siblings benefits from someone who is more advanced in development in the family, other than parents, through the experiences of more challenging interactions including communicative ex-

changes. The sibling study (Azmitia & Hesser, 1993) found that elderly siblings provided a younger child with supportive guidance for carrying out cognitive tasks and that the youngsters are more likely to imitate their elder siblings than older peers. Also having older siblings enables the younger ones to overhear conversations between their elder siblings and parents (Oshima-Takane, Goodz, & Derevensky, 1996). Hearing more sophisticated conversations challenges them to figure out what is going on in another's mind with reference to specific contexts. In fact, there is a significant association between familial discourse such as observing mother-sibling conflict interactions (in particular for which negative emotions are involved) and later competence of false belief understanding (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991). Hughes and Leekam (2004) suggest a possible mechanism for this link; salience of such emotional displays may make the child realise that there are different points of views, which will lead to the child's appreciation of intersubjectivity in the context.

The second possibility is child's active involvement in triadic conversations. When mother-child-sibling conversations are taking place, in order to actively participate in an on-going talk one has to follow what the other two are saying. Triadic conversations tend to be longer and involve more turns for each speaker than in dyadic conversations; infants of 19 months of age were able to comprehend on-going conversations including those utterances addressed to both others and themselves (Barton & Strosberg, 1997; Tomasello & Barton, 1994). In this situation, the child

needs to differentiate self-other perspectives and to be able to take the other person's perspective if one wishes to make one's own communicative acts effective (for example, Relevance theory proposed by Sperber and Wilson, (1995). Experiencing such a demanding triadic conversation could provide the child with a rich language environment and facilitate children's pragmatic language skills.

From these possible implications, what the sibling effect seems to offer are both qualitatively and quantitatively different interactional experiences from dyadic interactions. However, having siblings is not only the way by which social interaction promotes the child mentalising ability. Maternal interaction with their child has been seen as a prime influence for their child's development. The socio-cognitive understanding is also considered to be influenced by how mother interacts with their child. Jenkins *et al.* (2003) examined family factors affecting child exposure to mental state talk through the observation of families involving mother, father, child and siblings. Mothers' mental state talk to their children was assessed when she was with her children as well as with their father present in two separate sessions. Mothers differentiated more in mental state talk between the child and his/her siblings than the father did. Also mothers used more mental state talk than fathers in their joint sessions. As father-child interactions without the mothers' presence were not assessed, it is hard to draw a firm conclusion on parental gender difference. Nevertheless, given the general view on child-rearing practices, the mother who spends more time with their children are likely to be more experi-

enced in interacting with their child than other family members.

As seen in this study, it is possible that maternal interactions are likely to have a specific impact on their children. Maternal interactions with specific reference to communicative interaction with their children are discussed next.

### **Maternal language input and emotional discourse within maternal interactions**

What and how mothers talk to their child have been of particular interest as a part of maternal interactions, which play an important role in the development of socio-cognitive understanding. Evidence supporting the link between maternal conversation with children and socio-cognitive understanding came from the studies that observed daily conversational situations as well as those that elicited mother-child talk through picture-book sharing activities. Despite the different methodologies used in the studies, there is a consensus on the findings as to that “what” and “how” mothers talk to their child and facilitate a child’s socio-cognitive understanding. In respect of what kind of talk, those related to mental state talk use and/or to emotional discourse appeared to be important. Ruffman and his colleagues (Ruffman, Slade, & Crowe, 2002; Ruffman, Slade, Devitt, & Crowe, 2006; Taumoepeau & Ruffman, 2006, 2008) showed strong and consistent findings for a causal relationship between maternal mental state talk used during early stages and the child’s emotion understanding of desire, emotion, and beliefs in later stages. They used emotionally charged pictures to

elicit maternal mental state talk during the mother-child picture book sharing session. Their series of longitudinal investigations postulate the importance of mothers’ mental state word use for facilitating young children’s understanding of mental states. However, exactly how these mental discourses are facilitating the child’s understanding seems to be less clear. Could it be that only the quantity of maternal language input matters or is it more important to look at “how” these are used in the mother-child conversations? Research findings suggest that “how” the mother talks to her child is a more sensitive predictor for the development of socio-cognitive development.

In their extended review paper concerning the influence of conversational environment on the psychological understanding of persons, de Rosnay and Hughe (2006) argue that simple quantification of maternal emotion reference is poorly associated with the child’s emotion understanding. Rather they emphasised the manner that mothers use to refer to these mental states. Within the emotion discourse, mothers’ causal and explanatory talks with reference to such emotional situations were more closely related to the child’s understanding of minds. That is, the exact role of maternal interaction is to disambiguate references to psychological states by elaborating on the conditions experienced; in such a way, an implicit understanding of psychological states of affair becomes more explicit and accessible for their child (de Rosnay & Hughes, 2006). These findings suggest that beyond a child’s exposure to mental state talk, such talk needs to make full sense to the child in how such terms are used in the context and how they reflected

on people in the context.

### **Adding a cultural dimension to interpret social influence**

As seen in the preceding section, maternal mental state talks have an effective role in guiding the child to the states of clear psychological understanding by making explicit references to them. However, such effective maternal interaction styles are not always common across cultures. If that is the case, we should be able to observe cultural variations in either trajectory of or rates of development in children's socio-cognitive understanding. In fact, cultural studies of ToM research suggest that development of socio-cognitive understanding is not entirely universal and that how we attribute behaviours or explain actions shows cultural variation (Lillard, 1998, 1999). As one of the studies providing direct evidence for this claim, Vinden (1999) found a lag in both Cameroon and Papua New Guinea children's false belief understanding relative to the children in European-derived cultures when a comparable psychological term "think" was used to ascribe protagonist's beliefs. However, when these children were tested with a false belief task that was presented in the context of socially meaningful action, they performed equally to their counterparts. Here, there was found to be an implication for cultural influence. The socio-cognitive understanding in question is not always tapped in the same way; certain skills such as attributing personal mental states are not valued to be as important as in western cultures (Le Vine, 1997; Vinden & Astington, 2000).

In the light of the cultural paradigm, individualism/independence and collectivism/interdependence are often used to describe such variations. However, such dichotomy may be too simplistic to describe human development (Greenfield, Keller, Fuligni, & Maynard, 2003). According to Greenfield *et al.*, there are two cultural pathways of independence and interdependence that are placed within a unified developmental theory. They view culture as a socially interactive process constructing both "shared activity (cultural practice) and shared meaning (cultural interpretation)" (Greenfield *et al.*, 2003, p462). Constructing culturally valued practices and interpretation is achieved by "cultural learning" through development. As a part of cultural learning, the ways adults talk to their youngster in different cultures have been seen to be largely different. Some of the cultural studies of adult-child interactions are reviewed next.

### **Varieties of socialisation processes as cultural learning**

In a study in Western Samoa, Ochs (1983, 1988) reports that young children meet a variety of caregivers and siblings, who are living together and providing most of the immediate care and who are keen to socialise these young children. Young children are encouraged to decentre and to take a more mature interlocutors' perspective in the presence of society members. Children are often forced to make an effort to meet these people's levels of communicative need. In Kaluli, a different style of speech is addressed to young children, and is again influenced by specific cultural beliefs

(Schieffelin, 1983, 1990). According to Schieffelin, sound-play is discouraged in this society, because it is seen as animal-like and assumed to be taboo. This comes from their cultural belief that the entry into language marks the boundary between inhabiting the world of animals and spirits and the world of humans. Learning to speak is believed to be a departure from the land of spirits to enter human society. What normally happens in this society is that children are often given a message to pass on or model utterances to be repeated, so that they learn how to say rhetorically and formally sophisticated adult words through their imitation and repetition at a very early age.

As reviewed above, ethnographic studies of cultural learning provide hints to the developmental process of socio-cognitive understanding and may show different trajectories when these children's performance is assessed in the standard false belief task. In terms of performance, as seen in the study by Vinden (1999), some culturally valued interpretations could hinder people to give a correct answer to the ToM questions.

### **A challenge to the two-pathway explanation of person knowledge development**

What a person thinks and how they behave in a certain situations requires skills to infer the other person's psychological states. Such person knowledge could be interpreted differently according to our socialisation in a specific culture. However, as Greenfield *et al.* (2003) noted, there is challenge that need to be resolved.

Greenfield *et al.* argue that there is a contradiction in Korea and Japan to the developmental two-pathway explanation proposed above. These cultures with a similar level of socio-economic background to western counterparts prefer a sociocentric model of development and socialisation, yet the children appeared to show the development of understanding person knowledge whose model is based on individuated interpretation rather than on mutually shared knowledge interpretation.

In order to clear this contradiction, more empirical information on the development of false belief understanding in these cultures is necessary. A very limited number of studies from the Japanese culture were used in the meta-analysis of theory of mind development (Wellman *et al.*, 2001). More recent studies (Naito, 2003; Naito & Koyama, 2006) suggest that the development of false-belief understanding in Japanese children is different or delayed in comparison with those in European-derived cultures. In addition, although no direct comparison was made, a careful examination of data regarding the age of passing false belief tasks from our lab (e.g. Tsuji, 2008) also support Naito's findings. Thus it is possible to say that, for cultures whose socio-economical levels are similar but with different socialisation processes, children may construct their mentalistic understanding differently.

However, before this conclusion is made, it is crucial to clarify how the Japanese socialisation process influences the way children develop mental understanding. Is it possible to find similar relationships as were found in Western cultures; in other words, does early maternal mental state talk predict a

child's socio-culture understanding in the same way?

If we hypothesise that the Japanese socialisation process was not sufficient or explicit enough for the child to disambiguate reference to psychological states, it is possible to assume that Japanese children's development could be delayed relative to their western counterparts. The next section reviews the studies that examined characteristics of Japanese maternal interaction and discusses if that hypothesis is plausible.

### **Maternal interaction in Japanese culture**

In respect of the early experience of socialisation in Japan, there is significance in the relationship between the children and their caregivers, usually mothers. Such relationships are regarded as a tight unity between the mother and child, where the child's security derives from the mother constantly providing for the child's physical and emotional needs. This relationship contrasts with the way caregivers in the United States provide their children with security serving as a foundation for the exploration of the external environment (Rothbaum, Pott, Azuma, Miyake, & Weisz, 2000).

Toda, Fogel and Kawai (Toda, Fogel, & Kawai, 1990) examined the differences and commonalities of maternal speech between Japanese mothers of 3-month-old children and Caucasian American-English speaking mothers with children of the same age. Maternal speech was analysed in terms of function, syntactic forms and use of baby talk. American mothers' speech was more information-

oriented, asking more questions, such as yes/no questions, whereas Japanese mothers' speech was more affect-oriented, using more nonsense, onomatopoeic sounds and a greater frequency of baby talk, and calling their child's name frequently. These findings are in line with previous research (e.g. Fogel, Toda, & Kawai, 1988; Shand & Kosawa, 1985) that found these differences consistently in mothers' interaction styles between Japanese and Caucasians in the United State of America. US mothers showed a tendency to respond vocally and to stimulate positive vocalisation in their young children, whereas Japanese mothers responded with less vocalisation but showed more physical contact with their child. However, the duration and frequency of the child's gaze at the mother appeared to be similar in both cultures. There seem to be some stereotypical interaction styles in Japanese and US mothers, in particular the frequent use of a non-vocalised mode in Japanese as opposed to a vocalisation mode in US mothers. According to Fernald and Morikawa (1993), a reason for Japanese mothers' frequent use of baby talk is considered to be derived from speech conventions in Japanese society. Addressers use a different code of speech, taking into account the relationship between addresser and addressee in terms of their gender, status and situation (Hakuta, 1986). This differentiation in the code of speech is respected in the society; therefore, mothers try to distinguish children from adults in order to teach such culturally valued speech conventions at an early age (Clancy, 1986). Japanese mothers' frequent use of baby talk may also constitute maternal expressions of affection

(Fisher, 1970) and may be a way of expressing empathy with young children. In contrast, American mothers' communicative styles reflect that they are more likely than Japanese mothers to emphasise direct and individual expressions to their child and to encourage their child to become independent at an early age (Toda *et al.*, 1990).

The evidence for different conversational interactions could also be found in the study of children's narrative patterns in mother-child dialogues (Minami & McCabe, 1995). They identified a cross-cultural difference in the style of narrative elicitation. Japanese mothers provided less evaluation but more verbal attention to children than did US mothers. The culturally specific conversation styles, such as providing more verbal attention to their child and fewer evaluative comments, were found in Japanese mother-child pairs who lived in the US (Minami, 2003). Such interaction styles also appeared to be transmitted in the way children conversed with their mothers. Japanese children's utterances per turn were significantly shorter than American children's; Minami and McCabe interpret this brevity of their utterance as indication of seeking conformity from their mother and a somewhat implicit way of expressing themselves. This comparative study illuminated the difference in the degree of frequency as well as the proportion of particular features in parent-child conversations. Such a difference in conversational styles, as well as in the way of expressing one's experience, may be culturally defined and transmitted through social interaction with a caregiver during childhood.

Overall, it is generally recognised that Japa-

nese mothers' interaction styles are less information-oriented and more affect-oriented than those of American mothers. It is possible to say that interaction styles of typical Japanese mothers reflect the culturally constructed values of child-rearing (Super & Harkness, 1982, 1997). These interaction styles may play an important part in nurturing children who will be valued in Japanese culture, rather than learning many more words to become a competent speaker of Japanese.

From the preceding review, it has become clearer that Japanese mothers' interaction styles are less informative and implicit. In terms of scaffolding the child to become accustomed to individuated psychological states, such styles may not be sufficient. Thus, when the development of mentalising ability is assessed using the standard ToM task, Japanese children may lag behind those who received explicit facilitation of accessing people's psychological states in early years.

### **Future direction for studies: hypotheses to be tested**

This final section proposes future directions for ToM studies with particular reference to a cultural perspective. As Greenfield *et al.* argue, in order to show a complete picture for the two-pathway model of development, more research in cultures such as Korea and Japan that compare rural and urban ecologies are necessary. As for Japanese culture, there is a study suggesting that maternal interpretations of emotional incidence are different between rural and urban areas (Kakinuma & Uemura, 2001). This finding indicates that it is possible to

find different rates or trajectories of development in passing the standard ToM task, even within a culture depending on the socialisation processes that give a different emphasis such as individualistic versus shared thoughts. Longitudinal studies examining the characteristics of maternal mental state task and how it is related to later development of the child's socio-cognitive understanding could provide a way towards the explanation of human development.

Another possible direction for future studies is that a non-verbal false belief task (Onishi & Baillargeon, 2005; Southgate, Senju, & Csibra, 2007) can be used to study young children in these sociocentric societies. If children from these cultures show competence in anticipating false beliefs of the protagonist, it is possible to conclude that human infants can understand a person's false belief at the implicit level and that social interactions facilitate their implicit understanding to reach a fully matured level of understanding.

Finally, the constructionist view of the development of ToM understanding suggests that children are actively engaging in the social world. Socialisation processes are shaped by cultural values and such an influence may be significant for the children. Nevertheless, children are not just passive agents for receiving information and meaning as interpreted in the culture. Children's uptake of such influences will also play an important part in developing their mentalising ability. The degree to which the child makes the most of such input is due to a child's ability to process social information (direction of eye gaze, understanding intention) in the context. Investigations of how

culture influences social interactions as both input and uptake could bring about more fruitful outcomes in this area of research.

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