would not expect that any facilitative effect would depend only on the fact that pretense is involved, but rather also on the fact that such situations would require cooperative interaction in which children must coordinate their activity toward shared goals. This would require talking about human activity and the need to reach mutual understanding because the children are enacting some event together.

10. In considering the role of the child's abilities we recognize that our approach needs to be integrated with domain general approaches to children's reasoning about the mind (e.g., Frye et al. 1995a; Gordon & Olson 1998; Mitchell & Riggs 2000). The child must have an ability to pay attention to important aspects of social interaction and must be capable of achieving some distance between himself and the situation so he can reflect on it rather than act impulsively (Moses 2001). Furthermore, reasoning about situations that are not immediately present would require the ability hold in mind and to imagine aspects of situations (Harris 2000). Clearly, there is some distance to go in developing this aspect of our approach, but we suggest that a likely candidate for further study would be attentional capacity, which in Chapman's (1987b) approach has a role in understanding and reasoning.

11. Concerning autism, our position is consistent with Hobson's (1993; 2002) view of autism as due to a disruption in the child's ability to engage in affective interaction. In this article we have spelled out in further detail the nature of this interaction beyond infancy and the role of language in social cognitive development. However, we have not applied the issue of autism to our analytic framework because it is associated with so many other social and cognitive problems and differences from the typically developing population that no conclusive statement can be made here.

12. This focus on the role of relationships in development, as well as what the child brings to the relationship, allows us to think about both atypical development and research with nonhuman primates. Here our approach is consistent with Tomasello's (1999b) position that what is required in typical social cognitive development is both normal neurological development as well as the right social and cultural conditions. In children with autism we see biological abnormalities hindering the children's ability to engage with others in ways that are essential to normal social cognitive development, even though they have access to normal human social interaction (Hobson 1993). "Enculturated" apes – that is, chimpanzees and bonobos raised in a human linguistic environment – do develop more social cognitive and language skills than wild chimpanzees, but they can only go so far – not much beyond the level of a 2-year-old human child (Savage-Rumbaugh et al. 1993).

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What's new about social construction? Distinct roles needed for language and communication

Janet Wilde Astington

Department of Human Development and Applied Psychology, Ontario Institute for Studies in Education, University of Toronto, Toronto, Ontario M5S 1V6, Canada. **jwastington@oise.utoronto.ca**
http://fcis.oise.utoronto.ca/~jwastington/

Abstract: Carpendale & Lewis's (C&L's) theory falls in with an existing set of theories that children's understanding of mind is collaboratively constructed in linguistically mediated social interaction. This social constructivist view needs to be clear about the complementary contributions of the child and of the social environment. I distinguish between the child's individual linguistic ability and the dyad's social communication, proposing that each makes a contribution to theory-of-mind development, differently balanced in different individuals.

Rejecting two contrasting paradigms, Carpendale & Lewis (C&L) offer their explanation of children's theory-of-mind development as a supposedly new alternative to existing theories. On one hand, they reject explanations that posit theory development, simulation, or innate modules because these are too focused on autonomous individual development. On the other hand, they reject enculturation explanations because, in their view, such explanations allow the child no active role. The internalist theories that they reject are well described and supported in the literature, whereas, as they concede, the externalist view is hard to find (perhaps it is best, if briefly, exemplified in Rogoff et al. 1993).

Social construction. I agree with C&L that we need an explanation integrating the individual and social aspects of development; and I am sympathetic to their account, accepting it as an alternative to the internalist, individualistic explanations and the externalist, passive enculturation explanation, all of which the authors explicitly reject. I find it harder, however, to regard theirs as a particularly novel approach. Although some terms and details may differ, it is best located within an existing group of social constructivist explanations of children's developing understanding of mind (e.g., Boyes et al. 1997; Dunn 1996b; Fernyhough 1996; Garfield et al. 2001; Harris 1999; Montgomery 2002; Nelson 1996; Shatz 1994). I would also place my own views here – let me resolve, in passing, the ambiguity that C&L detect in my earlier writing (e.g., Astington 1996; Astington & Olson 1995). I do not believe that children's theory of mind develops by a process of passive enculturation. In my view, it is an error to assume that "cultural concepts can be acquired from participation in a social context simply because they are manifest there" (Astington & Olson 1995, p. 186).

Although I accept that there is need for "an alternative theoretical account that is more consistent with the accumulating evidence of the important role of social interaction in the development of children's social understanding" (target article, sect. 2.2, penultimate para.), I would argue that a number of such alternative accounts already exist in the literature. C&L share with Nelson (1996) and Montgomery (2002) the Wittgensteinian idea of acquiring meaning from use; they share with Harris (1999) and Fernyhough (1996) the idea that children are exposed to variation in belief as they enter into conversation with others; they share with Dunn (1996b) a focus on the relations between people; and so on.

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Hence, C&L's proposal falls in with an existing set of theories that children's understanding of mind is collaboratively constructed in linguistically mediated social interaction. Their account accords a central role to triadic interaction involving a dyad – the child and another person – communicating about some object or aspect of the world. What is needed is a more detailed and precise account of the mechanism whereby this leads to an understanding of mind. From a social constructivist perspective, it is important to be precise about those abilities of the child that allow for participation in the constructive activity, lest we slip back into passive enculturation. Perhaps by distinguishing between children's individual linguistic ability and their participation in dyadic linguistic interactions (although obviously these two are related), we will be able to formulate a social constructivist view that recognizes the contribution both of the child and of the social environment.

Language and communication. It is problematic that C&L use three terms somewhat interchangeably: social interaction, communicative interaction, and language. In my view, it is important to distinguish clearly among these. One could use the term "language" to refer to the child's individual linguistic ability and "social interaction" to refer to the joint activity within triadic interaction, reserving the term "communicative interaction" for discourse-based social interaction (although this last may be less than satisfactory because it obscures the importance of nonverbal communication). My point is that, defined in this way, language and social interaction/communication may play different and complementary roles in theory-of-mind development and, further, that there may be both individual and developmental differences in their relative importance. Some evidence exists in support of this suggestion.

First, deaf children with deaf parents develop false-belief understanding within the typical time frame, whereas deaf children with hearing parents do not do so (Peterson & Siegal 2000). Both sets of children engage in triadic social interaction, which is communicative even if nonverbal. However, only the children with deaf parents develop language – sign language – within the typical time frame. This suggests that the child's individual linguistic ability plays a role in the development of theory of mind independent of that played by social communication.

Second, children with autism have deficits in theory of mind and in the development of communication and language skills. High-functioning children with autism do develop false-belief understanding, but later than typically developing children do. Moreover, those who do pass false-belief tasks have a higher level of general language ability than that of typically developing children who can pass false-belief tests (Happé 1995). This suggests that the autistic children are using their individual language skills to compensate for their lack of social communicative interaction (Tager-Flusberg 2002).

Third, there is evidence for the interaction of family size (indicative of the amount of child-child social activity) and individual language ability in theory-of-mind development (Jenkins & Astington 1996). We showed that the false-belief test performance of children with lower language ability and two siblings was equal to that of children with higher language ability and no siblings, whereas children with lower language abilities and no siblings performed more poorly. This suggests that individual language skills and social interaction both contribute to theory-of mind development and that either one of these can compensate for a deficit in the other.

Fourth, in a training study designed to develop false-belief understanding (Lohmann & Tomasello 2003), positive effects were found in two conditions: conversation about deceptive objects (using no mental terms and no syntactic complementation in the discourse) and specific training on the syntax of complementation (in the absence of deceptive objects). Moreover, the largest effect was found in a condition where these two were combined (conversation and complements). Again, this suggests that social interactive discourse and individual language abilities make somewhat independent contributions to theory-of-mind development.

Different routes to common outcomes. In conclusion, I would argue that theory of mind is a fundamentally important aspect of human development which is likely to be overdetermined. That is, it is likely that there is more than one cause of its development – individual linguistic ability and social interaction are two discussed here – with different balances in different individuals, and perhaps with the balance shifting over developmental time, as Hughes et al. (2002) suggest.

The role of social experience in advanced social understanding

Robin Banerjee

Department of Psychology, University of Sussex, Falmer, Brighton BN1 9QH, United Kingdom. **R.A.Banerjee@sussex.ac.uk**
http://www.cogs.susx.ac.uk/users/robinb

Abstract: Carpendale & Lewis (C&L) rightly emphasise the central role of social interaction in the development of children's understanding of mind. Further support and justification for their theoretical focus are provided by research on advanced reasoning about socio-emotional and socio-motivational processes. Variability in social experience can explain both developmental change and within-age-group differences in such social understanding.

In the constructivist framework presented by Carpendale & Lewis (C&L), a central role is assigned to children's social experience as an essential foundation for gradual social-cognitive development. The authors indicate the potential significance of findings regarding relatively advanced (beyond five years of age) reasoning about the psychological and social worlds, especially in view of evidence that simple false-belief measures have only limited value for predicting variability in children's everyday social behaviour. Brief reference is made to children's understanding of the interpretive nature of knowledge (e.g., Carpendale & Chandler 1996), but the analysis would be strengthened by considering additional evidence regarding primary schoolchildren's cognition about the emotional and motivational processes involved in everyday social interaction. Both developmental change and within-age-group differences in this social understanding reflect children's experiences of social interaction. Indeed, Dunn's (1996a) insightful reminder to address the role of social relationships in social understanding should hold through the course of childhood social-cognitive development.

Research on social cognition has demonstrated many developmental changes beyond the age of five years. Taking emotion understanding as an example, we see primary school children learning about self-regulation (in terms of both private coping and public display), about emotional ambivalence, and about complex emotions involving reflections on the self, on others, and on social standards (e.g., Meerum Terwogt & Stegge 1996). Similarly, researchers have developed a range of advanced theory-of-mind tasks covering, for example, children's reasoning about second-order false beliefs (e.g., Sullivan et al. 1994), about faux pas (Baron-Cohen et al. 1999), and about irony, sarcasm, and double bluff (Happé 1994). There is also evidence of change in children's broader understanding of people, such as in their conception of dispositions or traits (e.g., Yuill & Pearson 1998). Research on these topics may provide strong evidence concerning the role of social interaction in children's social understanding.

One feature of advanced social understanding emphasised by Carpendale and Chandler (1996) concerns the fact that different people may hold varying beliefs about the same perceptual stimuli. In that paper, the authors found that only from around seven or eight years of age did children appreciate the validity of multiple interpretations of a range of stimuli (e.g., in the domains of lexical ambiguity, ambiguous line drawings, and ambiguous referential communication). It is reasonable to suppose that this

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