

The *theory* of theory of mind advanced by Carpendale & Lewis could thus be bolstered by incorporating the burgeoning knowledge on the nature of parent-child interactions and on individual variations in dyadic emotion-regulation patterns out of which emerges a sense of self. Recent theorising and research on infant development underscores how early and in what contexts the sense of agency and relatedness may be observed to thrive or suffer (Koulomzin et al. 2002; Schore 1994; Stern 1985; Trevarthen 2003; Tronick & Weinberg 1997). Further data from diverse sources, such as facial affect recognition (Skuse 2003), are converging to elucidate a more detailed understanding of emotional development.

One would wish to heed the sympathetic call by C&L to take account of the infant's social context, dyadic, triadic, and beyond. However, the extent to which this is a new call or an old echo is debatable. Consider the continued relevance of Bronfenbrenner (1979) or psychoanalytic object-relations theorists. Beyond Bowlby, the words of Donald Winnicott come to mind: "there is no such thing as a baby." This provocative statement draws immediate attention to the baby's social context. At the same time, Winnicott did not underestimate the paradoxical – both individualistic and social – challenge of development. Healthy psychological development, he urged, is likely to be secured by cultivating and protecting the capacity to be alone in the presence of another (Winnicott 1965).

C&L find support for their approach in the findings that "secure" attachments appear to facilitate the development of a theory of mind. In our own longitudinal attachment research (Steele et al. 1996), we have also observed advanced theory-of-mind skills not only among infants with a history of a secure attachment, *but also* among those with a previously observed highly anxious/fearful, disorganised attachment to mother (Fonagy et al. 1997). Notably, these successful predictions from infant-mother attachment security at one year to theory-of-mind performance at age five were in respect of belief-desire reasoning skills, that is, where the child was required to guess correctly the *feeling state* of a deceived puppet. Attachment security did not predict belief-belief reasoning, that is, where the child was required to guess correctly the *behaviour* of a doll acting on information that is no longer valid.

Thus, the relations between infants' social experiences and the evolution of their theory-of-mind skills are likely to depend on the extent to which the context loads more on the social-emotional register as opposed to the cognitive-behavioural one. Also, given the similar performance we have observed in children with organised-secure and disorganised early attachments, we must not assume that similar phenotypic outcomes share the same type of social determinants. In one case a child may be advanced in theorising about emotion because one or both parents have provided much helpful talk about feelings (Dunn et al. 1991a). In another case, the child may be advanced because the parent was liable to unpredictable and frightening behaviour such that the child needed to know when to run or hide. The value of quickly detecting (on the caregiver's face) the imminent rise of anger *before* it reaches its full-blown potential (when this has previously led to abusive behaviour from the caregiver) cannot be underestimated (see Pollak & Sinha 2002).

Hence, the long-term effects of early social experience are likely to be manifest in the domain of emotion recognition and emotion understanding (Steele et al. 1999) and social cognition (Steele et al. 2002) and not necessarily in the broad cognitive domain, to which most theory-of-mind tasks belong. In other words, a *social* constructionist account of *social* cognition may be highly apt, but an individual-differences and emotion-focused account of many aspects of cognition may nonetheless have continued relevance.

The internalization of mental state discourse contributes to social understanding

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Abstract: Children's exposure to and participation in mental state discourse contributes to their development of social understanding. Vygotsky's mechanism of internalization is used to account for this process, which has advantages of cultural and linguistic universality. If children internalize mental state discourse, however, then their own use of mental state language should be related to social understanding.

Carpendale & Lewis (C&L) are commended for their social constructivist account of the origins of social understanding. They provide a theoretical context for recent work which has shown that various features of the early social environment of children are related to their concurrent and later performance on false belief tasks, tasks which are seen as indices of theory of mind, specifically, or social understanding, more generally. Their approach brings together social and cognitive development research domains, which have proceeded largely in isolation from one another for decades (with several noteworthy exceptions), very like the parable of the learned blind men of Hindustan examining different parts of the social understanding elephant.

To support their thesis, C&L review research on the impact of social discourse. This research has shown that social understanding develops relatively earlier in children exposed to mental state language in a variety of interactional contexts that include play interactions with peers and siblings, parental discipline, and joint reading with parents (e.g., Meins et al. 2002; Ruffman et al. 2002). Further, a series of training studies (e.g., Appleton & Reddy 1996; Slaughter & Gopnik 1996) lends experimental evidence to the claim that exposure to discourse about mental states can enhance children's performance on false belief tasks. Issues arise which include drawing causal inferences from longitudinal and experimental data, the external validity of false belief tasks, and the largely unknown cultural specificity of links between relationship variables, language, and social understanding. But the evidence is compelling.

However, C&L have been tentative in delineating a mechanism for the developmental relation between interpersonal factors and social understanding. For example, in the concluding comments of this paper, C&L highlight the recent and persuasive findings of Meins et al. (2002) that mental state discourse of parents predicts children's false belief understanding four years later. They then pose the question: "What is it about the nature of these parents' interactions with their infants that correlates with the development of social understanding?" (target article, sect. 5, para. 4). Re-framed, the critical question could be: How does exposure to discourse about mental states lead to enhanced social understanding in children? An answer lies in Vygotsky's mechanism of internalization (see Bruner 1986; Lloyd & Fernyhough 1999; Vygotsky 1978; 1986).

Vygotsky proposed that children internalize social speech, and such internalization socializes a child's practical intellect. Higher-order thought originates in the internalization of external social relationships and meanings, not by merely imitating the external in the internal, but by recoding what is known about the external into the internal (C&L's "reconstruction of knowledge," target article, Note 2). Applied to social understanding, mental state discourse leads to young children internalizing the notion that others can have thoughts and emotions that differ from their own. Children experience discourse about thoughts and beliefs of others and integrate such talk into their own behavior. This is fundamental to self-other understanding and passing false belief tasks.

C&L actually discuss internalization earlier in the article, but it

is not in Vygotsky's framework. Instead, Piaget and Wittgenstein dominate the theoretical approach of this article, even though Vygotsky, and even John Bowlby, are social constructivists who have discussed social mechanisms by which cognitive processes arise. Piaget was simply not a social constructivist. However, emphases on consistencies as opposed to differences between theoretical approaches are critical to developing coherent developmental theory, much like an exchange of information between the blind men from Hindustan before definitively declaring what they have discovered.

C&L conclude that "researchers studying talk about the psychological world should be concerned not just with mental state terms but more broadly with talk about human activity" (sect. 5, para. 4). Data suggest that it is discourse about mental states of self and others that predicts social understanding, not discourse about behavioral or physical attributes. Internalization must have a cognitive basis, and this basis may relate back to Piaget's schemas or John Bowlby's working models of self and other. This is the common mechanism of social understanding and relationship processes that is being intensely examined in current developmental research on mental state discourse (see Symons 2004).

Another advantage of Vygotsky's concept of internalization is that variation in language and culture are accommodated as children internalize what they experience in what C&L call triadic interchanges. Although there are potential variations between groups in language and culture, as well as rate of acquisition of self–other understanding, ultimately all developmentally intact children come to some understanding that others have mental events that can differ from their own: what has been described as a "human universal" in self–other understanding.

But if mental state discourse is socialized into children, is it reflected in children's own language use? Researchers have been careful to examine parents' use of mental state discourse in the presence and absence of children, but have largely ignored children's own discourse about mental states outside of social situations. Children's discourse in solitary tasks may be important to examine. For example, in our recent analyses of children's spontaneous discourse in Canadian and Australian samples (Symons et al., in press), children's use of mental state language during storytelling tasks correlated as high as .62 with performance on a battery of false belief tasks, even with general language ability controlled. It would therefore seem appropriate that children's self-talk about mental states within their sociocultural context be included in any developmental model that leaps from parental mental state discourse to children's social understanding, which C&L address in their discussion of a Wittgensteinian approach to private language. Internalization can be seen as a social process, but is rendered meaningless unless specific cognitive and linguistic mechanisms are added so that we can address the following: Internalized into what? Encoded how? Carried forward in what fashion? With what meaningful life impact? Answers to these questions cannot be fully addressed from a single perspective.

The mind in the mind of the beholder: Elucidating relational influences on early social understanding

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Abstract: Relational experiences shape emergent social understanding, and two influences deserve particular attention. First, parent-child conversation about shared experiences incorporates both implicit and explicit information about mental states that catalyzes the social construction of understanding, especially in juxtaposition with the child's direct experience. Second, emotion infuses the contexts and cognitions about social experiences that provoke the child's constructivist efforts.

There have already been many responses to what Carpendale & Lewis (C&L) are calling for in the target article: namely, greater theoretical attention to the influence of social interaction on the development of children's social understanding. These include Rogoff's (1990) constructivist view of the appropriation of social cognition in shared activity, Nelson's (1996) portrayal of the growth of the linguistically mediated mind, and the inquiry of theory-of-mind researchers into social influences on psychological understanding (e.g., Lagattuta & Wellman 2002). Social developmentalists have also been concerned with the influence of social interaction on mental representation. Attachment theorists, for example, believe that representations (or "internal working models") of people, self, and relationships arise from variations in attachment security and patterns of communication shared within secure or insecure parent-child relationships (Bretherton & Munholland 1999).

The view that communication within salient relationships shapes early social understanding provides an opportunity to better understand the processes by which social interaction is influential. This is one of the future directions for research identified by C&L, but we believe there are at least two relational influences that are neglected in their analysis and that deserve greater attention. The first concerns explicit and implicit features of conversational discourse between parents and children. There is now an expanding research literature showing that mothers' conversational style with young offspring – especially, the extent of the elaborative detail, contextual information, and provocative questions mothers provide – contributes not only to the sophistication of children's event representation but also to their understanding of emotions, conscience development, autobiographical memory, and other features of social cognitive growth (Thompson 1998). Maternal conversational references to people's feelings and emotions are also related to young children's emotion and moral understanding (Thompson et al. 2003).

Mothers in secure attachment relationships are more elaborative in conversational discourse (and also make more frequent references to emotion), and this may be one reason for the working models their offspring develop (Thompson 2000). Elaborative discourse about shared experiences in the context of a generally warm, secure relationship may enhance children's receptiveness to the understanding of psychological states embedded within such conversations. For this reason, we are exploring in current research the association between maternal "mind-mindedness" (Meins 1999) and elaborative discourse to elucidate avenues by which attachment security and social cognitive development may be related. This work also offers avenues for clarifying the nature and development of the "internal working models" of interest to attachment researchers (Thompson & Raikes 2003).

Discourse quality in parent-child conversation is important not only for the reasons identified by C&L (e.g., as a means for becoming aware of beliefs; as a way of representing false belief in contrast to reality), but also as a means for understanding the social constructivist processes within relationships that they emphasize. In conversation about shared experiences, the secondary representations provided in parental discourse are juxtaposed with the child's direct representations through experience; and the convergence, dissonance, complementarity, and differential focus of these representations are a rich basis for the constructivist processes described by C&L, because parents and children often perceive shared experiences differently (Levine et al. 1999).

This work therefore significantly expands the authors' proposals for how relationships influence social-cognitive growth in early childhood, and suggests also that relational quality as well as variations in the nature of parent-child discourse – including nonverbal features of parent-child conversations, such as affect, gesture, and context – contribute significantly to representations of mental and psychological functioning of young children. Early parent-child conversations are important not only because they offer guidance to young children concerning the relations between behavior and people's thoughts, feelings, and beliefs, but because