ther, there are also non-introspectionist versions of simulation theory (e.g., Gordon 1992).

Finally, the authors note the robust correlation between social understanding and language ability. One caveat is that this relation might hold only for explicit performance on theory-of-mind tasks. Preliminary evidence indicates that language might not correlate with implicit understanding (Ruffman 2000). In addition, although some might take the language–social understanding relation as evidence for individual, nonsocial factors affecting theory-of-mind development, there is a way of reconciling this relation with the social constructivist view. Mother mental state language is highly related to (1) child mental state language (e.g., Brown & Dunn 1992; Ruffman et al. 2002); and (2) child mental state understanding (e.g., Dunn et al. 1991b; Ruffman et al. 2002). In addition, aspects of mother language (e.g., question asking) are related to later aspects of children's expressive, syntactic language and vocabulary (Hoff-Ginsberg 1986; Hoff-Ginsberg & Shatz 1982; Weizman & Snow 2001). It is entirely possible that the link between child language and theory of mind would be at least partially mediated through parents' linguistic input (e.g., mother language facilitates child general language which facilitates child theory of mind).

Wittgensteinian developmental investigations

John Shotter

Department of Communication, University of New Hampshire, Durham, NH 03824-3586. **jds@hypatia.unh.edu** **http://pubpages.unh.edu/~jds**

Abstract: I criticize Carpendale & Lewis's (C&L) attempt to produce a Wittgensteinian *theory*, as an alternative to work in the "theory of mind" tradition, not because I disagree with it as theory, but because Wittgenstein would be critical of any attempt to make such a use of his work. His concern is with descriptions, not theories.

Carpendale & Lewis (C&L) want to criticize the whole "theory of mind" tradition in developmental research for its grounding in "individualistic processes." Instead, they want to propose an "alternative theory" drawing on, among others, Vygotsky and Wittgenstein, but especially on "Wittgenstein's arguments." I wholeheartedly endorse their turn to Wittgenstein. However, I am still critical of *their use* of material from Wittgenstein's later philosophy. For, after all, in the *Investigations* he notes with respect to his methods of inquiry that:

> It was true to say our considerations could not be scientific ones . . . we may not advance any kind of theory. There must not be anything hypothetical in our considerations. We must do away with all explanation, and description alone must take its place. (Wittgenstein 1953/1968, No. 109).[1]

His argumentative *and other kinds of remarks* are aimed at a quite different kind of investigation from those of a scientific kind.

Although Wittgenstein is not critical of science as such (in its own, proper context), the whole scientific approach is in fact inimical to the character of his investigations. His investigations are of a *grammatical* kind. Wittgenstein's remarks are thus not at all aimed at *arguing for what is in fact the case*. They are to do with "giving prominence to distinctions which our ordinary forms of language easily make us overlook" (No.132), with drawing our attention to "what is possible *before* all new discoveries and inventions" (1953/1968, No.126) – they are expressions of a concern with what already lies "seen but unnoticed" (Garfinkel 1967, p. 36) in the background to *all* our everyday (*and* professional) communicative activities. Although each of us might uniquely do our own thing – like taking our own particular path through a landscape – if we are not to mislead or confuse those around us, they must be able to see how the path we are taking relates to those possible for them; if they are to coordinate their activities with ours, they need to know, not what we are actually doing now, but its "point," what

it is aimed at in the future, where we are trying to get to; they must be able to "follow" us. Whereas in scientific investigations, "we feel as if we [have] to penetrate phenomena," says Wittgenstein (1953/1968), his grammatical investigations are "directed not towards phenomena, but, as one might say, towards the 'possibilities' of phenomena" (No.90). Hence, theories (and arguments in their support) would be necessary in these investigations only if one were convinced that the influences shaping people's behavior in this grammatical fashion were so radically hidden that they could be discovered only indirectly, by a process of scientific investigation. Whereas, as Wittgenstein (1953/1968) notes: "If it is asked: 'How do sentences manage to represent?' – the answer might be: 'Don't you know? You certainly see it, when you use them.' For nothing is concealed" (No. 435). Indeed, they cannot be concealed, else all around us would have to orient toward us as aliens from another planet.

In other words, like C&L, Wittgenstein sees *all* the events of importance in our teaching our children to be like ourselves (as well as in our coming to an understanding of each other's unique "inner lives") as occurring "out there" in the living *relations* between ourselves and the others and othernesses around us. But, as Wittgenstein (1953/1968) realizes, the relevant events are of such a subtle and complex kind, and "it all goes by so quick" (No. 435), that we cannot easily get an overall view of them. A visual grasp allowing us to *survey* all their detailed interconnections at once – hence, to know ahead of time what might follow from what – seems, at first, impossible.

It is at this point, however, that Wittgenstein and C&L part company. For what C&L miss, as indeed the whole tradition of "scientific" inquiry in psychology misses, is the fact that certain socially shared influences, influences that Wittgenstein calls "grammatical" influences, are always ineradicably at work between us in our use of language. Although we easily fail to notice them because of their socially distributed nature, it is the undeniable fact that these influences are always present in our meetings with each other which he wants to bring to our attention. The meanings of the words we use in our utterances are not, and never can be, a matter of our own choosing.

Because the events relevant to our instructing our children and understanding each other's "inner lives" *are not in fact radically hidden*, Wittgenstein does not turn to theoretical claims and conjectures in their investigation. This is where his later philosophy is quite revolutionary. He introduces a whole compendium of devices – vignettes, dialogues with other "voices," arguments, dramatic scenes, metaphors and similes, striking examples, subtle particularities, and so on – all aimed, not at learning "anything new," but at "understanding something that is already in plain view . . . something that we need to remind ourselves of" (No. 89).

In practice, then, Wittgensteinian investigations into child development would not involve researchers in continually arguing for theories, either in terms of evidence derived from attempts to test them empirically, or conceptually in terms of whether they adequately encompass all the relevant phenomena or not. They would face a different kind of task. Just as we come to know our "way about" inside a particular new house or city by taking the trouble to explore connections between its unique details to gain a sense of what leads to what, so we can gradually develop the same kind of clear understanding of what is involved in our children coming to an understanding of others' minds. And to be confident in this way, we do not feel that we need to be able to write out the whole town map. For Wittgenstein wants in his investigations "to replace wild conjectures and explanations by the quiet weighing of linguistic facts" (1981b, No. 447), thus to produce merely a *description* of the facts that matter in the issue concerned – a description which, if one was initially intellectually disoriented,[2] *justifies* saying to those around one (at least for the immediate, practical purposes in hand): "Now I know how to go on" (1953/1968, No.154). C&L take Wittgenstein's philosophy piecemeal; it needs to be taken as a whole.

NOTES
1. All date-only citations are to Wittgenstein's works.
2. "A philosophical problem has the form: 'I don't know my way about'" (1953/1968, No.123).

Social understanding and the cognitive architecture of theory of mind

Michael Siegal

Department of Psychology, University of Sheffield, Sheffield S10 2TP, United Kingdom. **M.Siegal@sheffield.ac.uk**
http://www.shef.ac.uk/psychology/staff/siegal.html

Abstract: Although Carpendale & Lewis (C&L) correctly emphasize the importance of conversation in children's social understanding, they neglect several complex issues. Contrary to their assertion, the focus on mental state processing has not been misplaced, and there is a need to recognize that different aspects of social understanding are liable to undergo distinctive developmental changes that vary in relation to social interaction.

Carpendale & Lewis's (C&L's) article is a welcome addition to the debate on the relation between language and theory-of-mind reasoning that has been stimulated in two recent related *BBS* target articles (Bloom 2001; Carruthers, in press). According to C&L, "A common problem with the dominant perspectives of the field is that each focuses on the cognitive architecture of mental state reasoning, without reflecting on the social landscape in which such reasoning is constructed" (target article, sect. 2.2, last para.). The main motivation for the social interaction approach that C&L propose is the observation that social understanding develops gradually and that research on social understanding is overly fixated on theory-of-mind false belief tasks that prevent us "from examining the longer view of development" (sect. 4.1, penultimate para.). In their proposal, C&L rightly highlight the central role of conversation in development. However, they do not adequately recognize that this role varies according to different aspects of social understanding, and they gloss over the fundamental distinction between having the concept of belief and differences in how specific beliefs are used in judging persons and situations (Scholl & Leslie 1999).

It is no wonder that so much attention has been fixed on the core cognitive architecture of theory-of-mind (TOM) reasoning that involves knowledge of how mental states such as beliefs may not conform to reality. Correlations between performance on TOM tasks and opportunities for positive social interaction from peers and siblings are consistent with the notions that forms of social interaction speed up the manifestation of TOM reasoning and that having TOM may be a good thing for a wider social understanding (Peterson & Siegal 2002). However, as shown on tasks involving predictions of the behavior of a protagonist who holds a false belief, TOM is achieved by all typically developing children by about four to five years of age. Modifications to the structure of these tasks in order to ensure that children understand the relevance and purpose of an experimenter's questions reveal competence at an earlier age (Siegal 1997), and, to a considerable extent, the tasks themselves really amount to tests of children's conversational understanding (Bloom & German 2000). Early immersion in conversation with others may suffice to trigger the display of TOM reasoning even in three-year-olds, alerting children to the fact that others are repositories of information about mental states that may differ from one's own, and from reality.

But obstacles to conversational understanding and hence TOM reasoning can occur. Conditions such as deafness, autism, and anarthria often do not permit the child to engage even minimally in conversations that permit insight into the nature of mental states. In all these cases, children may function quite normally or even excel in situations that involve reasoning about number, biology, or physics and yet have protracted difficulty on TOM tasks. This pattern of results is of great significance to developmental psychologists and cognitive neuroscientists, as it points to the possibility of early auditory and attentional barriers that preclude participation in conversations and success on TOM tasks (Siegal & Varley 2002). The diagnosis of such barriers promises to alleviate the social isolation of children with developmental disorders, in the process enhancing their communication and literacy. A neurocognitive approach is fundamental to the study of this aspect of social understanding.

Unlike the concept of belief, specific beliefs do vary in typically developing children. In particular, children may vary in their specific beliefs about the usefulness of false belief knowledge in answering questions about what they and others know. C&L cite a study by Varouxaki and colleagues (1999) suggesting that many (but not all) five-year-olds neglect to report knowledge that can be inferred or deny that they are ignorant despite a lack of knowledge. They interpret these responses to reflect the development of beliefs beyond those shown on TOM false beliefs tasks. Yet, in this instance, forces of enculturation and language may either render some children to be more modest than others in their interpretation of knowledge (Lee et al. 1997), or prompt children to give affirmative or other perseverative responses in situations in which they do not yet understand the purpose and relevance for the task at hand (Deák et al. 2003; Fritzley & Lee 2003). Such beliefs involve an altogether different aspect of social understanding from that of simple TOM reasoning – one that does need to be considered on its own merits in terms of social interaction influences.

Therefore, whereas the expression of TOM reasoning itself can be viewed in terms of a "poverty of the stimulus" analysis in that, like the syntax of language, only a minimal environmental input seems to be needed for it to emerge, social interaction can powerfully influence specific beliefs about the knowledge, emotions, and intentions of others. Gradually, the massive cultural differences in adult beliefs come to be reflected in children's beliefs (Hejmadi et al., in press; Shweder et al. 1998) – a development that is distinctive from the core cognitive architecture of TOM.

Can differences in specific beliefs be explained solely through the Piagetian constructivist processes that C&L advocate? It is likely that different aspects of social understanding undergo distinctive developmental changes, much as does development in various scientific domains such as biology, cosmology, and physics (Siegal 2002). For example, in reasoning about food, particularly the edible-inedible distinction that is close to survival, children are constrained to initiate conversations in order to meet the sharply defined goal of avoiding contamination. By contrast, no such conversations are necessarily forthcoming on cosmological knowledge. For children to know about the shape of the earth and the day-night cycle may require direct cultural transmission in school. A constructivist account does not fully characterize either of these changes. Similarly, the landscape of social understanding is huge. It includes the interpretation of facial expressions and the acquisition of cultural traditions of dietary laws and other social customs. We await an analysis dedicated to how children's understanding of such varied aspects of the social world comes about.

Acts of judgment, not epistemic triangles

Leslie Smith

Department of Educational Research, Lancaster University, Lancaster LA1 4YL, United Kingdom. **l.smith@lancaster.ac.uk**
http://www.lancs.ac.uk/staff/erals/

Abstract: Carpendale & Lewis's (C&L's) reanalysis of Chapman's (1999) epistemic triangle dealing with the coordination of interactions with physical objects and people's communication is misleadingly incomplete. An alternative proposal is outlined combining the causality of action with the normativity of knowledge in acts of judgment. This alternative is empirical and developmental, with a focus on rich but neglected phenomena.