children regard mental states as *private* and *internal* sensations that are causally related to, and distinct from, outward behavior and other mental states. The meaning of children's language about the mind is derived from its referential association to these corresponding mental concepts. But this picture is essentially wrong from a social constructivist view, for a number of reasons (see Montgomery 2002), some of which are discussed by C&L (sects. 2.2 and 3.2). One problem is that the theory view lacks a plausible account of how a meaningful language could be developed by a process of labeling private and internal referents. For example, obstacles to word learning arising from the indeterminate nature of referential labeling are only exacerbated when the referent is both internal and private, and it is unclear from the theory-theory position how children would overcome such obstacles (Montgomery 2002).

Figuring out word-referent relations for various mental states is not a fundamental component of social understanding. Children learn about the mind through communicative interactions, and linguistic meaning follows from how mental verbs are used in discourse rather than from the nature of a referent they are labeling. Indeed, Wittgenstein (1958, para. 293) suggests that the nature of a referent can be irrelevant to linguistic use:

> Suppose everyone had a box with something in it: we call it a "beetle." No one can look into anyone else's box, and everyone says he knows what a beetle is only by looking at his beetle–Here it would be quite possible for everyone to have something quite different in his box. One might even imagine such a thing constantly changing–But suppose the word "beetle" had a use in these people's language?–If so it would not be used as the name of a thing. The thing in the box has no place in the language-game at all; not even as a something: for the box might even be empty.

What communicative end is achieved by pointing, in a sense, to an internal sensation? How often does a child simply say, "I wanna," where the communicative end is simply to reveal that the speaker is presently experiencing the sensation of desire? One can imagine such an utterance as making sense only in the context of obtainment. The necessity of explicitly or implicitly attaching the verb to a complement, "I want *that* x," underscores that the central communicative end of using "want" is to express obtainment.

Understanding the pragmatic ends toward which mental verbs are aimed is a critical plank in the research agenda for social constructivists. This agenda reflects the importance of studying forms of understanding that precede explicit comprehension indexed by theory-of-mind tasks (sect. 5). Forms of social understanding especially pertinent to the prelinguistic child concern the communicative purpose of a word rather than figuring out, through inference and introspection, a preverbal mentalistic referent. Consequently, investigators should find that these pragmatic ends are evident to the prelinguistic child. For example, if "want" is used to express obtainment, then the linguistic stimulus ("the [actor] wants [that target]") should be associated by infants with scenes where an actor is pulling a target object toward herself rather than scenes where the actor is pushing away the target. Verb comprehension would be evident in this test when children look longer at the scene matching the linguistic stimulus (see Hirsh-Pasek & Golinkoff 1996). Experimental tasks of this nature point the way toward illuminating the interpersonal and social features from which mental concepts originate. And this is a central goal for social constructivist theories of social understanding.

Toward a collaborative community of minds

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Abstract: Three points extend the authors' comprehensive and provocative argument: (1) The idea of "entering a community of minds" is suggested to replace theory of mind or social understanding; (2) learning words and concepts through a Wittgensteinian process often involves a period of "use without meaning"; (3) concepts based in social interaction are achieved through collaborative – neither individual nor social alone – construction.

Carpendale & Lewis (C&L) have done the field a great service in assembling the theory and evidence for a social interaction account of the development of social (and psychological) understanding in infancy and early childhood. In doing so, they have also clarified the distinction between an enculturation model of development and a constructivist model based in triadic relationships integrating individual and social dimensions.

This approach is broadly consistent with proposals and arguments that I, and my students, have made (Nelson 1996; Nelson, in press; Nelson et al. 1998; 2000; 2003; Nelson & Shaw 2002). From this perspective, I suggest that they present an excellent case but do not go far enough in a cultural-historical direction. This is not to endorse a radical relativism with regard to concepts of mind but rather to emphasize that a child's development of such concepts takes place within sociocultural-historical contexts. These contexts extend beyond triadic relationships to those embracing many community members who display increasingly various mental perspectives and attitudes toward matters of concern to the community.

Based on these concerns, we propose reconceptualizing "acquiring a theory of mind" as the process of *entering a community of minds.* This construct emphasizes the notion of a gradual approach toward the status of member of the community wherein matters of minds are of interest and concern and are topics of talk. These concerns involve plural minds, indicating that the problem for the child, as for people in general, is not just to track and coordinate the perspectives of the self and one other, but to embrace the idea that people in general have different knowledge about and perspectives on states of the shared world.

The problem of integrating early social understanding and interaction with the acquisition of language is viewed by the authors from a Wittgensteinian perspective of language as activity. They reject the prevailing view that concepts are acquired before words can be learned to express them, arguing instead that children learn concepts and words at the same time. Their brief discussion gives little hint of the radical position they are taking on language learning in relation to current conceptions of the process. Nonetheless, their view accords with the evidence not only from theory of mind but from evidence of word learning in natural environments, as they note in citing Nelson (1997). Further, a study of the acquisition of the words *know* and *think* by $2\frac{1}{2}$-to-4-year-olds in natural home contexts was reported in Nelson and Shaw (2002; Shaw 1999). There we showed that, consistent with the claims of the target article, these words were used casually by parents in activity contexts (playing, eating) most frequently to direct the interaction, with fewer uses referring to mental states. Most of the children of the ages studied knew and used the words in activity contexts consistent with the uses by their parents, but their reference to mental states was ambiguous at best, with little evidence of shared meaning for these terms, despite the shared usages.

The evidence supports the authors' claim that words and concepts are acquired together; I would add the caution that words are often "used without meaning" by the child for a long period (months or years) during which the concept remains partial or elusive. The criteria for the use of mental state words are difficult for a learner to discern for two reasons: on the one hand, the mental

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state concept (e.g., *know* or *think*) does not exist a priori in the child's mind and can only be inferred from opaque references to other words; and, on the other hand, the words themselves have many different uses in activity contexts, only some of which refer to mental states. Consider the mother saying "I think this one goes here," as she places a puzzle piece; in what way might a child differentiate this from the statement "this one goes here?" (The ambiguous meaning of *think* in everyday contexts and psychological tasks is discussed in Nelson et al. 2003.) These comments bear on the authors' research agenda for the study of the development of "shared meaning" (Nelson 1985), which they point out is one of the most difficult and important problems (and, I would add, most neglected) in developmental psychology.

The authors make an important point that children must assume that they live in "a common, stable, external world that is the same for the self and others." But as they note, this assumption is challenged when through language children learn that other people's experience is different. Coming to grips with this knowledge is the entry point to the community of minds and the foundation for the radical change in self and consciousness that takes place during the later preschool years, of which the standard theory-of-mind tasks have tapped one small piece. This knowledge depends upon evidence derived in social interactions but it does not come as a prepackaged concept; rather it requires knowledge construction from accumulating pragmatic evidence. At the same time it is a mistake, I believe, to suggest that the construction is achieved by the individual child, any more than to suggest that it is transmitted as a social construction from parent to child. Rather, the process may best be viewed as a collaborative construction in which the child's emerging awareness of different experiences and different perspectives is supported, explained, and elaborated by parents or others through everyday discourse.

One of the most important kinds of such discourse is talk about the past and the future – reconstructing memories of child and parent and forecasting coming activities. As recent work in the emergence of autobiographical memory has shown, more elaborative talk about the past by mothers is associated with more and earlier personal memories as well as better performance on theory-of-mind tasks by their preschool children (Reese 2002). This is but one indication that theory of mind is not a separate or modular achievement, but rather, one of an integrated complex of developmental moves taking place during the later preschool years, which bring the child to a new level of social and psychological understanding, preparatory to the further developments that will occur later during middle childhood.

Children's understanding of mind: Constructivist but theory-like

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Abstract: Although in general agreement with Carpendale & Lewis's (C&Ls) claims, I argue that (1) gradual development is better supported by within-task eye gaze/verbal comparisons; (2) gradual development and social construction do not contradict the theory-theory view; (3) there is good evidence for an early developing self-other distinction; and (4) the language–false belief link could be mediated by parental talk.

Carpendale & Lewis (C&L) argue against the notion that theory of mind is innate. They might concede, however, that there is likely to be some innate basis for theory of mind, such as newborn infants' interest in the eyes and face (Bakti et al. 2000; Johnson & Morton 1991). This interest means that infants' attention is focused on a region that expresses mental states so that they are ideally situated to learn about theory of mind either through their own initiative (e.g., by asking others questions about motivations for actions; Dunn 1988), or through others' initiative (e.g., through parent teaching or siblings' and peers' influence in play and elsewhere). C&L do a good job of discussing evidence in favor of this latter path and, in so doing, do the field a service.

C&L justify their claims about gradual development using contrasting results obtained with different false belief tasks. Yet differences in information-processing demands or in the concept actually tapped in different tasks weaken such arguments (Perner et al. 1994). A stronger case for gradualism might be made on the basis of within-task discrepancies (Clements & Perner 1994; Garnham & Perner 2001 Garnham & Ruffman 2001; Ruffman et al. 2001b). For instance, we found that children who passed an eye-gaze measure of a false belief task (looking correctly when anticipating a story character's return), but gave an incorrect verbal prediction, could be split into two groups (Ruffman et al. 2001a). The younger such children showed complete confidence in their verbal answer, betting all counters (used to indicate the character's predicted location of return) on the location consistent with their verbal answer. In contrast, some of the older children with correct eye gaze but incorrect verbal performance showed awareness of the knowledge manifest in their eye gaze by placing at least some counters on the location consistent with their eye gaze. Thus, confidence varied for children who showed identical performance on both the eye-gaze and verbal measures.

Likewise, older children who passed both the eye-gaze and verbal measures were not fully confident in their verbal answer, because they placed at least some counters on the location that was inconsistent with both their eye gaze and verbal answer. In sum, changes in eye gaze and confidence over time are consistent with the following pattern of gradual development: (1) children fail both eye-gaze and verbal measures (no understanding evident); (2) children pass the eye-gaze but not the verbal measure, and show full confidence in their verbal response (understanding is implicit); (3) children pass the eye-gaze but not the verbal measure, and lack confidence in their verbal response (the dawning of conscious insight into false belief); (4) children pass both measures but still lack full confidence in their verbal response; (5) children pass both measures and are confident of their verbal response. Increasing confidence seems to indicate a deepening understanding, perhaps because children come to understand better why the character will hold a false belief.

Although I agree that theory-of-mind knowledge is constructed in a social context and understanding is gradual, I do not see either conclusion as a threat to the theory-theory (TT). TT is based on the idea that children form theories about the mind that are in some ways similar to scientific theories. Scientific theories are often the result of years or decades of hard work, sometimes with many scientists from different laboratories contributing. Hence, scientific theories, the very basis for TT, are typically constructed both gradually and as the result of a community (social) effort. Arguments against TT on these grounds are therefore erroneous. Instead, arguments should focus on whether the structure of children's understanding is theory-like (i.e., possesses the characteristics of a theory), and there are good reasons for thinking that this is at least partially true (e.g., Gopnik & Wellman 1992; Perner 1991; Ruffman 1996; Wellman 1990).

There are other more minor issues. First, although C&L restrict their criticisms of TT to false belief understanding, in a broader context current versions of TT do allow for gradualism. For example, it is a basic tenet of TT that desire understanding begins before belief understanding, which begins before belief-based desire understanding, and so on. Second, C&L argue against the simulationist idea that children understand the mind using analogy, claiming that this presupposes a distinction between self and other. Yet, infants understand something about others' desires as different from their own by 18 months of age (Repacholi & Gopnik 1997), and mirror self-recognition indicates some rudimentary understanding of self by 3 or 4 months of age (Rochat & Striano 2002). This allows a role for individual development of social understanding from some time in early or late infancy at least. Fur-

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