lighted in C&L's discussion of the epistemic triangle. Triadic interaction is given a central role in this account as it incorporates and integrates more basic dyadic skills. The centrality of triadic interaction is consistent with a view of development in which one form of knowledge is considered more complete or more adequate than other forms of knowledge. But how central is the role of triadic interaction? Does it supplant other forms of activity and knowledge? Does it remain central throughout development? Our research in autism (Leekam & Ramsden 2003) indicates that while triadic interaction difficulties are critically important, dyadic interaction difficulties alone are a very powerful indicator of language and cognitive skills. Atypical groups, therefore, may give further insights into the continuity and discontinuity of link between dyadic and triadic skills. For example, children with autism have high levels of engagement with objects, whereas, in contrast, children with Williams syndrome have high levels of dyadic engagement with people and poor non-social knowledge. Both groups have difficulties with triadic interaction. What kind of understanding can be constructed from these different starting points and how is the ongoing development of this understanding constrained, facilitated, or transformed by experiences across time? C&L's account may not be able to answer these questions yet but it provides a good starting point for constructing a new understanding of children's understanding of mind.

Rich interactions and poor theories

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Abstract: Carpendale & Lewis's (C&L's) critique of traditional accounts of "theory of mind" is well taken, but the alternative theory they propose is premature at its best, unconvincing at its worst. The proposed theory is ad hoc and confirmatory in its findings; vague and generic in its claims; and unjustified and unnecessary in its (putative) novelty.

Critic John Horgan (1999) recently commented discouragingly about progress in psychology: "Theories of human nature never really die; they just go in and out of fashion" (pp. 6–7).

I am extremely sympathetic to Carpendale & Lewis' (C&L's) paper because it presents a scholarly review of the literature on children's understanding of the mind. However, the authors' alternative theory seems so ad hoc and vague that it conforms to Horgan's critique.

Ad hoc theory. When a new theory is proposed, one expects that its authors will contrast the theory's ability to deal with empirical findings against the ability of alternative theories. When this is not the case, the findings invoked to support the new theory are not critical, but *confirmatory.* In the present case, the findings invoked by C&L are consistent not only with the authors' new theory, but also with the approaches they criticize, and even with theories the authors do not mention. For example, if the "sibling effect" (with all its qualifications) found in children's social understanding may be interpreted in terms of C&L's account, it may be interpreted also in terms of (1) the theory-theory view, which states that theories are revised because, among other things, "children . . . depend on a social world . . . for much of the information they will use in theory construction" (Gopnik & Meltzoff 1998, p. 19); (2) the simulation theory, which states that interactions among children help them understand their own and others' mental states (Harris 1991); (3) the enculturation perspective, which claims that "children internalize the folk psychology of their particular culture" (Astington & Olson 1995, p. 184); (4) the experiential approach, which "takes into account both the conditions of experience in the specific social and cultural world, and also the phenomenology of experiencing on the part of the child" (Nelson et al. 2003, p. 25); and (5) even modular theories for which "there is nothing in the notion of modularity that prevents even matured modules from learning and developing" (Scholl & Leslie 2001, p. 698). More generally, when findings are interpreted *a posteriori* they can be made to accord with almost any theory. Hence, C&L's theory reminds us more of an approach to which data have to conform than one that conforms to the data.

Vague theory. C&L's main proposition is that the development of children's social understanding occurs within a triadic interaction involving the child's experience of the world as well as communicative interaction with others about their experience and beliefs (i.e., Chapman's [1991] epistemic triangle). Although true and of some heuristic value, this proposition is inherently vague. Without further qualitative or, better still, quantitative specifications, the proposition can be used, as is often the case throughout the paper, to make almost any claim, to generate almost any prediction, to explain almost any finding, to describe almost any psychological process, and to be applied to almost any developmental phenomenon. For example, it is hardly new – perhaps it is plain common sense – that the psychological development of children involves an activity matrix made up of biological, social-cultural, and psychological dimensions. In the same vein, to expect that children do better on false belief tasks when they are actively involved; to say that conversation about the mental world may be essential for the development of social understanding; and to declare that the extent and nature of social interactions experienced by children facilitates their development of social knowledge, hardly raises above common sense. What seems to be the greatness of C&L's theory – its apparent consistency with countless findings, authors, and theories – may be the hallmark of its fragility, for only at the cost of remaining at a generic level can the theory accord with almost anything psychological.

Consider the following example. C&L maintain that although Thelen and Smith's dynamic systems approach is in many ways consistent with their account, the ideas of interactionism and transactionalism make their account distinctly different. For, in contrast with traditional children's "theories of mind," C&L's account integrates the social and individual dimensions of development. However, because the two key concepts of interactionism and transactionalism were not specified, the authors' claim would certainly be classified as vacuous by Thelen and Smith: "Interactionism and transactionalism are everyone's comfortable buzzwords, and the proffered 'solution' to the nature-nurture dichotomy [and many others]" (1994, p. xv).

Unnecessary theory. C&L's account boils down to the idea that children's social understanding occurs within social interaction, is gradual, and involves an active subject. But when these claims remain at a simply verbal level they will not be powerful enough to sustain an alternative theory of individuals' social understanding, regardless of how flawed previous accounts may be. Without additional specifications and elaborations, Piaget's appeal to constructivism and gradualism and Vygotsky's focus on social interaction do not need to be repeated. In addition, they do not justify yet another theory on children's social understanding. Because all subjects behave and while behaving must perforce be active, we should be careful when proposing theories whose essence relies on the contrast between an active and a passive individual. What counts as a subject's passive or active role in his or her psychological functioning may be more a semantic problem – all too common in disputes among weak psychological theories – than a substantial problem (see Lourenço 2001).

Regarding the necessity of C&L's account, I believe it does not go any further in terms of claims, processes, or predictions than previous developmental theories, such as those of Piaget, Vygotsky, or Selman. For example, because Selman's (1980) theory identifies five levels in individuals' interpersonal understanding, and also appeals to the idea of an active and interactive child, it goes well beyond C&L's seemingly distinctive idea of the emergence of an interpretive theory of mind, which according to these authors would be the second (and last) level in individuals' understanding of the mind.

It might be argued that even if C&L's approach were reducible

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to previous ones, the account would still be necessary because it allows us to explore five areas of urgently needed research, one of which would be a detailed analysis of infants' interaction. Ironically, C&L are the first to recognize that some contemporary research of this sort already exists.

In summary, C&L's critique of traditional accounts of "theory of mind" is correct. However, in its present state their new theory is clearly premature – unless, that is, one favors the proliferation of weak psychological theories and the perpetuation of what Meehl (1978) has called the slow progress of soft psychology.

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Constructing agents: Rethinking the how and what in developmental theories of social understanding

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Abstract: Although I am broadly in sympathy with Carpendale & Lewis's (C&L's) version of social constructivism, I raise two issues they might address. One bears on the question of how social understanding develops: Is their resistance to individualism inappropriately combined with a resistance to internalism? A second question concerns a more radical implication of their view for what social understanding is.

Three cheers for Carpendale & Lewis's (C&L's) "constructivist" approach to the development of social understanding, with its insistence on the *gradualistic, action-oriented,* and *socially embedded* nature of this process. In C&L's view, developing children become, not theoretically competent in a body of folk-psychological (FP) knowledge, but skilled social beings, able to demonstrate in myriad ways their capacity-in-action to negotiate the complex, normatively structured social world in which they and their fellows are embedded. I am broadly in sympathy with this account but raise two issues C&L might address. One bears on the question of how social understanding develops, the other on what social understanding is.

Let me first address the question of how social understanding develops. By taking the skills approach, C&L are able to chart a constructivist middle way between the extremes of "individualism," which credits the child with having or doing too much in development, and collectivism, which credits the child with having or doing too little. Yet despite C&L's focus on how development occurs – in particular, given their resistance to a passive and wholly mysterious view of social enculturation – their own account of this process, especially in early infancy, is mechanistically vague. How do self-other differentiation and coordination gradually emerge within the context of parentally supported dyadic and triadic interactions? It has something to do with the infant's developing and combining sensorimotor schemes, we are told, but the "riddle" of this emergence has yet to be solved.

Where do we look for the answer? C&L suggest it will be found in more detailed longitudinal analysis of behaviours that emerge in the context of such interactions. Although no doubt helpful, this leaves the mechanistic side of this puzzle quite untouched. I worry that C&L's justifiable anti-individualism may seem to blend into less-justified anti-*internalism,* a resistance to investigating what cognitive/perceptual mechanisms *within* the infant could support the gradual emergence of progressively more skilled social behaviours.

Such mechanisms need not be so richly specified as to amount to a prewired capacity for social understanding, nor need they be such as to presuppose sophisticated (theory-like) processing of others' intentional behaviour as such. They may be quite low-level mechanisms: for example, the mechanisms underlying early imitation, allowing infants to cross-modally map their own proprioceptively experienced bodily movements onto like movements that they see performed by others (Meltzoff 1990; Meltzoff & Gopnik 1993; Meltzoff & Moore 1992). The progressive development and combination of sensorimotor schemes would then be explained, in the first instance, by the infant's primordial perceptual urge to map what others do onto what they do themselves. Of course, this perceptual urge may soon be reinforced by the other benefits that infants gain through such interactions – for example, epistemic benefits that derive from adults' intentional scaffolding, but also, perhaps at first more importantly, the sensory/affective regulative benefits suggested by C&L in connection with a lean interpretation of early joint attention behaviour (Baldwin & Moses 1996; Gergely & Watson 1996; McGeer 2001).

However, my point here is not to push any particular view, but to query C&L about their general attitude towards internalism (versus individualism). In connection with this, it is interesting to note a parallel "neuroconstructivist" movement focused on internal structures and mechanisms that attempts to chart a middle way between the extremes of nativism (too much prespecified structure) and empiricism (too little structure) to explain the development of higher-order capacities through the child's interaction with a progressively structured, even necessarily social environment (Elman et al. 1996; Karmiloff-Smith 1998; Quartz & Sejnowsky 1997). Given the similarity of constructivist ambitions, there may be fruitful connections to exploit between these two programs.

Now to the question of what social understanding is. I begin by noting that once the resistance to individualism is clearly separated from a needless resistance to internalism, C&L may well avail themselves of a better way to characterize the infant's starting state than one of relative nondifferentiation between self, other, and world. However true this characterization may be, it suggests a lack of structure and/or activity on the infant's part that seems to fit better with the enculturation model C&L rightly reject. The infant is not a passive receptacle but active in constructing skills in and through social relationships that eventually constitute the skills of a genuine folk-psychological agent, that is, of a person who manifests his or her social understanding in myriad skillful ways of interpreting others and acting in the normative terms of folk-psychology.

The developmental challenge is therefore not so much one of "differentiation" as it is of transforming/having transformed early meaningless activities into the progressively more meaningful activities of a well-behaved folk-psychological agent. This characterization may constitute a subtle shift of emphasis, but its point is to bring out an important implication of C&L's approach not fully highlighted in their target article – namely, that "social understanding" is not just a body of knowledge, even in the sense of know-how, allowing individuals to understand one another as intentional agents. It is, more significantly, a *regulative practice* – that is, a complex set of skills by means of which individuals regulate themselves in accord with the norms of folk-psychology, thereby themselves becoming well-formed agents from the folk-psychological point of view (McGeer & Pettit 2002). The development of "social understanding" is therefore, in actuality, the development of social *agency:* a progressive enablement of individuals' agential skills by means of which they are also progressively empowered to act and react in self-standing ways within a community of others. All this is quite compatible with C&L's program: It merely raises the question of whether their substitution of the phrase "social understanding" for "theory of mind" goes far enough in capturing their sense of what children are constructing within social interaction.

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