

General Article

OTHER FOLKS' THEORIES OF MIND AND BEHAVIOR

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Our everyday, basic understanding of people's mental states and behaviors has recently been a lively topic of debate in the social sciences. This article addresses whether some aspects of our European-American theory of mind are universal, by examining ethnographic and experimental reports of cultural variation. Implications of that variation for nativist theories of development are discussed and research strategies to augment our understanding are proposed.

In recent years, in fields ranging from philosophy to social cognition to development, there has been a virtual groundswell of discussion examining what is often referred to as theory of mind. This term has a spectrum of referents, from a tendency to impute mental states (Premack & Woodruff, 1978) to a complex system of knowledge about minds and behavior. This complex is theorylike in that it specifies causes, provides explanations, embraces specific ontological distinctions, and is coherent (Wellman, 1990).

The classic tale of Little Red Riding Hood can provide an example of what a difference our knowledge about minds makes in how we interpret and understand others. If we distill out mentalistic interpretation, this tale is rather dry. A little girl hears from a woodcutter that her grandmother is sick. She walks to her grandmother's house, carrying a basket of treats. A wolf who is in her grandmother's bed jumps out and runs after the girl.

Incorporating an interpretation guided by our theory of mind makes the story a good deal more coherent and interesting. Little Red Riding Hood learns from the woodcutter that her grandmother is sick. She wants to make her grandmother feel better (she is a nice, caring child), and she thinks that a basket of treats will help, so she brings such a basket through the woods to her grandmother's house (beliefs and desires lead to actions). When she arrives there, she sees the wolf in her grandmother's bed, but she falsely believes that the wolf is her grandmother (appearances can be deceiving). When she realizes it is a wolf, she is frightened and runs away, because she knows wolves can hurt people. The wolf, who indeed wants to eat her, leaps out of the bed and runs after her, trying to catch her.

Our tendency to interpret others in folk psychological or theory-of-mind terms makes others more understandable, pre-

dicible, and interesting. We spend a good deal of time considering others' mental states and the reasons for their behaviors, so much so that Humphrey (1984) deemed it appropriate to refer to our species as *Homo psychologicus* rather than *Homo sapiens*.

In examining our everyday, folk understanding of mind and behavior, we draw mainly on a database of information culled from European-American experience (Europeans and non-European Americans probably also share much of that folk knowledge). As some social psychologists have argued (e.g., Markus & Kitayama, 1991), extrapolations based on this one cultural group might not hold up well in other cultures. Indeed, D'Andrade (1987) pointed out some differences between Ifaluk and American models of the mind, and I (Lillard, in press) have reviewed differences across a wide range of cultures. But even within European-American culture, theory-of-mind content is not as consistent as the literature might lead one to expect. What is held forth in academics as *the* theory of mind is actually a specific European-American formulation, one that resonates with scientifically minded academics. We rarely consider, for example, the prevalence, source, or meaning of Americans' folk beliefs in supernatural forces affecting minds and behavior, because academics tend not to hold such views themselves and do not think them important.

Our failure to consider other ways of thinking about minds and explaining behavior not only affects our descriptions of theories of mind, but also has implications for our theories of development. Explaining development is a major task of developmental psychology, and theories postulating preadapted mechanisms are very much in vogue. These theories are challenged by the cross-cultural evidence because they have been constructed to explain evidence coming only from this limited cultural milieu. The result is that enculturation might be mistaken for biological maturation. In this article, I briefly present what we know about the development of theory-of-mind knowledge in European-American children, outline four nativist developmental theories, and then consider the cross-cultural evidence and its implications for these theories.

DEVELOPMENT

Children's Knowledge About the Mind

A good body of knowledge concerning what children at various ages understand about minds has accumulated over the

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past decade. Natural language data suggest that children first come to understand desire and perception, then later understand belief (Bartsch & Wellman, 1995; Bretherton & Beeghly, 1982), and experimental work confirms that progression (Gopnik & Slaughter, 1991). However, for any given aspect of mind, there are simple and complex levels of understanding. Consider an example involving perception. By age 3, children understand that seeing leads to knowing, so that someone who has looked in a container is more likely to know about its contents than is someone who has not looked (Pillow, 1989). However, not until age 4 or 5 do children understand what type of perceptual input leads to what type of knowledge. Children under 4 often claim that one would know that a ball is blue just by feeling it, without any visual access whatsoever (O'Neill, Astington, & Flavell, 1993). Understanding of emotions also exhibits different levels. Young children have rudimentary knowledge about emotions, knowing by 18 months, for example, that someone who makes a disgust face at goldfish crackers and smiles at broccoli should be given the broccoli, not the goldfish, to eat (Repacholi & Gopnik, 1997). However, not until children are older do they understand how to cope with sad feelings, or that people can have mixed emotions (Harris, 1989; Harter & Whitesell, 1989).

Researchers have also studied children's concepts of thinking and consciousness, and have found that although 4-year-olds know that thinking differs from talking, occurs inside the head, and is associated with certain body postures (*The Thinker*), they are not very good at specifying just what a person is thinking about even when it is patently obvious to an adult. For example, when someone is asked, "Where are your keys?" and responds, "Hnnn, let me think about that," children are as likely to claim she is thinking about her keys as about a nearby flower (Flavell, Green, & Flavell, 1995). A very active area of research has concerned children's understanding of false belief, or that people might think something that is not true. It appears that children gradually acquire this understanding between 3 and 5 years of age (Wimmer & Perner, 1983). Some scholars have characterized younger children's view of the mind as relatively static, and emphasize that with development, children increasingly appreciate that the mind is interpretive (Schwanenflugel, Fabricius, & Noyes, 1996; Wellman, 1990). In sum, recent years have seen the accumulation of much knowledge about what children (at least European and American ones) know about the mind and when (for recent comprehensive reviews, see Flavell & Miller, in press).

Theories of Development

In tandem with studying what children know about minds, and when, researchers have developed several theories about how such knowledge develops. Several of these postulate that human minds are preadapted for mind reading, through innate

mental state concepts, or specialized mind-reading processors, or both. Fodor (1992), for example, supported modular systems but emphasized innate concepts, and Baron-Cohen (1995) did the reverse. For simplicity, only the more emphasized aspect of each theory is discussed.

Fodor (1987) took the position that folk psychological (and other) concepts are inborn. Perhaps his most famous quote in this regard is, "Here is what I would have done if I had been faced with this problem in designing *Homo sapiens*. I would have made commonsense psychology innate; that way nobody would have to spend time learning it!" (Fodor, 1987, p. 132). Concepts as disparate as know, think, and remember are burned into ROM, so to speak, so that at birth the child understands all basic mental states. Development is mainly an increase of information processing capacities, which allows children to better use what they already know (Fodor, 1992). Several other theorists have also put forth this "prepackaged" view, claiming that some if not all mental state concepts are innate (Premack, 1992; Wierzbicka, 1993).

Innate processor theories postulate prespecified processors that arrive at mentalistic understanding. These processors take human behavior, or other person information, as input and output explanations for that behavior, predictions of what the person will do next, and so on. Baron-Cohen (1995) specified four different processors allowing mind reading: an intentionality detector that interprets agentive movement in terms of the moving entity's goal and desire; an eye direction detector; a shared-attention mechanism to read others' focus of attention; and a theory-of-mind mechanism (ToMM) to link agents, via mental attitudes, to propositions (She thinks "it is a ball"). Leslie's (1994) theory is similar but involves three modules: the same ToMM, a module to impute agency, and a module to interpret physical motion.

A third, somewhat different processor theory is that of Harris (1992). This theory specifies an innate simulating device that matures at around 18 months of age. The simulating device allows one to imagine being in a different person's situation, and thereby to experience the other's mental state, which is in turn projected on to the other person. By this theory, one need not have mental state concepts as such. The simulation theory differs in many ways from the others described here. For example, it does not postulate modularity. However, all these theories suggest specialized mind-reading devices.

As was stated earlier, most work on the development of children's understanding of mind has involved European and American children. The theories have not been evaluated in terms of whether they make sense for other cultures, which might differ in some ways with regard to how they understand minds and behavior. Such evaluation might, at a minimum, force precision on theories of development, and could also clarify the influence of sociocultural transmission on folk psychology. In what follows, I review evidence from both ethnographies and experiments about concepts of mind and the source of behavior.

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EVIDENCE

Ethnography

One aim in psychology is to specify what is natural and what is encultured, and how they intertwine, but little progress can be made to that end if only one cultural group is studied. Although ethnography's methods are very different from those of experimental psychology, they give rise to certain strengths. One of these is that evidence is derived from immersion in people's actual lives rather than from laboratories, another is that ethnographers attempt to understand entire meaning systems (Bruner, 1990; Hammersley, 1990). Although ideally evidence would come from consistent results derived through both types of methods, at this point ethnography is often all that is available. Two ethnographic accounts relevant to theories of mind are examined here: Rosaldo's (1980) report of the Illongot concept most closely translated as "mind" and Evans-Pritchard's (1976) discussion of the Azande's use of witchcraft to explain behavior.

The Illongot

The Illongot are a Philippines group that was studied by Rosaldo in the 1960s and 1970s. At that time, there were about 3,500 Illongots, inhabiting an area of about 1,500 km² and dispersed into 35 settlements. The average household was composed of about 7 people. The Illongots were mainly rice farmers, one of their unusual characteristics from a European-American perspective was their engagement in the practice of head-hunting. "Men went headhunting, Illongots said, because of their emotions. Not gods, but 'heavy' feelings were what made men want to kill, in taking heads they could aspire to 'cast off' an 'anger' that 'weighed down on' and oppressed their saddened 'hearts' [rinawa]" (p. 19). Rosaldo noted that "[rinawa] for an outsider evokes the privacy of interior experience and for [Illongots] does that and more" (p. 36). The issue to be addressed here is the extent to which the concept of *rinawa* is the same as our concept of mind.

One clear difference is identity. Human *rinawa* is identified with the heart. It is located in the chest cavity, and it beats. In contrast, our mind is identified with the brain. However, identity is not as crucial to the mind concept as are mental processes. Here, there are many similarities. The *rinawa* is the seat of thought, action, awareness, concentration, and creativity—many of the processes that European Americans link to minds. Feeling is also linked to *rinawa*. European Americans are ambiguous with regard to feeling being part of the mind. On the one hand, feeling is commonly located in the heart, on the other hand, the mind is thought to be necessary to feeling (Johnson & Wellman, 1982), and having emotions is considered among the most important functions of mind (Rips & Conrad, 1989). The theory-of-mind field of study certainly includes emotion, and some cognitive states, like approval, have an emotional component (D'Andrade, 1987). Emotion

and these other mental process functions of *rinawa* thereby seem consistent with the functions of our own mind, although the physical identities are different.

However, there are many important differences. First, *rinawa* is not limited to humans and animals. All growing things, including plants, have *rinawa*. Second, *rinawa* is responsible for much more than thought and feeling, including what Rosaldo translated as fertility, health, life energy, social relations, vitality, and animation. Thus, *rinawa* has a much larger scope than mind has. Further, *rinawa* behaves in ways that minds do not. It leaves one's body gradually over the life course, so that old people have very little *rinawa*, at death, *rinawa* is gone entirely. Although we might have a similar notion regarding the very old and minds, we do not think of minds as gradually receding through life, indeed, childhood is a time of building minds. And we do not doubt the elderly's ability to feel, as would be implied by a loss of *rinawa*. Also in contrast to our notion of minds, one's *rinawa* leaves when one is dreaming, and travels about. If one's *rinawa* eats with a dead person during a dream, one will begin to die, because one's *rinawa* will be more comfortable among the dead. One's *rinawa* can be stolen by magic rites, and can be brought back by the use of water in special ceremonies. *Rinawa* has elements of our concepts of mind, heart, soul, and life force, but it is not easily assimilated to those nor any other European-American concepts. Wierzbicka (1992) noted several other cultures that do not have a concept analogous to "mind" and argued that it is a unique English-language formulation. As I discuss later, the uniqueness of the mind concept raises questions regarding innate concepts.

A further difference between the European-American and Illongot views is that the Illongot are not particularly interested in internal aspects of the person; instead, their focus is on social relations (Rosaldo, 1980). One sees similar claims in many ethnographies (Lillard, in press), suggesting that European-American attention to minds is in fact unusual, and calling into question Humphrey's claim that our species would more aptly be called *Homo psychologicus*.

The Azande

Even in cultures that do not attend to minds as carefully as does our own, people behave according to the literature, we tend to see minds and mental states at the root of most behaviors (D'Andrade, 1987; Lillard, in press), but in some cultures, some behaviors that we would attribute to the person are instead attributed to other sources. One such cultural group is the Azande (Evans-Pritchard, 1976). The Azande are from central Africa, and in the 1920s, when Evans-Pritchard lived among them, they were organized into tribal kingdoms and subsisted by farming, hunting, and fishing. They also raised chickens for use in oracles. When a question deemed worthy of such a consultation arose, a chicken was given some poison. Sometimes the chicken died, indicating one response to the question, and other times the chicken lived, indicating another. Hard

evidence to validate (or invalidate) the oracle's response was often unavailable, so the oracle generally went unchallenged. When the oracle was discovered to be wrong, the error was attributed to witchcraft acting on the oracle, because the poison oracle was believed to never lie.

The Azande of the 1920s inveighed witchcraft to explain any manner of unfortunate event, including behaviors with bad outcomes. For example, Evans-Pritchard (1976) described walking by a hut that had been burnt, and learning that the owner had actually lit it on fire himself, accidentally, while going to check a vat of beer he was brewing for a celebration. When he held a handful of burning straw up so he could see into the vat, the straw in his hands lit the straw of the roof, and the hut burned. In our terms, the man made a mistake: He accidentally held the straw too high. To the Azande, however, this behavior was not his fault; it was not internally caused. Rather, it was the result of witchcraft, of an external agent.

As another example, when a youth stumbled over a wood stump and got a bad cut, people claimed witchcraft was the cause. Evans-Pritchard challenged him, saying witchcraft had not put the stump there. The boy agreed, but said he was watching carefully for stumps, and if witchcraft had not been operating, he would have seen it. As a third example, when a woodcutter's bowls crack, we would claim it was because the woodcutter chose wood that was too dry, or that had been cut too thin, but for a Zande woodcarver, the cause was witchcraft:

[He] used to harangue me about the spite and jealousy of his neighbors. When I used to reply that I thought he was mistaken and that people were well disposed toward him he used to hold the split bowl towards me as a concrete evidence of his assertions. If people were not bewitching his work, how would I account for that? (p. 21)

All deaths are due to witchcraft, even suicides. So are crop blights, unresponsive spouses, unsuccessful hunting expeditions, illnesses, fallen buildings, and so on. Considering such events in a European-American context, we might focus on situational causes (an earthquake made the building fall), but likely would also find person-responsibility factors (the owner of the building should have retrofitted it so it would be up to code to withstand an earthquake of that magnitude).

Witchcraft is not a mysterious force to the Azande. It is simply a nuisance. They do not claim to understand it well, as they say only a witch would truly understand it, and they all deny being witches themselves. Witchcraft substance is located close to the intestine, in a black sack, and is reddish in color. It leaves the witch's body, usually at night, and flies through the air, resembling a firefly. It joins forces with the souls of other witches, and they plan attacks. When a suspected witch dies, survivors sometimes hang the deceased's intestines out so people can check for presence of witchcraft substance. Yet the Azande are typically not interested in witchiness as a trait; rather, they care about specific instances of witchcraft. If a

witch is not currently bewitching them, then a person's witchiness is irrelevant.

Azande believe that a person practices witchcraft against them because he or she is envious. Upon being accused of witchcraft, one must always deny any knowledge that one is practicing witchcraft, and should inveigh the witchcraft substance in one's belly to cool down. It is always the case that one does not know one has been practicing witchcraft. However, this special case is reserved for oneself: if others are practicing witchcraft, they know that they are.

In sum, Zande witchcraft is a means of explaining unfortunate behaviors. Although it has scientific and folk psychological aspects, it is rather different from our own theory of behavioral causation.

Experimental Studies

Experimental studies corroborate the notion that behaviors can be explained in different ways across cultures. In the United States, when asked why someone else has done something, people tend to refer to fixed personal attributes, or traits (Ross & Nisbett, 1991). In fact, this is an error: people are far more situationally motivated than we tend to admit. Morris and Peng (1994) have shown that the Chinese do not tend to make this error. One study looked at newspaper accounts of murders and found that Chinese journalists tended to refer to situational factors that led to the murders ("was a victim of the Top Students' Education Policy," "tragedy reflects the lack of religion in Chinese culture," "had recently been fired," "followed the example of a recent mass slaying in Texas," p. 961), whereas American journalists tended to refer to traits of the murderer ("sinister edge to his character well before the shooting," "very bad temper," "darkly disturbed man," "mentally unstable," p. 961). In another experiment, Morris and Peng showed Michotte-type stimuli to Chinese and American high school students and asked them to rate the extent to which the movement of the struck item was due to internal and to external causes. The objects were either shapes (circles and squares) or fish, considered by the authors to be nonsocial and social stimuli, respectively. Responses to the shapes did not differ across the two cultures, but for the fish, Americans only were more likely to attribute movement to internal than to external causes. These experiments suggest that Americans are more likely to attribute *animates'* behaviors to internal, traitlike causes than are Chinese, who are more likely to attribute such matters to situational factors.

Using a different paradigm, Miller (1984) obtained similar findings for Hindu subjects in southern India. Forty-five percent of Americans' explanations for others' deviant behaviors referred to dispositional factors, and 14% referred to contextual factors. In contrast, 15% of the Indians' explanations considered dispositions, and 32% considered contextual factors. Although both types of explanation were present in both cultures,

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consistent with Morris and Peng's (1994) findings, a difference in cultural preferences was evident

POSSIBLE WAYS OF EXPLAINING BEHAVIORS

Within any culture, there are, of course, many ways in which an event or behavior can be explained. Consider the event of a woman jiggling her leg. One might explain it with reference to a trait. She is a nervous person, so she jiggles her leg. Or one might use a belief-desire explanation. She wants to lose weight, and she thinks jiggling her leg will help her to do so. A situation explanation could be that she is about to give a speech, and that situation is temporarily making her nervous. There is an "other side of the coin" quality to situation explanations, in that they often imply internal person factors. Someone else might not get nervous in that situation.

A fourth possible cause could be other people. Her mother-in-law makes her nervous. This could be seen as a situation cause, with the situation being a certain person. In some cases, the person could even be seen as intending to cause the other person's behavior. Her mother-in-law wants her to be uncomfortable, and therefore is criticizing her, and that is making her nervous. However, the other person's behavior would not have to be viewed as intentional.

A fifth sort of cause, rarely discussed in the literature but certainly seen in this discussion and elsewhere, invokes intentional agents of special ontological status. In many societies, people commonly believe that dead ancestors "live" among them (i.e., the Tallensi, Fortes, 1987), and might even control their actions in some cases. People in other cultures believe that ghosts (not necessarily ancestral) can take over one's body and cause one to behave in certain ways, for example, Fajans (1985) described an incident in which a Baining man explained his own conduct with reference to a ghost having taken executive control. The ancient Greeks ascribed at least unusual actions to the gods (Wilkes, 1988), and even in European-American culture, the Judeo-Christian God can be considered to cause events or behaviors. To return to the jiggling-leg example, one might say her leg jiggles because she has Parkinson's disease, because God has plans for her to become a special advocate for Parkinson's sufferers. We seem to invoke such explanations to find meaning in unfortunate events.

In all the explanations so far, intention is still at root, but in some cases, the intention is considered to be in others. However, there are also explanations that lack an intentional component altogether. One example is biological explanation. In the case of the jiggling leg, we might say her leg is jiggling because she just had three cups of coffee. Modern philosophers sometimes argue that this mode of explanation will or at least should replace belief-desire talk in folk psychology, hence we would say, "I am in a desire-state" rather than "I want" (Stach, 1983). A second nonintentional explanation can be found in astrology; one's behaviors might be attributed to alignments of planets.

To summarize, one can explain a behavior at many levels. Five levels—trait, belief-desire, situation, other person, spirit—either directly or indirectly imply an intentional system gods or spirits or selves that have intentions, beliefs, and so on. Two other levels are intention blind biological and astrological explanation.¹ Although a good deal of research has looked at behavior attribution, the focus has tended to be on trait versus situation explanations. We do not know how frequently other sorts of explanations are used, either in European-American culture or across cultures. A worthwhile research program would be to examine the frequency with which respondents in various cultures invoke these different types of explanations for behaviors, and under what circumstances. Further, one should examine the relative weight given to each sort of cause, because any given behavior might be explained in multiple ways even by a single person. For some behaviors, the frequencies of various explanations might be similar across cultures (getting a drink of water), whereas for other behaviors, these frequencies might be quite different (causing a serious accident).

Such a research program would be helpful in addressing our lack of knowledge of the various ways people in different cultures explain behavior. However, although suggestive, it would still leave open the developmental question: How is it that understanding minds develops? The ethnographic and experimental data just described seem problematic for the theories presented earlier.

EVALUATING THE THEORIES

One advantage of looking across cultures when studying basic psychological processes is that the resulting evidence can help shed light on what might result from biology versus enculturation. Because nativist theories focus on biological factors in development, cultural differences can be problematic.

Consider the theory that the concepts that make up folk psychology are burned into human ROM (so to speak). One concept very basic to our own understanding of mind is that of mind itself, but the Illongot appear to lack an analogous concept. One might retort that mind is a derived concept, and that more basic ones are universal, but even those seem to vary. For example, several ethnographers have noted that other cultures lack our strong thinking-feeling distinction (e.g., Fajans, 1985; Lutz, 1988). How innate concepts support such differences has not been addressed. Clearly, in each culture, mental state concepts arise in part through cultural transmission. Perhaps there is some component of mind or thinking that one sees everywhere, that might be innate. Theorists need to specify just what the innate portion is, for each concept, rather than use English words that denote a complex aggregate of components. One difficulty here is that whatever is innate (if anything) might be so malleable that no cultural group would one even see the

¹ Traits are a fuzzy case and might be considered part of the intention-blind category.

pure, innate concept in adult individuals; indeed, even very young children might have adopted culture-specific views.

There is a further counter as well. Words and concepts, of course, might not align perfectly (Clark, 1983), and so word meanings might not be the right data to address this issue. To examine properly what concepts might be innate, one would need to use a variety of means, including semantic similarity analyses (see, e.g., Lutz, 1988; Schwabenflugel et al., 1996; cf. Greenfield, 1997), to uncover underlying concepts.

Nativist theories involving specialized processors also can benefit from attention to cross-cultural evidence. These accounts are often modeled on Chomsky's (1986) language acquisition device, which is modular and predisposed for its particular purpose. Autism is seen as supporting evidence for this account (Baron-Cohen, 1995) because even high-functioning individuals with autism are specifically impaired in mind reading. Therefore, the argument goes, a particular part of their brain (a mind-reading module) is malfunctioning.

One problem raised by the cross-cultural evidence for Baron-Cohen's and Leslie's versions of innate modules is that they emphasize aspects of mind that are especially salient to European-Americans, like agency. One suspects that were the theorists Indian or East Asian, they might have developed modules for reading situations, or relationships, rather than modules for interpreting agency. A second problem is that the processors themselves do not appear to work in the same way in all cultures. For example, Baron-Cohen (1995) specified that an intentionality detector perceives the agent and interprets his or her actions in terms of the actor's intention. Such an analysis does not lend itself to Azande notions of witchcraft causing behaviors, nor to behaviors being attributed to takeover ghosts. Further, it is unclear why some cultures would tend to consider situational factors more than we do in understanding others' behaviors, if such understanding is innately driven. Even in our own culture, we draw on a variety of explanations. This issue needs to be resolved in modular theories.

Problems also arise for simulation theory (Harris, 1992). By this account, one should apply to others the same mental states that arise for oneself, when one puts oneself in the other person's shoes. However, when an Azande is accused of witchcraft, he or she always denies knowledge of it. On the other hand, Azande claim that *others* always know if they have been engaging in witchcraft. Were the Azande in fact simulating in order to access other people's mental states, they would deny others' awareness of witchcraft as well. Actually, one does not have to venture so far from home to see such discrepancies: European Americans tend to incorrectly claim others' behavior stems from traits, but correctly judge their own as stemming from the situation (Ross & Nisbett, 1991). Simulation theory would not predict such discrepancies.

One interesting possible approach to examining theories of mind across cultures is to address whether there might be a universal grammar of folk psychology, a task similar to that taken by Fiske (1992) regarding elementary forms of social

relations. What might be some possible parameters or constraints on the development of this knowledge? Might there be limits on how people are conceptualized and behaviors explained, and might there be certain understandings that have to be reached everywhere? For example, no culture seems to be absolutely and purely behavioristic in its conceptualizations. Even in cultures in which people refuse to discuss mental states (and there are many of these), the languages at least have a few words for them. Another possibly universal understanding might be false belief: It seems that everywhere, everyone must realize that sometimes people's behavior does not accord with the way the world really is, but instead stems from how it appears to them. Although some research suggests this is a universal understanding (Avis & Harris, 1991), reached between 3 and 5 years of age, other work raises questions (Vinden, 1996). Such issues need to be resolved through further research. Discovering a universal grammar of folk psychology would not necessarily support the notion that it is built in. A universal grammar of folk psychology could also result from people everywhere coming to realize fundamental, biologically based truths about people and how they operate (see D'Andrade, 1987). However, pinning down a universal set of folk psychological constructs would have important bearing on cultural relations and on developmental theory.

EXAMINING CHILDREN'S THEORIES

Examining folk psychological understanding from this vantage point underscores the need to study children's theories of mind and behavior the world over. Such a strategy would put us in a better position to attempt to decipher how cultural systems fuse with other systems that are innate or derived from universal processors. Although adult understandings are suggestive regarding what might be innate, young children are the truer test.

Wellman (1995) and Harris (1995) each argued that children's understanding of the mind is probably universal in the early years, and that cultural variation occurs only at more advanced levels. Wellman (1995) derived support for this idea from research by Mead (1932) and Kohlberg (1966), who both, by his description, found that children's conceptualizations across cultures were more similar than were adult conceptualizations. Further, each study found that native children's conceptualizations were more similar to European-American adults' conceptualizations than to those of native adults. Although Manus adults showed a great deal of animism, and Ayatal adults believed their dreams reflected reality, the children in each culture did not.

Kohlberg's (1966) report on the Ayatal is difficult to assess. It was apparently based on clinical interviews and subject to the usual troubling issues (leading questions and so forth), which might have affected children even more than adults. Hence, his work can only be taken as suggestive. Mead (1932), in contrast, supported a strong enculturation view. She pointed out reversals in each culture: American children appeared uni-

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mistic, yet their parents were not, whereas Manus children were not animistic and their parents were. She explained the differences in children as enculturation, arguing (a) that, unlike English, the Manus language rarely used metaphors or other constructions that humanize objects (e.g., by making them subjects of intentional verbs), (b) that, relative to Americans, Manus children were raised in such a way as to give crucial weight to physical cause-effect relations, and (c) that Manus parents did not use animistic explanations with children.

The deeper suggestion is that children might be influenced by their culture to entertain a variety of notions. It seems quite plausible that children are willing to entertain a huge variety of explanations, and that the explanations they continue with are the ones that are reiterated by the cultural surround. This idea fits with what we know about neurogenesis. Brains begin by making vastly more axon-dendrite connections than they will ever use, and the process of development is a process of paring away the connections that are not used. If such is also the case for folk psychology, then the interesting question is, what is the range of possibilities that children will consider, and how does each culture focus children on one or another of those possibilities? Studying the development of children's understanding of the mind across very different cultures will help to answer this question.

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