That’s Why I’m Starting With Me

A review of

The Intersubjective Mirror in Infant Learning and Evolution of Speech

by Stein Bråten


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Reviewed by

Stephen A. Truhon

The discovery of mirror neurons is considered one of the major advances in neuroscience during the 1990s. In a critical study Rizzolatti, Fadiga, Fogassi, and Gallese (1996) attached electrodes to the motor area of the brains of macaque monkeys. They found that specific neurons fired not only when the monkeys reached for a piece of food but also when they saw a human pick up the same food. Almost immediately there was speculation whether mirror neurons also existed in humans. Although there remain skeptics of the research, a good deal of evidence supports the existence of human mirror neurons (e.g., Gazzola & Keysers, 2009).

What are the implications of these findings? Initially researchers focused on the learning and recognition of motor actions. However, as mirror neurons were discovered in more and more regions of the brain, other areas such as empathy, language, theory of mind, and autism also have been considered. In his book The Intersubjective Mirror in Infant
Learning and Evolution of Speech. Stein Bråten has used these findings to propose a complex theory of human development, in both the phylogenetic and ontogenetic sense, and of the intersubjectivity that humans possess with one another.

Bråten proceeds in an orderly manner in presenting his theory. He begins with the changes in the views of infant nature during the 20th century. He emphasizes that infants are not the egocentric creatures described by Piaget and Freud but instead are altercentric, that is, centered on the other. (Bråten has included a glossary with the definitions of this and other terms that may be unfamiliar to the reader.)

Similarly Bråten views the private speech (i.e., speech to oneself) of young children in nontraditional terms. Piaget called this phenomenon egocentric speech, indicating that the young child is so self-oriented that it assumes when it speaks that others would listen. In Vygotsky’s view, private speech is a form of thinking out loud that appears in problem-solving situations and becomes internalized with age. Bråten has proposed that during private speech the child is in a dialogue with its virtual other.

Bråten then explores the work on mirror neurons and their implications, as he sees them. Among these implications are the development of speech in infancy and its impact on the self–other relationship with caregivers. The concept of self–other relationship is not a new one for psychologists. Developmental psychologists have long seen the synchrony between newborns’ movements and adult speech as an illustration of this relationship (Condon & Sander, 1974). Bråten has extended this idea by suggesting that each person has a bodily self and a virtual other. An infant and an adult form a dyad, such as in attachment, when the infant’s and the adult’s bodily selves combine and fill into each other’s virtual companion space.

Next Bråten considers how the development of motor neurons have led to the evolution of language, culture, and prosocial behavior. According to Bråten, the evolution of intersubjectivity is largely a result of the development of bipedalism. When humans’ ancestors began to walk on two feet, it was no longer possible for their young to ride on the backs of their parents. When the young rode on their parents’ backs, they viewed the world the same way their parents did (i.e., egocentrically). With the development of bipedalism, the young were forced to engage in face-to-face interactions with their parents. These kinds of interactions gave those who were capable of altercentric orientation a selective advantage in survival.

In the last section Bråten considers the development of intersubjectivity in infancy and its relationship to imitation, joint attention, and theory of mind. Bråten accepts the view that persons with autism have an impaired theory of mind. He and others (e.g., Iacoboni & Dapretto, 2006) have linked this impairment to the dysfunction of the mirror neuron system in those with autism. They have noted that the mirror nervous system is associated with imitation and consequently social cognition, including theory of mind.

It is plausible, then, to conclude that impairments in the mirror nervous system would result in disturbances in imitation and social cognition, which are characteristics of those
with an autistic disorder. As Bråten has described it, the impaired mirror neurons result in the “broken mirror in autism” (p. 271).

As can be seen in this review, Bråten has drawn on a variety of areas, including developmental psychology, evolutionary biology, philosophy, and computer science. He uses the research on mirror neurons and in these topics to provide support for his longstanding ideas about intersubjectivity. Bråten has made a remarkable and complex proposal about the nature of human consciousness.

Because of its complexity, it is difficult to see The Intersubjective Mirror in Infant Learning and Evolution of Speech as a course textbook, although readings from it would be useful in a senior seminar on cognitive development. Even if the promise from the discovery of mirror neurons is not completely fulfilled, Bråten’s work cannot be easily dismissed. In addition, he has done service to psychology by bringing the discipline back to topics it began examining in its infancy: the role of the self (e.g., Calkins, 1915) and the existence of consciousness (James, 1904).

References


