Theory of Mind: How Children Understand Others' Thoughts and Feelings

Martin J. Doherty

New York: Psychology Press, 2009. References, diagrams, figures, photographs, notes, glossary, indices. 264 pp. $31.95 paper. ISBN: 9781841695716.

In *Theory of Mind: How Children Understand Others' Thoughts and Feelings*, Martin J. Doherty presents an accessible and thorough summary of the history and evolution of research into children's theory of mind (ToM) understanding. Developing ToM understanding is a key accomplishment in children's cognitive and social development. In chapter 2, Doherty indicates that understanding others' intentions, desires, and beliefs allows us to predict, explain, and manipulate others' behaviors. The importance of these skills for human cognition should not be underestimated, and Doherty concisely outlines what thirty years of research have to say about how children of different ages understand various mental states. Doherty concludes a key shift occurs in children's understanding of false beliefs between the ages of three and four, at which time many researchers claim children have developed theory of mind (ToM) understanding. Doherty discusses the likely precursors to this understanding—pretense and the understanding of visual attention.

Most researchers accept age four as the age at which most children demonstrate an understanding of false belief. But this agreement has lately been complicated by research into the role of executive functioning in children's ability to handle false-belief tasks. However, as Doherty notes, a recent meta-analysis suggests that decreasing task demands often does not actually increase children's performance. Regardless of whether children develop complete ToM understanding by three or four, all children (barring psychopathology) will develop a general understanding of mental states. Doherty claims that the point of childhood development is for a child to learn how to use this information effectively.

Indeed, this is one of the shortcomings of Doherty's synthesis. Although he describes more than mere belief as part of a child's complete understanding of the mental states of others, Doherty pays little attention to how these other aspects affect children's social interactions. For example, according to Paul L. Harris in an article he wrote for *Developmental Science* called "Trust" (2008), although children develop a basic understanding of knowledge and ignorance around age three, they do so from practical reasons as much as from what others tell them. In addition, although Doherty acknowledges some people are better at understanding mental states than others, he does not delve into the important implications this difference plays in such issues as bullying.

Doherty's take on the role of pretense in children's development of ToM understanding is interesting. There are two ways, he says, in which researchers conceptualize the role of pretense in ToM development. They study children's early pretense as an environment in which children demonstrate ToM earlier than they do in other environments. And they study children's early understanding of pretense intentions as a precursor to their full ToM understanding.

Doherty claims children are generally able to follow others' simple pretense sce-

narios by the age of two. Given that pretense is representational (meaning that actions and objects stand for something other than themselves), some theorists interpret the ability of toddlers to respond to the pretense of others as an indication that they can understand the mental states of others in this quarantine world. This argument comports with Lev S. Vygotsky's characterization of pretense as a zone of proximal development in which children demonstrate understanding they could not demonstrate otherwise (*Mind in Society*, 1978). But contrary to these theorists, Doherty argues for pretense as a precursor to ToM understanding. He bases this assessment on the fact that children do not seem to understand pretense in mental-state terms until age four, around the same time they can handle false-belief tasks. Current evidence suggests a relationship between how complicated children's pretense is and their false-belief understanding, but no strong evidence proves this relationship is causal. Specifically, the social aspects of pretend play (e.g., communicating and coordinating pretense intentions) correlate most strongly with false-belief understanding.

Interestingly, these findings could also be explained by Vygotsky's theory, in that the presence of more-experienced, social partners can scaffold children's abilities. They gain support from the relationship between maternal language, siblings, and children's developing mental-state understanding. In particular, children's discussion of mental states with adults has been related to their mental-state understanding. And children with older siblings tend to demonstrate ToM understanding earlier than children without older siblings.

Another complicated question about ToM understanding is how do children develop such understanding. Doherty discusses the primary theoretical approaches, including theory-theory, simulation theory, and modularity. His own research into the relationship between children's understanding of nonmental representations and mental representations leads him to conclude that the theory-theory account most thoroughly explains how children develop an understanding of mental states. According to the theory-theory account, children's mental-state concepts reflect a "representational understanding of mind" in which propositions about intentions, desires, and beliefs are evaluated.

Given Doherty's preference for the theory-theory account of ToM development, his coda should have included a broader synthesis of the theory-theory approach and how it is supported, or not, by the body of research summarized in the rest of the book. For example, simulation theorists have argued the relationship between pretense and ToM understanding constitutes evidence for simulation theory. On the other hand, if viewed in light of the representational nature of pretense, the findings could offer support for the theory-theory account. In addition, although Doherty acknowledges the role of parents and siblings in the development of ToM, it remains unclear how this relationship provides support for the theory-theory account rather than simulation or modularity accounts.

Still, *Theory of Mind* is an excellent resource for scholars and lay readers interested in learning about children's ToM development. The book is timely because it provides a cohesive synthesis of past research and theory on ToM understanding.

There is much more for scholars in this field to learn about not only how children develop an understanding of mental states, but also how this understanding is used (or misused) in the general course of cognitive and social development. This book is a good place to start.

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Persuasive Games: The Expressive Power of Videogames

Ian Bogost
Cambridge, MA: MIT Press, 2007. Illustrations, notes. 432 pp. $37.00 cloth. isbn: 9780262026147

The rich history of games, whether for adults or children, shows that they have been used for much more than just entertainment. One of my favorite online resources to demonstrate this, Cornell University Library's "Pastimes and Paradigms: Games We Play," is filled with images and descriptions of board and card games that were used for education, ethical indoctrination, political campaigns, and brand promotion. Indeed, *Monopoly* has its roots in a Single Taxer's propaganda tool called *The Landlord's Game.*

Ian Bogost mentions this in *Persuasive Games: The Expressive Power of Videogames*, as he looks at historical game tropes within the realm of video games. Indeed, Bogost has made a career of not only teaching game design at Georgia Institute of Technology and critiquing persuasive games but of creating them, too. His company, also called Persuasive

Games, made a splash during the 2004 presidential campaign when candidate Howard Dean's Dean for America commissioned the firm to make the *Dean for Iowa* Web game that taught the basics of caucusing to Dean supporters. Six years and twenty-two games later, Bogost's company has built games—as described on the Web site—for "advertisers, public policy makers, corporate trainers, educators, news organizations—as well as ordinary people."

Bogost's book seems to have two main goals. The first is to make an argument for what Bogost describes as "procedural rhetoric." He first establishes the history and interpretation of the two words separately and then states that in procedural rhetoric "arguments are made not through the construction of words or images, but through the authorship of rules of behavior, the construction of dynamic models" (p. 29). A persuasive game doesn't merely treat you like a rat in a Skinner box, conditioning your behavior; it uses its procedural rhetoric to convince you of its argument by providing you with an illuminating experience.

Bogost contrasts the term *persuasive games* with that of *serious games*, which he feels excludes games without gravitas and high moral purpose. An advertising game that successfully sells you a product is just as valid and persuasive as an educational game that teaches you something. Likewise, he distances his concept from *captology*, which B. J. Fogg of Stanford University defines on the Captology Web site as "the study of computers as persuasive technologies. This includes the design, research, and analysis of interactive computing products created for the purpose of changing people's attitudes or behaviors."