

Mindblindness

Simon Baron-Cohen

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Reviewed by Michael E. Goldberg

One of the wonderful things about the borderline between psychology and philosophy is its immunity to experimentation. When psychologists attempt to understand the mechanisms and phenomenology of behavior they design hypotheses that can be tested, and attempt to convince us by the validity of their data that their hypotheses are true. When they talk about mind they rely on the clarity of their arguments and the irrefutability of their logic. From Socrates and Kant to Baron-Cohen philosophers of mind have overwhelmed us by their brilliance, and the mere fact that an experimentalist could never test their ideas or validate their elegant claims has never stood in their way.

The impressive thing about *Mindblindness* is that Dr. Baron-Cohen has attempted to carry over the unimpeachability of the philosopher to the realm of psychopathology. He begins by the assertion that humans have a theory of mind: that we describe the actions of others by ascribing to them the same thought processes that we have. He then postulates four mechanisms by which this occurs: an "intentionality detector (ID)" an "eye direction detector (EDD)," a "shared attention mechanism (SAM)," and a "theory of mind mechanism (ToMM)." I see you walking toward your copy of *Mindblindness* and think "He is going to pick up the book" (SAM); I think that you are going to read the book and think deeply about its consequences (ToMM). You toss the book into the trash (WHOOPS?).

Baron-Cohen neglects the fact that prediction is intrinsic to all aspects of behavior. When a monkey makes an eye movement to a moving target, the amplitude of the eye movement reflects that motion; the eye lands on target because the system predicted where the target would be at the end of the movement. Monkeys with striate lesions cannot detect that motion, and make eye movements to moving targets as if they are static (Segraves et al., 1987). They overshoot targets coming toward the center of gaze, and undershoot targets going away from the center of gaze. Does that mean that they lack a "Theory of Motion?" Or that the "Theory of Motion" resides in striate cortex? Or does it mean merely that they cannot perceive motion and because they cannot perceive it they cannot predict its consequences.

It is clear from Kanner's early descriptions of autism

that autistic children are unaware of social cues. It is also clear from psychological studies of infants and from Gross' (Gross, Rocha-Miranda, & Bender, 1972) and Perrett's (Perrett, Rolls, & Caan, 1982) elegant studies of monkey physiology that normal brains have hard-wired mechanisms for face recognition, which may be the substrate for social interactions. These may be the substrates for complicated behaviors that in infants function as reflexes: infants gaze at smiley faces because of brain circuitry. Young social animals survive by perceiving the behavior of others, and predicting that behavior. Autistic children may lack the same very basic, hard-wired mechanisms that enable them to interact with other people, to perceive their social nuances, and to predict what that behavior will be. Do they lack a theory of mind? Or do they just lack the mechanisms for social reflexes upon which the brain later constructs the nuances of social behavior, the way the brain constructs locomotor behavior by building upon and controlling the spinal pattern generators for gait that are apparent at birth.

Dr. Baron-Cohen makes eye movement detection a critical part of his analysis, despite the fact, as he admits, blind children do not develop autism, and can even understand that "see" means "perceive." My theory of Dr. Baron-Cohen's mind suggests he finds this fact somewhat disturbing. He even places congenital blindness in a table of *psychopathologies* lacking EDD! Eye movement is the ultimate epiphenomenon for attention (but look at the infant monkey who never gazes at the alpha male, although he must attend to him). If an autistic child lacks social perception and social prediction, will that child bother to look at eyes?

In summary, Dr. Baron-Cohen has produced a well-written, scholarly book. It is, to this reviewer, ultimately unconvincing because its ideas are untestable, and the phenomena that he describes open to other, probably equally untestable interpretations. Nonetheless the ideas, in their clarity and provocativity, make this an enjoyable book.

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