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SOCIAL
Why Our Brains Are Wired to Connect
By Matthew D. Lieberman
Illustrated. 374 pp. Crown Publishers. $26.

Social psychologists love the Prisoner's Dilemma. They use it to demonstrate the nature of calculated self-interest, with a setup like this: There's a reward ($10, say) to be split between two players, and what one gets depends on whether the other decides to split things fairly. If both players choose to cooperate, each gets $5. If one cooperates but the other chooses to "defect," the cooperative player gets nothing and the defector gets all $10. If both defect, they each get a dollar. The challenge is to decide without knowing what your partner has chosen. Defecting is the safer bet: you'll get at least $1 and possibly $10. If you cooperate, you run the risk that your partner will defect, grabbing the whole pot and leaving you looking like a chump.

"How can we explain why folks cooperate, ensuring that they will earn less money and their partners will earn more?" Matthew D. Lieberman asks in "Social: Why Our Brains Are Wired to Connect." If people are motivated only by self-interest, any explanation is elusive. But Lieberman, a professor of biobehavioral sciences at the University of California, Los Angeles, thinks people are even more motivated by something beyond self-interest: the drive for social connection.

"In addition to being self-interested, we are also interested in the welfare of others," he writes. "This, along with self--interest, is part of our basic wiring."

When Lieberman says wiring, he means wiring. It's neural connections he's looking for when he describes, for instance, a neuroimaging study at Emory University in which subjects play the Prisoner's Dilemma while in a functional M.R.I. machine (which tracks blood flow to different areas of the brain). The scientists found that when a subject's partner cooperated, activity increased in the ventral striatum, the brain's primary reward center — as long as the subject had cooperated, too. "The ventral striatum seemed to be more sensitive to the total amount earned by both players, rather than to one's personal outcome," Lieberman writes. He takes this to mean that people get more pleasure from the happiness of others than from their own solipsistic happiness.

People are always doing things in functional M.R.I. machines in this book: watching a romantic partner get an electric shock, evaluating ideas for television shows, playing an online game of catch called Cyberball. The goal is usually to set up a situation in which the person in the scanner experiences a particular emotion, like social rejection, so investigators can see which regions of the brain become active.

It's fair to assume, based on how many of these studies occur in Lieberman's own lab, that the author is a big believer in the power of neuroimaging to link brain regions with particular activities. This is a matter of some debate — much has been written recently about the overinterpretation of functional M.R.I. results, which one eminent psychologist has compared with phrenology — but Lieberman is uninterested in the controversy. To him, brain imaging reveals "the neural mechanisms of the social mind." Full stop.

He builds his case voxel by voxel. According to Lieberman, when we're not cognitively engaged in anything specific, the wandering mind activates what he calls the social cognition network. The fact that this is our default setting — the network is active even at rest — suggests to Lieberman that it has a greater adaptive value than any other neural network. "This network comes on like a reflex," he writes, and it directs us "to think about other people's minds — their thoughts, feelings and goals. . . . It promotes understanding and empathy, cooperation and consideration."

Lieberman seems to be a pretty social guy himself, and he generously shares stories from his life — his bad drug trip, his bad breakup, a bout of depression — even when they're not especially flattering, in the service of making a point. Along the way, he offers a good deal of evidence, most of it M.R.I.-based, supporting the adaptive value of brain systems that give us insights into others. These include not just the social cognition network but a network for "mentalizing" (intuiting what others are thinking), another for "harmonizing" (using self-control to keep from alienating others) and so on.

All this scanning leads to some cool findings, even if you're not inclined to follow them as far as the author does. Take the pain of rejection. Lieberman and his colleagues manage to provoke that feeling via Cyberball, when the invisible online players stop passing the e-ball to the subject — and the region that lights up in the scanner is the same region that lights up with physical pain. Looking at scans from two studies side by side, Lieberman says, "without knowing which was an analysis of physical pain and which was an analysis of social pain, you wouldn't have been able to tell the difference." I'm not sure what that reveals about our social evolution, necessarily, but I do know I might reach for the Tylenol next time I

feel down. Why not? It worked for the Cyberball subjects.

Robin Marantz Henig is a contributing writer for The Times Magazine and the co-author, with Samantha Henig, of "Twentysomething: Why Do Young Adults Seem Stuck?"

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