Interrogating Our Brains

Daniel Dennett returns to his roots with a sweeping and detailed view of the human mind

From Bacteria to Bach and Back
By Daniel C. Dennett
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IN THE MOVIE "Diner," there is a moment when a teen out for a drive stops to gaze at a beautiful woman galloping through the countryside on her stallion. He turns to his friend and says, "Do you ever get the feeling that there's something going on that we don't know about?" I must admit that I felt something of the same sort—on an intellectual level—when I first met Daniel Dennett almost 50 years ago. I was a young psychobiologist at UC Santa Barbara and hosting a famous physicist/neuroscientist, Donald M. MacKay, for a series of talks on how the brain worked in a mechanistic way. Mr. Dennett showed up for the talks, having driven more than 150 miles, prior to the construction of connecting freeways. As I watched this tall, imposing man—with the physical sure-footedness of a Rocky Mountain buckhorn and the mental agility of an Oxford don—intensely discussing my esteemed guest's ideas and their implications for free will, I knew I had to learn more about how his mind worked. I started reading Mr. Dennett back then and haven't stopped.

Mr. Dennett, now a professor of philosophy and cognitive science at Tufts University, has always shone a bright light on the problem of consciousness. His early writings insisted on the idea that consciousness was an illusion, a trick that the multifaceted brain pulled to give us that cozy feeling of an interior experience, with all its fullness—the redness of red, the painfulness of pain, the euphoria of love. He challenged the mentally comfortable posture we all have, of a self safely tucked into some brain structure. Instead, he argued, the "self" is the center of our individual "narrative gravity" in the same way physicists speak of a "center of gravity" for a physical object.

This suggestion is quite profound and complicated and has often been misunderstood. In response to Mr. Dennett's early landmark book, "Consciousness Explained" (1991), the cognitive-science cognoscenti quipped that the title should have been "Consciousness Explained Away." That was obviously not Mr. Dennett's point. It was thought by many distinguished philosophers, such as John Searle and Thomas Nagel, that Mr. Dennett was abandoning the first-person experience of consciousness, the personal nature of it, the qualia. He wasn't at all. He never doubted consciousness itself. He was offering a philosophical framework—more sophisticated than both common sense and religious dogma—for thinking about consciousness and the way in which subjective experience is constructed by our brains.

A few years ago, Mr. Dennett's enormous appetite for understanding the mind found him taking a detour to understand religious beliefs. Now he has returned to his intellectual roots, and in "From Bacteria to Bach and Back" he has brought together a lifetime of relentless engagement with the mystery of the mind. Using the tools developed by Darwin, Alan Turing and more recently Richard Dawkins, he provides more definition to his view that mindless elements (cells) can build minds just as mindless ants can build castles. Those ants don't care about the castle, and those cells don't care about you.

The book is a solid reference point for considering a multitude of ideas, opinions, notions and facts about the mind. Through 15 swift chapters (each divided into digestible sub-chapters), Mr. Dennett takes us from the "prebiotic" world to "The Evolution of Understanding" in animals. He retraces the origins of language, describes how "brains" are built from the bottom up, and explores the relationships among minds in "The Evolution of Cultural Evolution." Sometimes these ideas resonate with your own; sometimes they don't. That doesn't matter. His ideas don't slip around in your mind as you consider his arguments. Their solidity makes them leaping-off points.

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While Mr. Dennett touches only briefly in this book on the topic of free will, which greatly occupied him in "Elbow Room" (1984) and "Freedom Evolves" (2003), this knotty topic helps show the fine distinctions he insists on making. It's true that he believes the traditional understanding of free will—a "personal power somehow isolated from physical causation," as he puts it—to be an "incoherent and unnecessary" idea. But he does warn against the dangers of assuming that holding a deterministic view of the brain forces you to abandon the idea of free will entirely.

But Mr. Dennett insists that accepting a materialistic account of the brain does not mean that we should completely rid ourselves of the ideas of personal responsibility or blame. This is seemingly a surprising position for Mr. Dennett: If everything that is going to happen happens because it is determined by the physical brain, why hold someone morally responsible for his actions? This is a common reaction and concern, Mr. Dennett notes, of both cognitive scientists and the layperson. He feels that the simplicity of such a view lies in a deep, unquestioning acceptance of the Cartesian idea that the mind must be separated from the brain.

For Mr. Dennett, free will is indeed an illusion, but it is a useful and necessary one, like our conscious sense of ourselves. An illusion like this allows us to live and work in a society. As Mr. Dennett says, "We couldn't live the way we do without it." He goes on to argue that we should avoid cruel retributive punishment, but we should not give individuals a pass on moral responsibility. "If—because free will is an illusion—no one is ever responsible for what they do, should we abolish yellow and red cards in soccer, the penalty box in ice hockey and all the other penalty systems in sports?" In short, we still must regulate society as if we are choosing our actions, punishing conduct that breaks the rules we have set for ourselves.

Obviously what Mr. Dennett means by free will may be different from what you thought it meant.

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Daniel Dennett Explains It All

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One way to tease out the difference is to realize that he leaves room in the human mind for intent—and he points out that other types of minds may lack it. Thus the distinction between "competence" and "comprehension." Competence is the ability to carry out an act, but comprehension implies that the organism (or robot) carrying out the act has intent and an understanding of what it is doing. As I like to say, you may have a theory about your dog, but your dog doesn't have any kind of theory about you.

That the competence to do something does not require comprehension is proved over and over again in the natural world, Mr. Dennett notes. The idea of a Grand Designer (top-down planning) was upended by the reality of natural selection (a bottom-up process), which revealed that unknowing things, blindly selected for, can build and shape the magnificent creatures of the world. Darwin first shouted the idea, but Alan Turing was the one who suggested how cascades of simple processes could build toward something like what we call consciousness "in much the way evolution by natural selection builds ever more brilliant internal arrangements, organs and instincts without having to comprehend what it is doing."

Armed with this distinction, Mr. Dennett examines the advances of artificial intelligence, which are breathtaking at one level while being clumsy at another. While marveling at what humans can cook up, Mr. Dennett puts thoughtful constraints on our futuristic enthusiasms. He does not doubt the advances in AI, but he worries that we will "overestimate" the comprehension that the new tools will have. We humans too often prematurely grant authority to things that in fact lack comprehension.

Finally, Mr. Dennett renews his commitment to Richard Dawkins's idea of "memes," or the Darwinian way in which ideas propagate among human minds. While animal minds are selected for their contributions to reproductive fitness, the human mind has been bathed in culture. In human culture we manifestly see that there are aspects of human design that don't always augment the reproductive fitness of those who come up with them. No gorilla built Chartres Cathedral, and no bonobo built a circuit board. But these inventions, and the ideas behind them, weren't random mutations without precedent. The minds involved in human invention live in a culture that records prior human accomplishments and spreads them around for one and all to benefit from. The process can resemble the way a virus spreads around to survive and grow.

Ideas are subject to a seemingly extra-biological form of natural selection, allowing humans to skyrocket to the head of Mother Nature's class. The depth of Mr. Dennett's knowledge and the playfulness of his writing are on display as he examines the absorption and transmission of culturally generated memes. But he has important philosophical points to make as well.

Remember how we were all taught to toss out teleological thinking—the idea that there is a purpose or design to existence? We have all been taught that Darwin upended that idea. Mr. Dennett argues for another perspective. "Darwin didn't extinguish teleology: he naturalized it." With Dennett-ian flair, he juxtaposes the castles built by termites with Gaudí's eerily similar La Sagrada Familia, his famous multi-spired church in Barcelona. The termites don't know the reasons for their structure, but Gaudí the human architect knew the reasons for the structures of his masterpiece. But that's the only essential difference, Mr. Dennett argues.

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Of course, great things were accomplished with bottom-up processes: genetic mutation and the selection of novel traits in accordance with their contributions to reproductive fitness. But we must now add to the mix "memetic mutation" and selection among ideas, philosophies and technologies. Humans influence the fate of the Earth in a top-down manner with concepts or innovations that spread without the direct aid of sexual reproduction. We humans are the "reason-representers." And having created a mental space for reasons, we have to fill it.

In its sweeping yet detailed view of the human mind, "From Bacteria to Bach and Back" plays to all of its author's strengths. The scope of his canvas, and the power of his explanations to widen our horizons, help us believe that we can think up decent answers to seemingly impenetrable problems. This is a book to read and relish and then read again.

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