It's Complicated

Unraveling the mystery of why people act as they do

REVIEW BY MICHAEL SHERMER

BEHAVE:
The Biology of Humans at Our Best and Worst
BY ROBERT M. SAPOLSKY
Penguin Press, 800 pp., $35

HAVE YOU EVER THOUGHT about killing someone? I have, and I confess that it brought me peculiar feelings of pleasure to fantasize about putting the hurt on someone who had wronged me. I am not alone. According to the evolutionary psychologist David Buss, who asked thousands of people this same question and reported the data in his 2005 book, *The Murderer Next Door,* 91 percent of men and 84 percent of women reported having had at least one vivid homicidal fantasy in their life. It turns out that nearly all murders (90 percent by some estimates) are moralistic in nature—not cold-blooded killing for money or assets, but hot-blooded homicide in which perpetrators believe that their victims deserve to die. The murderer is judge, jury, and executioner in a trial that can take only seconds to carry out.

What happens in brains and bodies at the moment humans engage in violence with other humans? That is the subject of Stanford University neurobiologist and primatologist Robert M. Sapolsky's *Behave: The Biology of Humans at Our Best and Worst.* The book is Sapolsky's magnum opus, not just in length, scope (nearly every aspect of the human condition is considered), and depth (thousands of references document decades of research by Sapolsky and many others) but also in importance as the acclaimed scientist integrates numerous disciplines to explain both our inner demons and our better angels. It is a magnificent culmination of integrative thinking, on par with similar authoritative works, such as Jared Diamond's *Guns, Germs, and Steel* and Steven Pinker's *The Better Angels of Our Nature.* Its length and detail are daunting, but Sapolsky's engaging style—honed through decades of writing editorials, review essays, and columns for *The Wall Street Journal,* as well as popular science books (*Why Zebras Don't Get Ulcers, A Primate's Memoir*)—carries the reader effortlessly from one subject to the next. The work is a monumental contribution to the scientific understanding of human behavior that belongs on every bookshelf and many a course syllabus.

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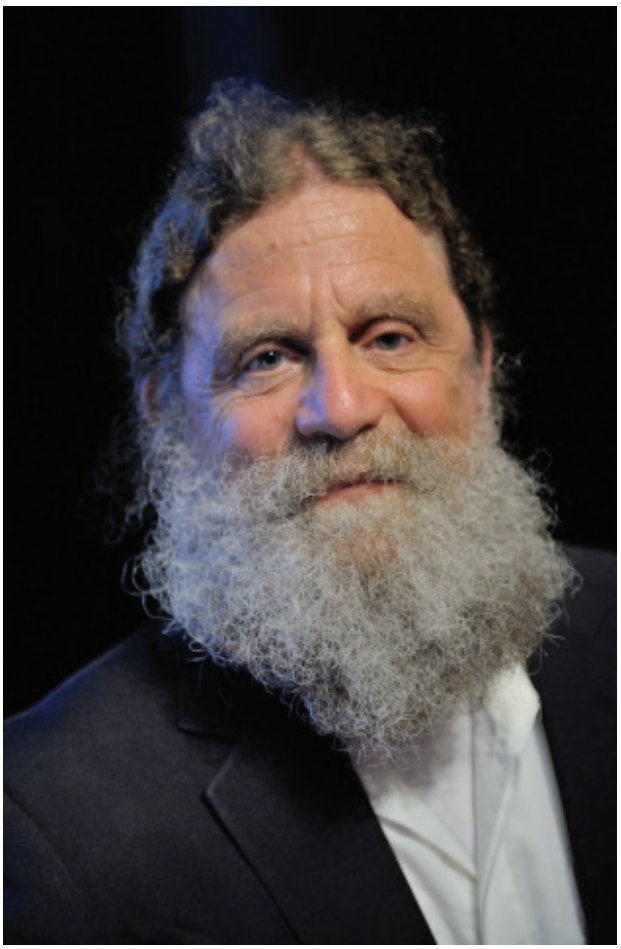
Sapolsky begins with a particular behavioral act, and then works backward to explain it chapter by chapter: one second before, seconds to minutes before, hours to days before, days to months before, and so on back through adolescence, the crib, the womb, and ultimately centuries and millennia in the past, all the way to our evolutionary ancestors and the origin of our moral emotions. He gets deep into the weeds of all the mitigating factors at work at every level of analysis, which

Michael Shermer is the publisher of *Skeptic* magazine, a monthly columnist for *Scientific American*, and a Presidential Fellow at Chapman University. He is the author of *The Science of Good and Evil* and *The Moral Arc.* His next book is *Heavens on Earth: The Scientific Search for the Afterlife, Immortality, and Utopia.*



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is multilayered, not just chronologically but categorically. Or more to the point, uncategorically, for one of Sapolsky's key insights to understanding human action is that the moment you proffer *X* as a cause—neurons, neurotransmitters, hormones, brain-specific transcription factors, epigenetic effects, gene transposition during neurogenesis, dopamine D4 receptor gene variants, the prenatal environment, the postnatal environment, teachers, mentors, peers, socioeconomic status, society, culture—it triggers a cascade of links to all such intervening variables. None acts in isolation. Nearly every trait or behavior he considers results in a definitive conclusion, "It's complicated."

Does this mean we are relieved of moral culpability for our actions? As the old joke goes: nature or nurture—either way, it's your parents' fault. With all these intervening variables influencing our actions, where does free will enter the equation? Like most scientists, Sapolsky rejects libertarian free will: there is no homunculus (or soul, or separate entity) calling the shots for you, but even if there were a mini-me inside of you making choices, that mini-me would need a mini-mini-me inside of it, ad infinitum. That leaves two options: complete determinism and compatibilism, or "mitigated free will," as Sapolsky calls it. A great many scientists are compatibilists, accepting the brute fact of a deterministic world with governing laws of nature that apply fully to humans, while conceding that such factors as brain injury, alcoholism, drug addiction, moments of uncontrollable rage, and the like can account for some criminal acts.

Sapolsky will have none of this. Telling a child after a successful task, "you must have worked so hard," he notes in one of many examples, "is as much a property of the physical universe and the biology that emerged from it" as telling her, "you must be so smart" (the former produces better results than the latter). Or, "transcranial magnetic stimulation techniques that transiently activate or inactivate a part of the cortex can change someone's moral decision making, decisions about punishment, or levels of generosity and empathy. That's causality." Sapolsky quotes American cognitive scientist Marvin Minsky in support of the position that free will is really just "internal forces I do not understand." We understand much more about human behavior than did our ancestors who burned witches in the 15th century (Sapolsky reaches deep into the past to reveal how inadequate our theories of human action have been). That gaps still remain

does not open the volitional door, he contends.

This is the part of *Behave* where the academic rubber meets the legal road as Sapolsky ventures into the areas of morality and criminal justice, which he believes needs a major overhaul. No, we shouldn't let dangerous criminals out of jail to wreak havoc on society, but neither should we punish them for acts that, if we believe the science, they were not truly responsible for committing. Punishment as retribution is meaningless unless it is meted out in Skinnerian doses with the goal of deterring unwanted behaviors. Some progress has been made on this front. People who regularly suffer epileptic seizures are not allowed to drive, for example, but we don't think of this ban as "punishing" them for their affliction. "Crowds of goitrous yahoos don't excitedly mass to watch the epileptic's driver's license be publicly burned," Sapolsky writes in his characteristic style. "We've successfully banished the notion of punishment in that realm. It may take centuries, but we can do the same in all our current arenas of punishment."

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What Sapolsky is talking about here is the difference between retributive justice and restorative justice, to which I devoted a chapter in my 2015 book, *The Moral Arc*, along with the knotty problem of free will. I agree with Sapolsky that we need reform of our archaic criminal justice system, focused as it is more on retribution than on restoration of harms done to individuals and society. There are many social experiments to monitor, such as how Germany handles its prisoners with the goal of returning most of them to being productive members of society in a relatively short time. As for free will, a way to think about this in the context of a purely materialist determinist worldview is that we are volitional beings through (1) our modular minds that have many competing neural networks, which (2) allow us to make real choices by veto-power—"free won't"—over contending impulses, which (3) give us a range of volitional choices by varying degrees of freedom, so (4) our choices are part of the causal net but free enough for most of us in most circumstances to be accountable for our actions. This won't satisfy hardcore determinists, but in support note the results of a 2009 survey of 3,226 philosophy professors and graduate students asked to weigh in on 30 subjects of concern in their field. On the topic of "free will: compatibilism, libertarianism, or no free will," the survey found that the majority of professional philosophers (59.1 percent) believed that free will and determinism were compatible. Either they're all misguided (1,906 philosophers trained to think about such matters?), or this may be one of those problems for which no answer will satisfy everyone, restrained as it is by our language and cognition.

This is just one of several contentious issues in *Behave* that will raise the hackles of those who think and feel strongly on such matters, concluding as it does with the biggest of them all: war and peace, which comes as an uplifting finale largely in agreement with Steven Pinker and others, although Sapolsky picks a few nits over the proper measure of just how bad certain periods of history were. He argues, for example, that it is inappropriate to compare the six years of World War II with the dozen centuries of the Mideast slave trade or four centuries of Native American genocide. Sapolsky concludes that World War II really was the worst thing humanity ever did to itself. Fine, but the important point is that we've stopped doing such things. Our better angels are winning out over our inner demons, and Sapolsky concludes his tome by reviewing the many acts of kindness and reconciliation humans have exhibited, entreating us to "recognize that science can teach us how to make events like these more likely."

Amen, brother.