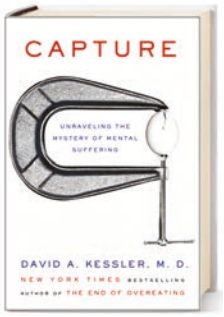
HEAD CASE

Capture: Unraveling the Mystery of Mental Suffering

by David A. Kessler. Harper Wave, 2016 ($27.99; 416 pages)



When American novelist David Foster Wallace delivered the commencement address at Kenyon College in 2005, he urged the graduating class to "exercise some control over how and what you think." If you don't at least try to regulate your thoughts and behaviors, Wallace cautioned, you will go through life "dead, unconscious, a slave to your head." Wallace himself long suffered with unwanted negative thoughts and crippling self-doubt—and took his own life three years after that speech.

But can our mind become a "terrible master," as Wallace described? Kessler, the former commissioner of the U.S. Food and Drug Administration, has considered that question for the past two decades, studying how substances such as food, alcohol and tobacco can hijack our brain chemistry and compel us to act against our own best intentions—binging on brownies, booze or cigarettes.

He shared his basic theory of how this happens in his 2009 *New York Times* best seller, *The End of Overeating.* But in his latest offering, *Capture,* Kessler takes those ideas one step further: he asserts that the same biological mechanism that can derail our self-control is also largely to blame for our emotional suffering.

He calls this mechanism "capture" and describes it as the process by which some stimulus—a substance, place, thought, memory or person—can take hold of our attention and shift our perception. "Once our attention becomes increasingly focused on this stimulus," Kessler writes, "the way we think and feel, and often what we do may not be what we consciously want." In other words, when capture is set in motion, it can make us feel that we have no control over our thoughts or actions.

For the most part, the book serves up a theoretical take on the psychological forces that dictate our destructive impulses, such as self-doubt and anger, and seed our mental afflictions, such as depression and addiction. But Kessler also sketches out some neurobiological underpinnings for his theory. In the brain, he explains, "capture is the result of neural patterns that are created in response to various experiences." Over time our neural response to a stimulus can become automatic, and when that response does not match our conscious intentions, we feel blown off course.

Kessler illustrates his theory with a series of vignettes, exploring Wallace's lifelong struggles and Colorado cinema shooter James Holmes's obsessions, among others. Capture can poison the mind, Kessler notes, but it can also provide the antidote. He profiles some people who escaped distressing feedback loops and found stability by replacing an unhealthy mindset or preoccupation—say, overwhelming anxiety—with a more positive one, such as exercise.

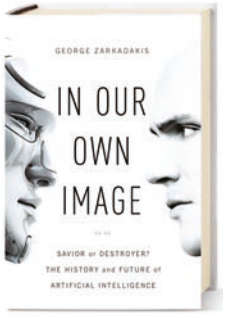
These stories about real people are engaging yet ultimately provide only anecdotal support for Kessler's theory. Some readers may be left craving more scientific evidence to better understand just how capture works, what triggers it and how we can break free.

—Lindsey Konkel

ARE HUMANS DOOMED?

In Our Own Image: Savior or Destroyer? The History and Future of Artificial Intelligence

by George Zarkadakis. Pegasus Books, 2016 ($27.95; 384 pages)



In the film *Avengers: Age of Ultron,* Tony Stark (aka Iron Man) and Bruce Banner (aka the Hulk) develop a powerful artificial intelligence to perfect Stark's global defense system. The AI, Ultron, immediately decides that the only good way to defend humans is by, well, *destroying* them. Skynet, the AI that wakes up in the *Terminator* movies, quickly arrives at the same conclusion, which perhaps gives new meaning to the old saying, "Great minds think alike."

Is the human race really racing down the road to its own extinction through the engineering of AIs that are smarter than we are? In his new book, *In Our Own Image*, AI expert Zarkadakis explores this and related questions with remarkable ingenuity, clarity and breadth, weaving together a tapestry of material drawn from a range of disciplines—not only computer science but history, philosophy, psychology and neuroscience.

We have already created smart machines, but we are far from cracking the big nut, consciousness—and not, he adds, because this cannot be done but because we have been slow on the engineering side. Neuroscience is revealing that consciousness results from an integration of information flowing in complex loops from multiple parts of the brain to the neocortex. In theory, we can build circuits that work the same way, Zarkadakis says, and the "neuristors" and other so-called neuromorphic devices invented in recent years are gradually moving us in this direction.

He does a particularly good job answering one of the most basic questions about AI—Why are we trying so hard to create *artificial* minds when we have so many real ones right at hand? He argues that we are driven to do so by ancient, unconscious tendencies to imbue inanimate objects with humanlike spirits. We have created totems for thousands of years, and praying to them has given us a feeling of control over our lives; the ultimate expression of these tendencies would be the creation of an inorganic object that we can truly control, one that perfects human abilities.

The problem here is that a split second after we have created that entity, it will, like Ultron, almost certainly transform itself into a much more powerful entity over which we have no control. When that first AI wakes up into a state of humanlike consciousness, like humans, it will be concerned about its survival, and so its first act might just be to upload itself to the Internet. Zarkadakis notes that physicist Steven Hawking and others have issued dire prognoses about what will happen next, but he suggests that what follows is "simply unpredictable"—and little more than a matter of faith at this point.

The bottom line is that inexorable, largely unexamined forces are driving us at lightning speed toward a pivotal moment for our species. Let's *examine* this process, Zarkadakis says, rather than mindlessly allow it to overtake us.

—Robert Epstein