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SPECIAL REPORTS

Reading List for a New World Order

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We asked five scholars of our digital age to name a few influential books on technology that they had recently read — or reread. Here are their choices.

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Amara's law states: We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run. There are many examples of this adage, coined by the late futurist Roy Amara: Automation marches us toward high unemployment; social networks bring us simultaneously closer together and further apart; everything we do is cataloged; and it is all happening far too fast for us grasp.

Two recent books on technology bring this idea into focus for me: *Thank You for Being Late: An Optimist's Guide to Thriving in the Age of Accelerations* by Thomas L. Friedman (Farrar, Straus and Giroux, 2016) and *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* by Cathy O'Neil (Crown Publishing, 2016). They are companions. The first lives at the level of politics and society, while the latter is a cautionary take on how technology touches each of us, often invisibly, and often to devastating effect.

Both books are of the type that reads like a series of anecdotes that elucidate a huge problem and then offers a sketch of a solution that is justified by the preceding chapters but doesn't quite seem up to the task. But, hey, the

problem is hard, and sometimes just outlining the problem itself is what's important.

By way of example, O'Neil discusses "recidivism models" that take features of a criminal defendant to "score" that defendant to help determine sentencing. The problem, of course, is that these algorithms are opaque. They provide a veneer of objectivity but hide their underlying assumptions (both to the user and to the target of the system). The reader should decide what consequences such an approach might have when scrutinizing job applicants, determining insurance rates, or just calculating how many police officers should walk one's streets.

In any case, my recommendation is to read Friedman's book for context and O'Neil's book for detail and depression, and then reread Friedman's book for a dose of optimism. We are clearly living in the long run of technology, but perhaps even though we are but linear beings we might still be able to handle exponential change.
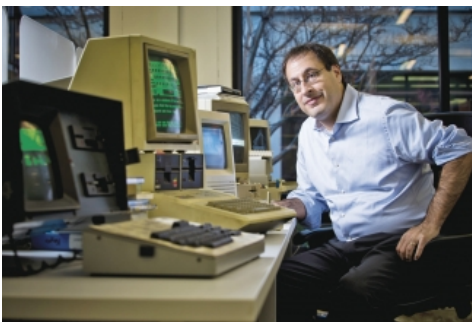
The Digital Campus: Big Data

Colleges want to use big data to better track students and help them succeed, to find out what works in the classroom, and more. This special report looks at the promise — and the limits — of those efforts.

- Keeping Up With the Growing Threat to Data Security ✔ PREMIUM
- Big Data for Student Success Still Limited to Early Adopters ✔ PREMIUM
- Growing Pains Begin to Emerge in Open-Textbook Movement ✔ PREMIUM
- Where Every Student Is a Potential Data Point ✔ PREMIUM
- Big Hopes, Scant Evidence ✔ PREMIUM

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That weird feeling when you get off the plane after an overnight international flight and you turn on your phone and — despite the jet lag, despite the disorientation, despite what may be an unfamiliar language and unaccustomed options at the espresso bar, it's all right there: all your apps, your digital life just as it was when you boarded seven hours earlier … except. Your phone is roaming on a network you've never heard of, and all your web browsing is torqued through newly localized filters.

Benjamin H. Bratton explains that feeling in *The Stack: On Software and Sovereignty* (MIT Press, 2015), a sprawling book on the relationship between the planetary-scale "megastructures" of contemporary computation and the geopolitics of a world order that still defines itself in terms of nation states and borders. Exhilaratingly written, *The Stack* just might be the unannounced sequel to Michael Hardt and Antonio Negri's millennial *Empire*, which theorized the world order on the eve of 9/11, Facebook, and so much else.

Alongside of that I'm just beginning what first seemed like a far more specialized study but quickly turned into one of those "now why hasn't anyone ever told that story before" books: Marie Hicks's *Programmed Inequality: How Britain Discarded Women Technologists and Lost Its Edge in Computing* (MIT Press, 2017), which traces the role of gender politics in British computing in the postwar period. It starts with everything that *The Imitation Game* obscured in its film treatment of code-breakers during World War II, and from there sets out to explain why and how Great Britain was reduced to playing catch-up by the time the personal computer revolution hit at the end of the 1970s. The party was thrown by guys in their garages in Palo Alto, and not the daughters of all those British women who first perfected the art of speaking to machines at Bletchley Park.

Finally, a novel — Jarett Kobek's *I Hate the Internet* (We Heard You Like Books, 2016), the New Grub Street we deserve: "The Internet," one of the first few lines helpfully explains, "was a computer network that people used to remind other people that they were awful pieces of shit."

David M. Levy is a professor in the Information School of the University of Washington and author of *Mindful Tech: How to Bring Balance to Our Digital Lives* (Yale U. Press, 2016).

As someone who investigates the acceleration of life and the role that digital technologies may be playing in the process, I was pleased to see two books published recently that will surely add dimension to both my research and teaching. The first of these books is an obvious addition. By Judy Wajcman, a professor of sociology at the London School of Economics and Political Science, *Pressed for Time: The Acceleration of Life in Digital Capitalism* (U. of Chicago Press, 2015) presents a highly nuanced account of the modern experience of acceleration. Drawing on decades of work in science and technology studies, she argues that digital technologies aren't simply the cause of today's acceleration, but rather are one of the factors within a larger sociotechnical matrix of values and practices that is responsible for today's speedup. From this perspective, today's acceleration — which she shows is lumpy, a mix of both acceleration and deceleration, and experienced differently according to gender, and other factors — isn't technologically determined, and so is potentially malleable, open to social and political intervention.

The second book requires a bit more explanation. For decades, three social psychologists, Sheldon Solomon, Jeff Greenberg, and Tom Pyszczynski, have been developing a substantial body of evidence for the cultural anthropologist Ernest Becker's thesis — most fully developed in his Pulitzer Prize-winning book, *The Denial of Death* (Free Press, 1973) — that fear of our mortality is one of the hidden drivers of human culture. In their 2015 book, *The Worm at the Core: On the Role of Death in Life* (Random House), they present their evidence in highly readable fashion. While their work holds insights for many of today's problems, not least a deeper understanding of where prejudice, scapegoating, and terrorism come from, it also allows us to ask, and may supply existential answers to, questions such as: Why are we

running so fast, powered in large measure by our latest digital devices and apps, and why are we so busy distracting ourselves? Is it possible that we are trying to escape the inescapable, the fate of all living creatures?

Abby Smith Rumsey is a historian and the author of _When We Are No More: How Digital Memory Is Shaping Our Future_ (Bloomsbury Press, 2016).

Often we invent tools with wondrous uses in mind only to be surprised how easily they are abused. A compelling and timely book about the misuse of genetic technology by politicians and scientists in Stalinist Russia is Loren Graham's _Lysenko's Ghost: Epigenetics and Russia_ (Harvard U. Press, 2016). Guided by newly available sources and his unerring moral intelligence, the historian of Soviet science revisits the frightening story of the Soviet agronomist Trofim Lysenko (1898 -1976). Lysenko's championing the heritability of acquired traits served Stalin's need to bend the will not only of Mother Russia but of Mother Nature herself to his goal of fast-tracking communism. Famines and ecological disasters ensued. Scientists such as Nikolai Vavilov were persecuted and biological science suffered a catastrophic collapse. Graham brings the story up to date with ominous details about the rise of "neo-Lysenkoism" in present-day Russia.

Another take on political abuse of technological know-how is Brian Moore's last novel, _The Magician's Wife_ (Bloomsbury, 1997). Based on the life of the magician and inventor Jean-Eugene Robert Houdin, it relates how Emperor Napoleon III recruited him to quell a rebellion in colonial Algeria. The master of illusion's technological sleights of hand pass for miraculous powers superior to the insurgency's charismatic religious leader. The French win this skirmish but lose the war. The proud master is irredeemably corrupted in the process. _The Bestseller Code: Anatomy of the Blockbuster Novel_ (St. Martin's Press, 2016) by Jodie Archer and Matthew L. Jockers asks if there is a code for writing bestsellers. Their answer is a qualified "yes, with our algorithm." Is it surprising that the signature features of bestsellers map onto the advice writing coaches give on how to tell a story? Maybe not — and for that we should be grateful. But it is noteworthy that sex and violence are only bit players in a book's success. The lead roles go to emotional intimacy and work. As a bonus, the authors append a list of bestsellers ranked according to how well the algorithm scored them.

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Too often, when we talk about technology, we focus on the latest gadgets and gizmos. We pay attention to products and PR at the expense of practices or processes. This is

particularly true — unfortunately true — in education technology. It's for that reason that I often turn to one of my favorite books, Ursula M. Franklin's *The Real World of Technology* (CBC Enterprises, 1990). Franklin insists that "Technology is not the sum of the artifacts, of the wheels and gears, of the rails and electronic transmitters … Technology is a system. It entails far more than its individual material components. Technology involves organization, procedures, symbols, new words, equations, and, most of all, a mindset." Technology must be examined, she argues, as an "agent of power and control."

Franklin died last year, as did the author of my other favorite book on technology — that's Seymour Papert's *Mindstorms: Children, Computers, and Powerful Ideas* (Basic Books, 1980) — and their loss prompted me to reread both of these classics to help think about the politics of technology and the ideology of computing, then and now.

My advice: Read technology books by women. Read technology books by writers of color. Read technology books by writers from the Global South. These authors often subvert the dominant ideologies about technology as progress, as inevitable, recasting those imperialist technological narratives by paying much closer attention to power and control. Take Simone Browne's *Dark Matters: On the Surveillance of Blackness* (Duke U. Press, 2015), for example. The book reframed my own thinking about surveillance — and digital technologies more broadly. Rather than accepting the Panopticon as the archetype for our modern notions of power and control, Browne demonstrates that surveillance systems were an essential part of the trans-Atlantic slave trade. Indeed, surveillance technologies — that is, to borrow from Ursula Franklin, the "organization, procedures, symbols, new words, equations, and, most of all, a mindset" — have been inextricably tied to slavery in the United States and to the construction of blackness.

"What happens when blackness enters the frame?" Browne asks — and this is a question that those in education technology need to be posing a lot more often with regards to the tools and practices that "see" and "don't see" students.

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