

New Dark Age: Technology and the End of the Future

Reviewed by C. S. SCHREINER

New Dark Age: Technology and the End of the Future, by James Bridle. Verso Books, 2018; 294 pages; Paperback, \$16.95.

It is commonly known among market experts and consumers that, unlike movie theatres and bookstores, the business model of Netflix is perfectly suited to optimize profits during pandemics, and that one of the most popular domestic pastimes while “sequestering in place” has been bingeing and “chilling” on Netflix and other media streaming platforms. In a recent article, a respected technology critic remarks that his most frequent pandemic activities, which absorb more than six hours per day on average, are “doomscrolling,” which is scrolling through bad news, bingeing on Netflix, watching home improvement videos on YouTube, and playing online video games. Book reading is not mentioned.¹

Well then, what about book reading? How does a pandemic challenge those for whom reading is an intrinsic necessity, those who, if deprived of reading, would not be themselves? Independent bookshops have been shuttered until further notice, or offer curb service, which is not the same as leafing through books in a cozy corner. But Amazon has done a brisk pandemic business in Kindle downloads. If one is averse to downloading digital texts when books are available at home, a noble alternative consists of rereading favorite titles in one’s home library—a book apropos of pandemic indolence such as the Russian novel *Oblomov* (1859), about a phlegmatic landowner that will not get out of bed because he sees no justifiable reasons for doing so. Sequestering in place is *Oblomov*’s stubbornly enforced passive lifestyle. Not exciting enough for you? Well then, wear a mask when you go to the post office to pick up your books ordered online. Sanitize your hands before and after... A new book should ideally be fresh enough in its approach to bring novelty to the *tedium vitae* of pandemic sequestering, but also stir something inside us that resonates with our experience and seems pertinent without being trendy or entertaining. Some of my students have good naturedly recommended that I should read *entertaining* books during a global crisis. Can someone explain why so-called *serious* books are inappropriate during times like these?

You guessed it: James Bridle’s *New Dark Age: Technology and the End of the Future* is a serious book, but it is engaging and readable. Books about technology that are detailed, well-researched but accessible to a non-specialist audience comprise a genre that should appeal to a diverse readership since almost everyone is immersed in some sort of technological milieu. Yet I personally do not know anyone who reads books like *New Dark Age: Technology and the End of the Future* (or, for that matter, anyone who writes them). This is unfortunate, as Bridle’s book achieves admirable coverage in its effort to express a synthetic understanding or general ecology of daunting, seemingly unrelated technologies that have altered existence in the

Anthropocene. Such synthetic feats of writing, already impossible for most scholars and citizens overwhelmed by information, who “try to engage in the least amount of cognitive work they can get away with,”² strike me as rare gifts of research we cannot afford to ignore. In his recently published intellectual memoir, Howard Gardner, whose own career has been distinguished by its synthetic approach to research, observes that such publications are becoming infrequent. “I am concerned that such works of synthesis may on the wane. Alas, the trend in the academy is toward an ever sharper focus on highly technical quantitative work within standard disciplinary boundaries.”³ Indeed, the professors that I know rarely read outside their fields of research, and I am unfamiliar with students who read books that have not been assigned or that do not represent a trending Netflix or HBO series such as *Game of Thrones*. When I was a graduate student, I knew a Dutch engineer who did consulting for Perkins Elmer and worked on an obscure component of the Hubble telescope. Always humble, he did not consider himself a scientist but a “technician,” and we often enjoyed lively discussions of generalist books about science in which we shared an interest—books such as Hans Moravec’s *Mind Children* (1988) and *Descartes’ Dream* by Davis and Hersch (1987). In our wine-fueled discussions, we often found ways that the book we had read dovetailed with our personal interests and professional lives.

In this regard, I recently had an online experience that concretely exemplifies a problem investigated in James Bridle’s *New Dark Age*. After being enthralled by a sermon on YouTube orated by Rev. Michael Curry at the Washington Cathedral on the eve of the presidential election in 2020, I sent the YouTube clip to a relative in northern Vermont.⁴ Although I had much to say about the sermon, I restrained myself from predisposing the recipient, merely noting that I was “astonished” by the sermon, that it is twenty-seven minutes long, and they should give themselves the gift of paying undivided attention to the sermon. This was the heartfelt recommendation of an old friend who had sent me the sermon, which I followed in earnest, and responded to in kind. The next day, I received an email reply that contained links to seven other sermons by Rev. Curry on YouTube without any comments except, “Rev. Curry is famous!” Now, what do you think concerned me? I think what occurred in our exchange, and in much of what passes for communication online, is unreflective or reactive *file transfer*. One of the common complaints voiced by students about remote learning is that most of the exchanges with the instructor amount to impersonal file transfer and downloading. (“See attached article. Read it, then post your responses to our Moodle forum by Thursday at 6:00 pm.”) It troubled me that there was no appreciative, critical, or at least personally nuanced response to the individual sermon, delivered by Rev. Curry on Nov. 1st, but only more sermons. The urgent specificity of that sermon went unheeded. Poof! Gone. It was as if the impressive *quantity* of sermons was a statement about their *quality*, or further evidence of the Reverend’s celebrity, something in which I have no interest. The sermons were reduced to material that can be immediately distributed without listener participation. I certainly did not have the wherewithal to process all those sermons, each of which would surely be captivating in explicit ways that would require my fully engaged attention. In short, the response to the sermon I sent contributed to the glut of information that is constantly being churned

and distributed without individual engagement. More material is not “better” than less if the material is, well, precisely that—unprocessed material.

This problem, “the poor returns on overwhelming flows of information” (214), is one that James Bridle takes up with impressive rigor-- the way the tsunami of information in our lives does not clarify anything but only makes everything more incomprehensible, so we just pass shards of it along, uninterpreted, as a way to cope with ceaseless incoming information. This problem of file transfer has been accelerated and magnified by digital technologies such as Twitter, whose most popular feature (made infamous by Trump) is to “retweet” or forward tweets that the recipient has not bothered reading. Many users of Twitter are not exegetes or critics but insentient relays—mere reactive synapses in a vast and irrational commotion of sending and receiving.

One of several recent investigations of what Erich Hörl has called the “technological condition,”⁵ James Bridle’s *New Dark Age* describes large-scale technical developments that have become seamlessly integrated with human existence beyond its comprehension. These developments include surveillance culture, artificial intelligence, drone deployment, climate science, robotic workforce and factory systems, social media, and the new media ecosystem of automated entertainment systems such as YouTube and online video games. Bridle writes dense but jargon-free prose in reporting the intricacies of these technological developments and systems. His critical positioning is sharp and consistent without being overly tendentious, neither a jeremiad nor personal grievance.

Of recent milestones in technological reporting for a popular audience, Nicholas Carr’s well-written book, *The Shallows* (2011), which first appeared three years earlier in an article in the *Atlantic*, “Is Google Making Us Stupid?”, achieved a popularity uncommon for a serious investigation of the alarming and often regressive influence of digital technology in our lives. The success of Carr’s book can be attributed to its focus on recognizable lifestyle and literacy changes inculcated by digital apps, and to the personal anecdotes evincing those changes that Carr tactfully distributes throughout his text. Bridle’s *New Dark Age* is less personal, and it covers a wider range of topics whose technical complexity will arguably diminish his readership regardless of his accessible prose.

On the other hand, Bridle’s book will surely reach more readers than Bernard Stiegler’s formidable work, *The Age of Disruption: Technology and Madness in Computational Capitalism* (2019). Stiegler, who passed away in August, 2020, penetrated more profoundly than anyone else into the epistemological alterations in consciousness, attention, and memory effected by digital technologies and the industrialization of desire, alterations which he argued had a catastrophic impact on human development, family life across generations, and educational learning outcomes. However, Stiegler had a habit, stubbornly persisting in all his writings, of coining convoluted philosophical neologisms that could only antagonize and alienate the so-called common reader. On an informal scale of accessibility ranging from most accessible (1) to least (10), Carr’s book would merit a 3, Bridle’s a 6, and Stiegler’s a 9 or 10.

Bridle does not critique everything technological as comprising a new Dark Age, but he leverages the metaphor of darkness to argue that technology progressively occludes itself, its own internal logic, from its human users and customers, such that decoding or disclosing its meaning and significance becomes ever more difficult. Bridle calls this problem “technological opacity” (119), an ever-expanding shadow that both eclipses and envelops civilization even as users adopt ever more technologies. That image of encompassing darkness reverses the image of enlightenment culture, which increases our light, our literacy and secular understanding. In other words, the question of technology for humans is foremost a hermeneutical problem—how to understand the digital programs and platforms that have colonized the lifeworld. To speak of a new dark age, then, is entirely different than to speak of a dark epoch like the Middle Ages when knowledge was inaccessible to the millions of European citizens who could not read Latin. Today we have a surplus of knowledge; and while illiteracy is no longer the main darkening force in our lives, the sheer amount of knowledge produced by increases in raw computing power, following Moore’s law, creates a condition that is akin to illiteracy in the mute incomprehension with which we gape at Big Data and its “clouds of apparently infinite computational power” (83). Common assumptions about technology as a democratizing force are shown by Bridle to be misguided if not utterly erroneous. “Technology is in fact a key driver of inequality across many sectors. The relentless progress of automation—from supermarket checkouts to trading algorithms, factory robots to self-driving cars—increasingly threatens human employment across the board” (113). Although many critics would agree with this dire forecast about automation technologies, there are no few automation theorists who have a considerably more nuanced if not guardedly optimistic view, arguing that workplace automation will force governments to implement universal basic income to compensate for mass unemployment, and this innovation might “bring us closer to a world of human flourishing.”⁶

Some of the examples of technological opacity described by Bridle are frankly disorienting because he scrutinizes the internal dynamics of systems with which we have a superficial and “friendly” consumerist familiarity. Such systems benefit from public trust. Almost everyone shops on Amazon, but how many Amazon customers have peeked inside its warehouses? Bridle takes a close look at basic operations inside an Amazon warehouse where order processing, distribution and shipping occur. Such structures are colossal—Bridle includes a photograph of the Amazon warehouse in Rugeley, Staffordshire, which is nine football fields long. The accelerated pace of tasks is exhausting for the nonunionized employees, who each day push trolleys full of merchandise the equivalent of fifteen miles. Their productivity is monitored by a handheld device which they use primarily like a GPS to find their way about the warehouse, whose cavernous space is counterintuitively configured according to the logistics of “chaotic storage” (115). Without a location tracking device, the workers would become totally lost. This is because the merchandise they pick up (from shelves and stations stocked by strategically situated robots) is arranged in unpredictable ways understood by the robots, not the employees. “Books are stacked on shelves next to saucepans, televisions share space with children’s toys...Arranging the world from the

perspective of the machine renders it computationally efficient but makes it completely incomprehensible to humans. And moreover, it accelerates their oppression" (116).

Another vast network with which we are seemingly familiar is online video distribution and content sharing both creative and commercial, systems like YouTube that monetize our compulsions and captivate the attention of children and adolescents. In the same way we use Amazon while remaining largely ignorant of its exploitive labor practices, Bridle argues that venues like YouTube contain inner violence and freakish imagistic distortions of familiar cartoons and movies that largely escape the supervisory vigilance of parents and guardians. As with so many forms of social media and streaming content, public trust (a.k.a. consumer gullibility) blinds users to the obscurely manipulative algorithms that drive them and constitute the inner logic or substructures of the attention economy. No few of these algorithms pervert popular viewer content from sources like Disney after being hacked and usurped by predatory agents. "Kids are being traumatized by these videos. They watch their favorite cartoon characters acting out scenes of murder and rape" (228). Bridle continues:

Accompanying the violence are untold levels of exploitation: not of children because they are children, but of children because they are powerless. Automated reward systems like YouTube algorithms necessitate exploitation to sustain their revenue, encoding the worst aspects of rapacious, free-market capitalism. No controls are possible without collapsing the entire system. Exploitation is encoded into the systems we are building, making it harder to see, harder to think and explain, harder to counter and defend against. What makes it disturbing is that this is not a science fictional exploitative future of AI overlords and fully robot workforces in the factories, but exploitation in the playroom, in the living room, in the home and the pocket, being driven by exactly the same computational mechanisms. And humans are degraded on both sides of the equation: both those who, numbed and terrified, watch the videos; and those who, low paid or unpaid, exploited or abused, make them. In between sit mostly automated corporations, taking the profit from both sides. (230)

Rogue algorithms and "bots" are increasingly running amuck not only in YouTube, but all over the internet, and not only as spam and phishing lures. The months preceding the 2020 presidential election saw social media infiltrated with bots conveying propaganda, false news reports, and voter suppression rhetoric, often in the form of dire warnings about the mortal dangers of voting. Due to rogue algorithms, global stock exchanges have experienced precipitous volatility, otherwise known as "flash crashes," that wipe out billions of dollars in equity value within a few minutes. However, not all automated codes that infiltrate systems and operate as bots are rogue. The pervasively male membership that comprised the customer base of the dating web site, Ashley Madison, was unknowingly responding to an artificial population of "Angels," or women customers, who were bots. This web site was eventually hacked, and the identities of the customers exposed (238).

It has always seemed astonishing that so many consumers uncritically adopt a new domestic technology without hesitation, whether a home surveillance system or personal assistant powered by Google Home—and these are often linked. Is it public trust or blind faith in technology that compels the average consumer to configure her home with gadgets and systems that link the refrigerator, phone, intruder alarm system, thermostat for air-conditioning and heating, television, stereo, and home computer? Bridle is genuinely concerned that such a fully networked *oikos* or homestead is vulnerable to hackers. “We are inserting opaque and poorly understood computation at the very bottom of Maslow’s hierarchy of needs—respiration, food, sleep, and homeostasis—at the precise point, that is, where we are most vulnerable” (128-9).

Most people are under the impression that computing power and digital infrastructures are clean, sustainable, non-polluting technologies. It is as if we value Big Data to such an extent that we give the very idea of computer science and its products a free pass. But Bridle shows that such a tolerant attitude is unwarranted. “As of 2015,” he writes, “the world’s data centers, where exabytes of digital information are stored and processed, consumed about 3 per cent of the world’s electricity—and accounted for 2 per cent of total global emissions. This is about the same carbon footprint as the airline industry. The 416.2 terawatt hours of electricity consumed by global data centers in 2015 exceeded that of the whole United Kingdom, at 300 terawatt hours” (63). These numbers cited by Bridle, while staggering, are miniscule compared to projected increases of energy consumption associated with expansion of digital infrastructure worldwide:

In response to vast increases in data storage and computational capacity in the last decade, the amount of energy used by data centers has doubled every four years, and is expected to triple in the next ten years. A study in Japan suggested that by 2030, the power requirements for digital services alone would outstrip the entire nation’s current generation capacity. Even technologies that make explicit claims to radically transform society are not exempt. The cryptocurrency, Bitcoin, which is intended to disrupt hierarchical and centralized financial systems, requires the energy of nine U.S. homes to perform a single transaction; and if its growth continues, by 2019 it will require the annual power of the entire United States to sustain itself. (63)

The kind of information provided by Bridle in passages like the above conflicts with commonly held utopian conceptions of technology and the internet, which share a narrow, domestically sheltered belief that machines are becoming smaller, cuter, and more energy efficient. The average user of a laptop has a vague impression that it requires little power and leaves a minute carbon footprint. This impression, while correct, excludes the computational infrastructure of server farms and data storage installations, such as those provided by the company, Iron Mountain, which require disproportionate amounts of power as Bridle shows. Hence, the average laptop user is

unlikely to perceive a link between his cute, inconspicuous MacBook and global warming, but that link is irreducible unless the laptop is solar powered.

At some point, technologically enabled cultures, institutions, and workforces spellbound by the convenience and speed of their machines will have to sober up and begin to think of them as integral to general ecology. Right now, there is a distinctly willful but illusory separation between the everyday lifeworld, colonized by technologies, and media-generated representations of disruptive and dystopian futures. Those remain curiously distant futures in the minds of technologically enabled and addicted users. But in fact, those futures have already begun to show themselves, albeit in passing glimpses, isolated developments. As Bernard Stiegler argued before his untimely death, the Age of Disruption is here. He did not live to witness Trump's irrational and seditious efforts to overturn the outcome of the 2020 election, supported by fans who were stirred to violence by social media monetizing their rage via platforms spewing "Hate for Profit."

¹ Brian Chen, "It's Time for a Digital Detox." *NY Times Online* (Nov. 25, 2020):

<https://www.nytimes.com/2020/11/25/technology/personaltech/digital-detox.html>.

² James Bridle, *New Dark Age* (London: Verso Books, 2018), p. 43. Subsequent references to Bridle's book will be in bracketed pages numbers within the main text of the review.

³ Howard Gardner, *A Synthesizing Mind: A Memoir from the Creator of Multiple Intelligence Theory* (Cambridge: MIT Press, 2020): xiii.

⁴ Michael Curry, "Holding on to Hope" (Nov. 1, 2020):

<https://www.youtube.com/watch?v=G2gnlRQgyV8>.

⁵ Erich Hörl, "The Technological Condition," *Parrhesia* 22 (2015): 1-22.

⁶ Aaron Benanav, "Automation and the Future of Work, Part 2," in *New Left Review* 120 (Nov/Dec 2019): 131.