

## Langdon Winner, *Technological Somnambulism*

Langdon Winner is a political theorist and professor at Rensselaer Polytechnic Institute who writes about a range of social and political issues that surround technological change. In addition to numerous published essays, he has written two books, *Autonomous Technology* (1978) and *The Whale and the Reactor: A Search for Limits in the Age of High Technology* (1986), which have become central texts to modern-day technology analysts. He has been praised by the *Wall Street Journal* as “the leading academic on the politics of technology.” As Winner has argued, “I regularly praise technologies that reflect reasonable practices of democracy, justice, ecological sustainability, and human dignity. Unfortunately, a great many of the technical devices and systems that surround us are designed, built, and deployed in flagrant disregard of humane principles.” This essay, published in *The Whale and the Reactor*, introduces two prevailing theories or viewpoints about technology: technological determinism and technological somnambulism (sleepwalking).

### ► Mapping Your Reading

In the following essay, Winner describes the most common assumptions people have about technology and argues that there are specific questions we should ask when we investigate the impact of technology on everyday life. As you read, pay attention to Winner’s use of concrete examples to explain and support his argument, and underline those that are most compelling. Why does Winner think it is important for people to overcome the assumption that technologies exist simply because they are useful? What are the moral negotiations that accompany technological change?

Why is it that the philosophy of technology has never really gotten under way? Why has a culture so firmly based upon countless sophisticated instruments, techniques, and systems remained so steadfast in its reluctance to examine its own foundations? Much of the answer can be found in the astonishing hold the idea of “progress” has exercised on social thought during the industrial age. It is usually taken for granted that the only reliable sources for improving the human condition stem from new machines, techniques, and chemicals. Even the recurring environmental and social ills that have accompanied technological advancement have rarely dented this faith. It is still a prerequisite that the person running for public office swear his or her unflinching confidence in a positive link between technical development and human well-being and affirm that the next wave of innovations will surely be our salvation.

There is, however, another reason why the philosophy of technology has never gathered much steam. According to conventional views, the human relationship to technical things is too obvious to merit serious reflection: The less complicated times divides the range of possible concerns about technology into two basic categories: making and use. In the first of these our attention is drawn to the matter of "how things work" and of "making things work." We tend to think that this is a fascination of certain people in certain occupations, but not for anyone else. "How things work" is the domain of inventors, technicians, engineers, repairmen, and the like who prepare artificial aids to human activity and keep them in good working order. Those not directly involved in the various spheres of "making" are thought to have little interest in or need to know about the materials, principles, or procedures found in those spheres.

What the others do care about, however, are tools and uses. This is understood to be a straightforward matter. Once things have been made, we interact with them on occasion to achieve specific purposes. One picks up a tool, uses it, and puts it down. One picks up a telephone, talks on it, and then does not use it for a time. A person gets on an airplane, flies from point A to point B, and then gets off. The proper interpretation of the meaning of technology in the mode of use seems to be nothing more complicated than an occasional, limited, and nonproblematic interaction.

The language of the notion of "use" also includes standard terms that enable us to interpret technologies in a range of moral contexts. Tools can be "used well or poorly" and for "good or bad purposes"; I can use my knife to slice a loaf of bread or to stab the next person [who] walks by. Because technological objects and processes have a promiscuous utility, they are taken to be fundamentally neutral as regards their moral standing.

The conventional idea of what technology is and what it means, an idea powerfully reinforced by familiar terms used in everyday language, needs to be overcome if a critical philosophy of technology is to move ahead. The crucial weakness of the conventional idea is that it disregards the many ways in which technologies provide structure for human activity. Since, according to accepted wisdom, patterns that take shape in the sphere of "making" are of interest to practitioners alone, and since the very essence of "use" is its occasional, innocuous, nonstructuring occurrence, any further questioning seems irrelevant.

If the experience of modern society shows us anything, however, it is that technologies are not merely aids to human activity, but also powerful forces acting to reshape that activity and its meaning. The introduction of a robot to an industrial workplace not only increases productivity, but often radically changes the process of production, redefining what "work" means in that setting. When a sophisticated new technique or instrument is adopted in medical practice, it transforms not only what doctors do, but also the ways people think

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about health, sickness, and medical care. Widespread alterations of this kind in techniques of communication, transportation, manufacturing, agriculture, and the like are largely what distinguishes our times from early periods of human history. The kinds of things we are apt to see as "mere" technological entities become much more interesting and problematic if we begin to observe how broadly they are involved in conditions of social and moral life.

It is true that recurring patterns of life's activity (whatever their origins) tend to become unconscious processes taken for granted. Thus, we do not pause to reflect upon how we speak a language as we are doing so or the motions we go through in taking a shower. There is, however, one point at which we may become aware of a pattern taking shape—the very first time we encounter it. An opportunity of that sort occurred several years ago at the conclusion of a class I was teaching. A student came to my office on the day term papers were due and told me his essay would be late. "It crashed this morning," he explained. I immediately interpreted this as a "crash" of the conceptual variety, a flimsy array of arguments and observations that eventually collapses under the weight of its own ponderous absurdity. Indeed, some of my own papers have "crashed" in exactly that manner. But this was not the kind of mishap that had befallen this particular fellow. He went on to explain that his paper had been composed on a computer terminal and that it had been stored in a time-sharing minicomputer. It sometimes happens that the machine "goes down" or "crashes," making everything that happens in and around it stop until the computer can be "brought up," that is, restored to full functioning.

As I listened to the student's explanation, I realized that he was telling me about the facts of a particular form of activity in modern life in which he and others similarly situated were already involved and that I had better get ready for. I remembered J. L. Austin's little essay "A Plea for Excuses" and noticed that the student and I were negotiating one of the boundaries of contemporary moral life—where and how one gives and accepts an excuse in a particular technology-mediated situation. He was, in effect, asking me to recognize a new world of parts and pieces and to acknowledge appropriate practices and expectations that hold in that world. From then on, a knowledge of this situation would be included in my understanding of not only "how things work" in that generation of computers, but also how we do things as a consequence, including which rules to follow when the machines break down. Shortly thereafter I got used to computers crashing, disrupting hotel reservations, banking, and other everyday transactions; eventually, my own papers began crashing in this new way.

Some of the moral negotiations that accompany technological change eventually become matters of law. In recent times, for example, a number of activities that employ computers as their operating medium have been legally defined as "crimes." Is unauthorized access to a computerized data base a criminal offense? Given the fact that electronic information is in the strictest sense intangible, under what conditions is it "property" subject to theft? The law has had to stretch and reorient its traditional categories to encompass

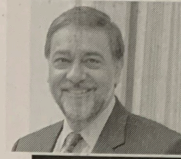
such problems, creating whole new classes of offenses and offenders.

The ways in which technical devices tend to engender distinctive worlds of their own can be seen in a more familiar case. Picture two men traveling in the same direction along a street on a peaceful, sunny day, one of them on foot and the other driving an automobile. The pedestrian has a certain flexibility of movement: he can pause to look in a shop window, speak to passersby, and reach out to pick a flower from a sidewalk garden. The driver, although he has the potential to move much faster, is constrained by the enclosed space of the automobile, the physical dimensions of the highway, and the rules of the road. His realm is spatially structured by his intended destination, by a periphery of more-or-less irrelevant objects (scenes for occasional side glances), and by more important objects of various kinds—moving and parked cars, bicycles, pedestrians, street signs, etc., that stand in his way. Since the first rule of good driving is to avoid hitting things, the immediate environment of the motorist becomes a field of obstacles.

Imagine a situation in which the two persons are next-door neighbors. The man in the automobile observes his friend strolling along the street and wishes to say hello. He slows down, honks his horn, rolls down the window, sticks out his head, and shouts across the street. More likely than not the pedestrian will be startled or annoyed by the sound of the horn. He looks around to see what's the matter and tries to recognize who can be yelling at him across the way. "Can you come to dinner Saturday night?" the driver calls out over the street noise. "What?" the pedestrian replies, straining to understand. At that moment another car to the rear begins honking to break up the temporary traffic jam. Unable to say anything more, the driver moves on.

What we see here is an automobile collision of sorts, although not one that causes bodily injury. It is a collision between the world of the driver and that of the pedestrian. The attempt to extend a greeting and invitation, ordinarily a simple gesture, is complicated by the presence of a technological device and its standard operating conditions. The communication between the two men is shaped by an incompatibility of the form of locomotion known as walking and a much newer one, automobile driving. In cities such as Los Angeles, where the physical landscape and prevailing social habits assume everyone

## VIVEK WADHWA ... on Our Lagging Laws



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Laws forbid lenders from discriminating on the basis of race, gender, and sexuality. Yet lenders can refuse to give a loan to people if their Facebook friends have bad payment histories, if their work histories on LinkedIn don't match their bios on Facebook, or if a computer algorithm judges them to be socially undesirable.

Such regulatory gaps exist because laws haven't kept up with technology. And the gaps are getting wider.

Technology now touches practically everyone, everywhere. Changes of a magnitude that once took centuries now happen in decades, sometimes in years. Not long ago, Facebook was a dorm-room dating site, mobile phones were for the ultrarich, drones were multimillion-dollar war machines, and supercomputers were for secret government research. Today, hobbyists build drones,

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and poor villagers in India access Facebook accounts on smartphones more powerful than the Cray 2 super-computer, which in 1985 cost \$17.5 million and weighed 2,500 kilograms.

We haven't come to grips with what is ethical in relation to technologies such as social media, let alone with what the laws should be. Consider the question of privacy. There is a public outcry today about surveillance by the National Security Agency, but the breadth of that surveillance pales in comparison with the data that Google, Apple, Facebook, and legions of app developers are collecting. Our smartphones track our movements and habits. Our Web searches reveal our thoughts. Where do we draw the line on what is legal — and ethical?

The Genetic Information Nondiscrimination Act of 2008 prohibits the use of genetic information in health insurance and employment. But it provides no protection from discrimination in long-term-care, disability, and life insurance. There are no laws to stop companies from using

drives a car, the simple act of walking can be cause for alarm. The U.S. Supreme Court decided one case involving a young man who enjoyed taking long walks late at night through the streets of San Diego and was repeatedly arrested by police as a suspicious character. The Court decided in favor of the pedestrian, noting that he had not been engaged in burglary or any other illegal act. Merely traveling by foot is not yet a crime.

Knowing how automobiles are made, how they operate, and how they are used and knowing about traffic laws and urban transportation policies does little to help us understand how automobiles affect the texture of modern life. In such cases a strictly instrumental/functional understanding fails us badly. What is needed is an interpretation of the ways, both obvious and subtle, in which everyday life is transformed by the mediating role of technical devices. In hindsight the situation is clear to everyone. Individual habits, perceptions, concepts of self, ideas of space and time, social relationships, and moral and political boundaries have all been powerfully restructured in the course of modern technological development. What is fascinating about this process is that societies involved in it have quickly altered some of the fundamental terms of human life without appearing to do so. Vast transformations in the structure of our common world have been undertaken with little attention to what those alterations mean. Judgments about technology have been made on narrow grounds, paying attention to such matters as whether a new device serves a particular need, performs more efficiently than its predecessor, makes a profit, or provides a convenient service. Only later does the broader significance of the choice become clear, typically as a series of surprising "side effects" or "secondary consequences." But it seems characteristic of our culture's involvement with technology that we are seldom inclined to examine, discuss, or judge pending innovations with broad, keen awareness of what those changes mean. In the technical realm we repeatedly enter into a series of social contracts, the terms of which are revealed only after the signing.

It may seem that the view I am suggesting is that of technological determinism: the idea that technological innovation is the basic cause of changes in society and that human beings have little choice other than to

sit back and watch this ineluctable process unfold. But the concept of determinism is much too strong, far too sweeping in its implications to provide an adequate theory. It does little justice to the genuine choices that arise, in both principle and practice, in the course of technical and social transformation. Being saddled with it is like attempting to describe all instances of sexual intercourse based only on the concept of rape. A more revealing notion, in my view, is that of technological somnambulism. For the interesting puzzle in our times is that we so willingly sleepwalk through the process of reconstituting the conditions of human existence.

### ▶ Analyzing the Text

1. **Interrogating Assumptions.** As Winner sees it, what common attitudes get in the way of attempts to understand the impact of technologies on everyday life? How does Winner address the assumption that technologies are neutral (see this chapter's introduction, p. 418)?
2. According to Winner, why is it a problem that people are sleepwalking as "the conditions of human existence" are increasingly transformed by technologies?
3. What distinguishes "technological determinism" from "technological somnambulism"? Both try to explain how technologies redefine human activity and behavior. Although the theory of technological determinism may make people uncomfortable, it is not difficult to identify examples—as Winner and other authors in this chapter do—that support the view that technologies have redefined a range of human activities in ways beyond our control. What examples can you think of?

### ▶ Writing about Cultural Practices

4. Perhaps no other technology is surrounded by more grand claims about its promise than the computer, including laptop and desktop models, of course, as well as tablets and phones. For example, the mere presence of computers in schools is often taken as a sign of educational success. For this assignment, follow Winner's example by deconstructing the myths surrounding popular representations of computers in the media. To begin, collect examples of the portrayal of the computer in commercials, television shows, or movies. Pay attention to how computers or a

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genomic data in the same way that lending companies and employers use social-media data. We will have similar debates about self-driving cars, drones, and robots.

As a society, we need to be mindful that powerful innovation now occurs too quickly for existing ethical frameworks and laws. This means questioning, rethinking, and reframing those values, as a culture, at an accelerated speed. And it means creating a legal system that can keep pace with a new era of techno-socioeconomic transformation.

—From *MIT Technology Review*, [technologyreview.com](http://technologyreview.com), 2014.

particular app is represented. Choose the example you find most interesting and draft a critical analysis. As you draft, consider the following questions:

- How are computers presented in your example? How are the computers meant to be used? By whom? What is the computer's relationship to the other objects or people that surround it in this example?
- Who is the intended audience for your example? What do the producers seem to assume about this audience?
- How does this presentation of computers reflect or reinforce specific cultural assumptions or attitudes about technology?
- In his essay, Winner describes some of the moral negotiations that accompany the use of computers (see his discussion of computer crashes and computer crime). What kinds of moral negotiations accompany the use of computers in your media example? How are they resolved?