“You Mean My Whole Fallacy Is Wrong”:
On Technological Determinism

Academic Demonologies

In Woody Allen’s romantic comedy Annie Hall (1977), the world’s most famous technological determinist had a brief cameo that in some circles is as well-known as the movie itself. Woody Allen, waiting with Diane Keaton in a slow-moving movie ticket line, pulls Marshall McLuhan from the woodwork to rebuke the blowhard in front of them, who is pontificating to his female companion about McLuhan’s ideas. McLuhan, as it happened, was not an easy actor to work with: even when playing a parody of himself, a role he had been practicing full-time for years, he couldn’t remember his lines, and when he could remember them, he couldn’t deliver them.1 In the final take (after more than fifteen tries), McLuhan tells the mansplainer, “I heard what you were saying. You, you know nothing of my work. You mean my whole fallacy is wrong. How you ever got to teach a course in anything is totally amazing.” In the film, the ability to call down ex cathedra authorities at will to silence annoying know-it-alls is treated as the ultimate in wish fulfillment as Allen says to the camera, “Boy, if life were only like this!” Rather than a knockout punch, however, McLuhan tells the man off with something that sounds like a Zen koan, an obscure private joke, or a Groucho Marx non sequitur. There is more going on here than a simple triumph over someone else’s intellectual error. Isn’t a fallacy always self-evidently wrong?

That a fallacy might not necessarily be wrong is the question I take up in this essay. Whatever technological determinism is, it is one of a family of pejoratives by which academics reprove their fellows for single-minded devotion.

Abstract This essay offers both a genealogy of the concept of technological determinism and a metacritique of the ways academic accusations of fallaciousness risk stopping difficult but essential kinds of inquiry. To call someone a technological determinist is to claim all the moral force on your side without answering the question of what we are to do with these devices that infest our lives.
(or monomaniacal fanaticism) to their pet cause. At least since “sophist” was launched as a slur in ancient Greece, it has been a regular sport to contrive doctrines that nobody believes and attribute them to one’s enemies. Terms ending with -ism serve this purpose particularly well. As Robert Proctor notes in an amusing and amply documented survey of academic nomenclature, “‘Bias’ and ‘distortion’ are perennial terms of derision from the center, and the authors of such slants are often accused of having fallen into the grip of some blinding ‘-ism.’” Often these -isms, he continues, “are things no one will openly claim to support: terrorism, dogmatism, nihilism, and so on.” (Racism and sexism are even better examples.) Terms ending with -ism, such as economism, fetishism, formalism, physicalism, positivism, and scientism, often stand for “zealotry or imprudence in the realm of method,” with reductionism standing for the whole lot. Corresponding nouns ending with -ist designate those people accused of harboring such doctrines—reductionist, fetishist, formalist—though -ist is a tricky particle. Artist, economist, psychologist, and above all, scientist have positive valences; artistic is a term of praise, but scientistic suggests being in the grip of an ideology.² (It might be bad to be a positivist, but Trotskyist is strongly preferred to Trotskyite, it would be a big job to fully describe the whimsical behavior of the -ism clan, tasked as it is with policing ultrafine differences.) Pathologies such as logocentrism, phallogocentrism, and heteronormativity are often diagnosed in people who do not realize they are carriers.

Technological determinism belongs to this family of conceptual maladies thought unknown to their hosts but discernible by a savvy observer. It is one of a long line and large lexicon of academic insults and prohibitions. As old as academic inquiry is the conviction of the blindness of one’s fellow inquirers. From listening to the ways scholars talk about each other, you would not think they were a collection of unusually brainy people but rather a tribe uniquely susceptible to folly and stupidity. The cataloging of fallacies has been motivated by a desire to regulate (or mock) the thinking of the learned as much as of the crowd. The academy has been fertile soil for satirists from the ancient comic playwrights to Erasmus and Rabelais, from Swift and the Encyclopédie to Nietzsche to the postwar campus novel. Whatever else Renaissance humanism was, it was a critique of scholarly vices, and Erasmus’s Praise of Folly is, among other things, a compendium of still relevant witticisms about erudite errors.³ There are as many fallacies as chess openings, and the names of both index exotic, often long-forgotten historical situations. We shouldn’t miss the element of satire and parody in such cartoonish names as the red herring, bandwagon, card-stacking, and cherry-picking fallacies. “The Texas sharpshooter fallacy” is drawing the target after you have taken the shots. The “Barnum effect” describes the mistake of taking a trivially general statement as uniquely significant (as in fortune
cookies or astrology readings). The study of fallacies gives you a comic, sometimes absurdist glance at the varieties of cognitive tomfoolery.

One reason why academic life is the native soil for the detection of fallacies is the great profit that can be wrung from strategic blindness. Looking at the world’s complexity through a single variable—air, fire, water, God, ideas, money, sex, genes, media—can be immensely illuminating. (Granting agencies smile on new “paradigms.”) A key move in the repertoire of academic truth games is noise-reduction. John Stuart Mill once noted of “one-eyed men” that “almost all rich veins of original and striking speculation have been opened by systematic half-thinkers.” A less single-minded Marx or Freud would not have been Marx or Freud. Intellectuals can be richly rewarded for their cultivated contortions.

But one man’s insight is another man’s blindness. The one-eyed gambit invites the counterattack of showing what has gone unseen, especially as prophetic vision hardens into priestly formula. Nothing quite whets the academic appetite like the opportunity to prove what dullards one’s fellows are, and, for good and ill, there never seems to be any shortage of material. (We all know people who think they can score points during Q&A sessions by asking why their favorite topic was not “mentioned.” Someone should invent a fallacy to name that practice.) At some point every scholar has felt the itch to clear the ground of previous conceptions and ill-founded methods; this is partly what “literature review” sections are supposed to do. (The history of the study of logic is littered with the remains of other people’s attempted cleanup jobs.) Scholars love to upbraid each other for being trapped by the spell of some nefarious influence. How great the pleasure in showing the folly of someone’s -istic ways! The annals of academic lore are full of tales of definitive takedowns and legendary mic drops, and social media platforms such as Facebook provide only the most recent germ culture for the viral spread of delicious exposés of the ignorant (as often political as academic). This is one reason McLuhan’s Annie Hall cameo continues to have such resonance: it is the archetype of a decisive unmasking of another scholar’s fraudulence or ignorance.

But it is also a classic fallacy: the appeal to authority. Who says McLuhan is the best explicator of his own ideas? As he liked to quip: “My work is very difficult: I don’t pretend to understand it myself.” You actually get a better sense of what McLuhan wrote from the blowhard, however charmingly presented, than from McLuhan. The disagreeable truth is that what the man is doing isn’t really that awful or that unusual: it is standard academic behavior in the classroom at least, if not the movie line. Laughing at someone teaching a course on “TV, media, and culture” is, for many of us, not to recognize ourselves in the mirror. The fact that so many academics love the Annie Hall put-down is one more piece of evidence showing our vulnerability to fallacious
modes of persuasion. Why should we delight in the silencing of a scholar by the gnomic utterances of a made-for-TV magus? Since when is silencing an academic value? And by someone who doesn’t really make any sense?

Silencing is one thing that the charge of technological determinism, like many other so-called fallacies, does. Fallacies need to be understood within economies and ecologies of academic exchange. They are not simply logical missteps. To accuse another of a fallacy is a speech act, a communicative transaction. The real danger of technological determinism may be its labeling as a fallacy. The accusation, writes Geoffrey Winthrop-Young, “frequently contains a whiff of moral indignation. To label someone a technodeterminist is a bit like saying that he enjoys strangling cute puppies; the depraved wickedness of the action renders further discussion unnecessary.”

The threat of technological determinism, according to Wolf Kittler, “goes around like a curse frightening students.” The charge can conjure up a kind of instant consensus about what right-minded people would obviously avoid. The charge of technological determinism partakes of a kind of “filter bubble” logic of unexamined agreement that it’s either machines or people. Jill Lepore recently put it with some ferocity: “It’s a pernicious fallacy. To believe that change is driven by technology, when technology is driven by humans, renders force and power invisible.”

There are undeniably many vices and exaggerations around the concept of technology. But my overarching concern here is not to block the road of inquiry. (No-go zones often have the richest soil.) In a moment when the meaning of technics is indisputably one of the most essential questions facing our species, do we really want to make it an intellectual misdemeanor to ask big questions about “technology” and its historical role, however ill-defined the category is? What kinds of inquiry snap shut if we let the specter of technological determinism intimidate us? The abuse does not ruin the use. The question is particularly pointed for my home field of media studies, whose task is to show that form, delivery, and control, as well as storage, transmission, and processing, all matter profoundly. If explanations attentive to the shaping role of technological mediation are ruled out, the raison d’être of the field is jeopardized. It is so easy to sit at our Intel-powered computers and type our latest critique of technological determinism into Microsoft Word files while Googling facts and checking quotes online. We are so busy batting away the gnats of scholarly scruples to notice that we have swallowed a camel.

**Intellectual Origins of the Concept**

Compared to other fallacies, technological determinism has a relatively recent birth. Since its origins in the 1920s, the ongoing odyssey of the
concept was one of many battles with the ghost of Marx in the social sciences, especially with his question about how the means of production interact with relations of production.

The key figure was the cranky and brilliant American economic sociologist Thorstein Veblen (1857–1929). In nineteenth-century English, “technology” referred to the study of mechanical arts rather than to the full array of technical devices or systems. It meant a field of learning, not an array of gadgets or systems. Veblen adapted the German concept of *Technik* from historical sociologists such as Werner Sombart. *Technik*’s semantic range is ambiguous, meaning something between craft and skill on the one hand and machine and system on the other. It can refer to practices (techniques) and to gadgets (technologies) equally. Veblen wanted to import this semantic richness in his account of the role of “the machine technology” in modern economics and culture (and indeed, such richness is the reason for the revival in English of the term *technics*). He saw modern technology as something very different from age-old handicraft, which had little need for theoretically tested knowledge. *Technology* was steered by science; it was both a body of knowledge and a set of artifacts with wide psychic and cultural ramifications. And he made technology part of the economic infrastructure. Like many others, Veblen both built on and criticized Marx, suggesting that the engine of social change was not solely economic production but also the scientific and technological know-how that guided and accelerated it. Engineers more than the proletariat were his revolutionary vanguard party. Technology for Veblen both shaped and was shaped by social forces; it was determined and determining.

The fear of technological determinism was born twins with the modern notion of technology. The first text to use the term in a sustained way was by the Columbia sociologist Harry Elmer Barnes, a 1925 book called *The New History and the Social Studies*. As the book’s title suggests, Barnes’s task was to assess the significance of the economic interpretation of history by progressive historians such as Charles Beard, James Harvey Robinson, and E. R. A. Seligmann. Even more significantly, the chapter in which “technological determinism” appears was first presented at the 1919 meeting of the American Historical Association that launched the history of science as a discipline. Here is his first use: “We are not, of course, arguing here for a theory of scientific and technological determinism, such as Marx contended for. This would be an oversimplification of the historical process” (395). Note the “of course,” a telltale sign of a sophisticated inhibition. Though displays of conspicuous scrupulousness, as Veblen might have put it, are standard behavior for *homo academicus*, they seem inscribed with peculiar tenacity into discussions that take distance from technological determinism. Barnes sought to develop “a tentative but workable theory of historical causation” (399).
the beginning of science and technology studies, technological determinism has been a practice player, a member of the gray team, to be vanquished by one’s own more subtle analyses. In Barnes, technological determinism is a kind of founding negation.

The consolidation of “technological determinism” as a term owes even more to the Scots-American sociologist Robert MacIver. MacIver, though now largely forgotten, was very influential in his time as a leading social theorist and builder of the Columbia Department of Sociology, eventually assembling a triumvirate of formidable Roberts—himself, Robert Lynd, and Robert Merton—and hosting the Frankfurt School at its first American stop.11 (He also taught from 1915 to 1927 at the University of Toronto, where he was the colleague of Harold Innis, later famous as a media historian unafraid of big claims.) MacIver’s influential textbook, *Society: Its Structure and Changes* (1932), went through multiple editions and made technological determinism part of the working vocabulary of the social theorist.12 His discussion starts with the question that has always attended technological determinism: how to assess the degree of causal influence in historical change. The “precise nature and limits of that influence are exceedingly hard to diagnose” (235). There are reasons to be tempted by “deterministic theories” but “the port we sail to remains a cultural choice” (236). Comparative evidence about the diverse effects of new technologies deflates monocausal explanations. “The varieties of cultural expression within the more advanced civilization constitute in fact a disproof of the extreme doctrines of economic and technological determinism” (236). Here we hit pay dirt: the defense of popular choice, the disdain of “extremity,” the gesture to cultural diversity and contingency, and the close tie between economy and technology. Many gestures around the doctrine seem to have been born fully fledged.

Later in the text, MacIver is more systematic, nominating Veblen as the chief representative of technological determinism alongside Marx as the chief representative of economic determinism. “Thorstein Veblen,” he bluntly asserts, “can quite strictly be called a technological determinist” (493). Here we have to watch the intellectual moves closely. MacIver administers many of the same criticisms still leveled against any would-be technodeterminist: that within common environments subgroups vary significantly; societies at equivalent technical levels accentuate culture differently; “the stuff of ideas and creeds and interests” is relatively independent from “material contrivances”; and any social order has critics and rebels (498–99). Veblen’s mistake, according to MacIver, was to overemphasize one historical factor at the expense of others. For MacIver, Veblen’s notion of determinism is pretty much the same as its current meaning, the overestimation of materialist causal forces. (*Determinism* was wittily defined by Northrop Frye: “The fallacy of what in history is called determinism, where
a scholar with a special interest in geography or economics expresses that interest by the rhetorical device of putting his favorite subject into a causal relationship with whatever interests him less." But here "technological" is not quite what we typically mean: MacIver’s Veblen sees “habitation to changing technique” as the driver of social change (498), locating technology in the nexus between humans and devices, in disciplinary webs of technical habit and practice. We are still far from the large-scale “autonomous technology” (hydroelectric dams, nuclear weapons, mass media) that later post-war critics would decry.

By the 1940s and 50s, the term is in place. “No narrow technological determinism is intended,” warns a 1941 sociologist discussing trends in technology. A 1947 article in Commentary puts “scientific-technological determinism” in the unsavory company of other creeping forms of totalitarianism; the danger is forgetting “that not science, but man in history (which includes science) is the source of all values.” Here the critique of technological determinism is about more than Veblen’s Marx—it is a defense of human agency against overweening science (but not yet machines). In the 1950s, sociologists Hans Gerth and C. Wright Mills, in Character and Social Structure (1953), wanted to avoid “the risk of unwarranted historical generalization” and noted that innovation is not a constant but is quite erratic in human history. “There is no automatic causal relation between the technological sphere and any institutional order” (391). “Sometimes skills lag; sometimes technologies do” (395). They wondered if technology had “causal autonomy. Does it not exercise a long-run causal force, even if unevenly, upon human institutions everywhere, at all times? These are the rhetorical questions of ‘technological determinism,’ perhaps nowadays the leading theory of social change, and there is something to them” (395). No names back this “leading theory”—which, unusually, is here mildly endorsed—but Veblen is everywhere. In the postwar social sciences the question was to what degree it is legitimate to attribute causal force to technology in history.

For University of Michigan anthropologist Leslie A. White, it was totally legitimate. In The Science of Culture (1949), he declared: “The technological factor is . . . the determinant for the culture system as a whole.” In The Evolution of Culture (1959) he embraced “technological determinism” (also calling it “technological determination”). For White, all cultural systems had four elements—technological, sociological, ideological, and attitudinal—but technology was primus inter pares. Technology consisted of “material, mechanical, biophysical, and biochemical means” (19) or “tools and processes of subsistence” (20). As a Marxist, White wanted to expand the classic notion of the economic base. “Our theory of technological determinism . . . states merely that of the various classes of forces within a cultural system, technology is the basis and the motive power of the system. It does not assert that it is
omnipotent, independent of conditions and subject to no limitation” (28). His conceptual inflation is checked, as usual, by a proper display of caution. Clearly, this is not the same notion in circulation today; it is closer to Veblen’s friendly amendment to Marxist theories of economic control.19

Consolidation of the Concept in the 1960s

By the 1960s, technological determinism was coming to self-consciousness as a doctrine. One key was economist Robert Heilbroner’s essay, “Do Machines Make History?” (1967).20 As always, Marxist economic determinism was the starting point. Heilbroner considers Marx’s aphorism that the hand mill gives you the feudal lord and the water mill the industrial capitalist—certainly the most important proof text in the history of the concept.21 Heilbroner innovates with the notion of “soft determinism,” borrowing the term without citation from William James.22 He illustrates it with statements such as: “Even where technology seems unquestionably to play the critical role, an independent ‘social’ element unavoidably enters the scene in the design of the technology” (342). “The direction of technological advance is partially the result of social policy” (343). This was good news for Heilbroner, a socialist, since it meant that the steering of society was possible. At best, technology played a mediating role in socioeconomic change. For him, technological determinism was more a historical condition than a semantic residue: the apparently “automatic” quality of technology was historically tied to a particular mix of science-fueled technical invention and a market economy lacking social oversight. “Technological determinism is thus particularly a problem of a certain historic epoch . . . in which the forces of technical change have been unleashed, but when the agencies for the control or guidance of technology are still rudimentary” (345). This age he calls “that of high capitalism and low socialism.” Technological determinism was not simply an idea but also a political-economic-technical ensemble.

The key turn in the 1960s for our story was McLuhan’s meteoric rise to fame. Though it is fruitless to try to find a single origin for a coinage so viral and so apt, technological determinism starts to bend in the mid 1960s. McLuhan rather than Veblen became its epitome. It was less a term for sectarian squabbles in historical materialism than a global term for the fallacy of giving technology too much weight in societal prognostication. We can see, rather precisely, how the shift took place in an early review of McLuhan’s Understanding Media (1964) by the Canadian-American sociologist Thelma McCormack, who was the first of many to call McLuhan a technological determinist. While studying sociology at Columbia in the early 1940s she
took classes from MacIver and read his textbook, so the semantic pivot point is quite clear. She writes: “Veblen, like McLuhan, underestimated our capacity to use technology without being influenced by it. Technological determinism, like all forms of determinism, is never able to cope with discrepancies.” Certainly McLuhan put technology in the driver’s seat of social change as much as Veblen ever did, though without Veblen’s economic analysis. McCormack called McLuhan “contrived, autodidactic, amusing, occasionally right, and occasionally dangerous.” McLuhan unquestionably used scholarship as pastiche and historical claims as “probes.” He had a cubist account of causation, an overly homogeneous conception of eras, and a lack of interest both in the nuances of academic argument and in the doings of ordinary people. He was flamboyant and explicitly saw himself in the tradition of the sophists, though with a clandestine mission as a religious trickster. Whatever scholarly sins McLuhan committed could also be understood as the sins of technological determinism. With McLuhan as the poster child for technological determinism, the term became a net to catch all kinds of fish, only some of which were directly related to a monocausal view of technology. Here is the fallacious syllogism: McLuhan was a technological determinist; he was also a lousy scholar; therefore big generalizations about technology are bad scholarship. McLuhan was a ticklish problem for the field of media studies: he put the concept of media on the map but was also an embarrassment. He was the cornerstone rejected by the builders.

Some of that ire is clear in *Television: Technology and Cultural Form* (1974) by British cultural theorist Raymond Williams, who consolidated the critique of technological determinism with McLuhan as the epitome. “Technological determinism,” as it was called, “at least to its opponents” (good catch by Williams) was “an immensely powerful and now largely orthodox view of the nature of social change…. The effects of the technologies, whether direct or indirect, foreseen or unforeseen, are as it were the rest of history” (13). McLuhan, who was never a Marxist of any sort but rather a Catholic conservative, rarely took a more savage beating than in *Television* (and McLuhan took a lot of beatings, most of which he blithely ignored). McLuhan’s apparently “sophisticated technological determinism” actually “ratifies the society and culture we now have.” He excluded “social, cultural, psychological, and moral questioning” and offered “a direct and functioning ideology.” “In his work … the media were never really seen as practices.” He “desocialized” how media operate (127). His “technical abstractions … have the effect of cancelling all attention to existing and developing (and already challenged) communications institutions…. We can forget ordinary political and cultural argument and let the technology run itself” (128). McLuhan was, in other words, a sellout, idealist, reactionary, formalist, antihistoricist, and foe of social criticism. The puppy-strangler comes into focus.
Williams’s fellow British Marxist E. P. Thompson raised the stakes even higher in the late 1970s and early 1980s. A brilliant social historian and leading activist for nuclear disarmament, Thompson saw technologically driven understandings of the arms race as forms of resignation. He sought to demystify any thinking about nuclear weapons that regarded them as beyond the control of human actors. “As for the bomb, that is a Thing, and a Thing cannot be a historical actor.” (There could be no more clear contrast to Bruno Latour’s cheerful slogan later that “things are people too.”) “Arguments founded upon weaponry and strategy are enclosed within a determinism whose outcome must be war” (“END of the line,” 27). Thompson always looked for “the human agent of our doom” (29) behind the systems and processes, a skill he had perfected as a social historian. He deserves quoting at length: To think of the arms race as inevitable was to follow an inexorable technological determinism of a kind for which historians (or, I should say, historians whom I consider to be reputable) do not find any historical precedent. That is, some vulgar practitioners of determinism apart, historians do not find that technology (or inventors), unaided, created industrialization or capitalism or imperialism. Nor can technology creep, unaided, bring us to extermination. Historians find, rather, a collocation of mutually-supportive forces—political, ideological, institutional, economic—which give rise to process, or to the event. And each of these forces exists only within the medium of human agency. (29)

Never was the critique of technological determinism put with greater urgency. The choice was clear: agency or extermination.

Back across the Atlantic, big things were also happening in the 1970s. Thomas Misa notes the key year of 1977, which saw the publication of Alfred Chandler’s *The Visible Hand*, David Noble’s *America by Design*, and Langdon Winner’s *Autonomous Technology*, the first two by historians and the third by a political theorist. Winner is important as a qualified defender of technological determinism, but here again we have to watch the moves carefully. His central point is that there is “something wrong in the way we view technology and man’s relationship to it” (5). He builds on Jacques Ellul’s view that “la technique and our technology both point to a vast, diverse, ubiquitous totality that stands at the center of modern culture” (9). He knows that “technology” is uncontainable semantically, but does not manage to be very precise himself, opportunistically using the term’s gusts to fill his billowing sails. “I am not a lexicographer and do not wish to legislate usage” (12). After calling technological determinism “a swamp of intellectual muddles” (74), Winner nicely states the argument of the present essay: “The tendency to dismiss the entire issue after scoring a single moral or methodological point places a taboo on important questions that even a cursory glance at modern history suggests are among those most crucial to an understanding of the age” (77). Like almost
everyone else in this story, he works his way through Marx, pointing out that conditioning is not the same as determining (83). Here is another footnote to Sombart, who contrasted “bedingen” (to condition) from “bestimmen” (to destine or determine) in the writing of technical history.\footnote{32}

Williams, Thompson, and Winner all sought to tack between social and technical determination, and this was the major debate around technological determinism in the 1980s and 1990s. Some invested major political pathos in its critique. Historian of technology Wiebe Bijker, one of the leaders of SCOT (the social construction of technology), a field whose raison d’être was to oppose technological determinism, saw nothing less at stake than democracy—“participatory decisionmaking”—in our ability to recognize “interpretative flexibility” and not “fall prey to determinist thinking.”\footnote{33} Feminist historians likewise called for study of the ways that gender relations were as important as technologies in the implementation of household appliances and their accompanying ideologies. Women, as Lana Rakow shows, helped convert the telephone from a device designed for terse business communications into one used for sociability.\footnote{34} Much as for Williams or Thompson, modes of analysis that ignored popular push-back could be complicit with modes of domination. Ordinary people were not dupes, and scholars who thought of technological design as a strong force unwittingly joined the forces of oppression. I am delighted by microhistories: bring them on! We need more forgotten voices. But the tendency of some scholars to dissolve devices into practices led Misa wryly to ask: “Micro studies, in the attempt to demonstrate the socially constructed nature of technology, often omit comment on the intriguing question of whether technology has any influence on anything.”\footnote{35}

Bruno Latour answered back with a comic set piece on how long he could avoid putting on his seat belt. The alarm was so annoying that however strong his will, he would always cave and buckle up. His conclusion: the design of technical objects has a determinative force that is independent of the agency or ingenuity of the user.\footnote{36} (Here again: you can get fame in academe for saying things that most people already know but your colleagues have forgotten.) Even more wickedly, Latour pondered the NRA slogan that “guns don’t kill people, people do,” showing the grotesque ways that it mystified technological force. So much for populism—the celebration of people’s agency—as a progressive position!\footnote{37} The spread of actor-network theory, with its interest in the agency of things and the thingliness of agents, oversaw a kind of truce. It was sociological enough to allow for the wisdom of people and technical enough to demonstrate the constraints of design. The concept of technological determinism has more or less stabilized since the 1990s as a morally inflected trade-off between resistance (by the people) and domination (by machines or their captains).
Who Is a Technological Determinist?

There are good reasons for this fear. There are those who embrace the label. Thomas Friedman, for instance. Others close to Silicon Valley could wear the label proudly: Howard Rheingold, Kevin Kelly, Ray Kurzweil, Stewart Brand. Earlier thinkers as well could join the party, such as sociologist William Fielding Ogburn or futurologist Alvin Toffler. Discussions about Facebook as enabling the misnamed Arab Spring or Twitter defining Trump deserve rapid critique so that we can figure out what part media really played in the ensemble of factors. A strong strain in American culture celebrates technofixes (the subject of Noble’s aforementioned book). At one level, technological determinism is a battle cry of scholars against engineers, who are stereotypically hostile to the social sciences and humanities, who often regard human “factors” as obstacles, and whose native ideology is progress through bettering gadgets. In this domain, the attack on technological determinism is fully justified.

But when the artillery is aimed inward, whom does it hit? Among serious scholars, can we count anyone as a technological determinist? Marx? How many brilliant unread pages did he write about the complexities of historical change, and yet we continue to argue the meaning of “being precedes consciousness” or “the steam mill gives you industrial capitalism”?

How about Jacques Ellul? In his preface to the American translation of The Technological Society (1964), Ellul fends off the charge of pessimism or fatalism and, more specifically, of dismissing individuals.38 “I do not deny the existence of individual action or of some inner sphere of freedom” (xviii). He admits to being, analytically, a determinist inasmuch as he sees larger technical structures as shaping society. But his call to arms would please an E. P. Thompson or a Jill Lepore: “We shall need all the energy, inventiveness, imagination, goodness, and strength we can muster. . . . Each of us, in our own life, must seek ways of resisting and transcending technological determinants” (xviii). “Reality is a combination of determinisms, and freedom consists in overcoming and transcending these determinisms” (xxii). Any Marxist, feminist, critical race theorist, liberal, libertarian, or anarchist could find something here to like. But the same man who calls us to transcend determinisms is also famously willing to make macro-style proclamations. To take one at random: “We are today at the stage of historical evolution in which everything that is not technique is being eliminated” (84). Ellul despises determinism yet loves making unqualified statements about la technique.

What about Friedrich Kittler? The late media theorist combined a love of hardware, a death-of-the-subject poststructuralism, and a unique talent for academic provocation; he is not surprisingly often called out as a technological
Kittler was a student of inscription systems (Aufschreibesysteme) or “discourse networks” that include devices, institutions, programs, practices, and subjects, but he was not a technological determinist if this means that only technology matters. His histories are populated with doctors, generals, philosophers, poets, inventors, soldiers, and women (who rarely overlap with any of those other categories), and are propelled by discourses, industries, algorithms, wars, love affairs, states, and machines. There is plenty of contingency though not a lot of resistance in his narrative of media development. His histories admittedly move in structuralist lurches rather than socialist slides, but technology is not the only factor. (In this he is closer to Innis than to McLuhan.)

Kittler is, moreover, a sworn enemy of the liberal subject. He despises sentimental conceptions of grassroots agency, and his lines such as “media determine our situation” and “so-called people” are polemically vibrant against what he sees as flabby bourgeois humanism. So when we call him a technological determinist, are we complaining about Kittler’s historical method or his politics? If we want to criticize scholars for failing to render homage to the role of ordinary folks in historical change we should do so without demonizing the study of technical systems or the shaping role played by media of all sorts. (Perhaps Kittler in this case is just getting as good as he gives.) Today, when much of our infrastructure is digital and thus seemingly personal and flexible, the progressive stance might precisely be to argue for technological determinism. (It would be better, of course, to get out of the subject-object box altogether, but wise heads will not hold their breath.) Industrial interests celebrate the so-called “prosumer” or “prod-user,” the active audience creating user-generated content, the cute “I’m feeling lucky” button inviting you to treat the internet as your private domain. To keep denouncing technological determinism in our moment is to risk a mistake graver than granting agency to devices—that of giving up on critique, that is, reflection on conditions of possibility.

I could multiply examples of theorists who say they are not technological determinists but are accused of being such. Scholarship is an inhomogeneous world of sentences, some written with the greatest rigor, and others with atmospheric or heuristic sweep. Academic discourse includes establishing shots and close-ups, pithy plot summaries and down-in-the-weeds exposition. Technological determinism is a problem of the long shot. Scholars can write pages of qualifications only to be remembered for their occasional zinger. Critics attack the dramatic epigram and authors defend their measured paragraphs. As Steven Shapin notes, proverbs are at the heart of academic knowledge. This is not a lament, but an explanation. Nuance is a large part of the scholarly export business, as simplification is of the import business. Production requires the complexification of data; consumption, its
reduction. When we write, we weigh all the subtleties; when we read, we look for the synthesis. Slurs and insults codified as -isms or occasional -ologies (ideology, teleology) are the often unhappy face of this trade.

It is, indeed, a remarkable doctrine that can gather such a diverse company of critics. Soviet and East German Marxist-Leninists complained about bourgeois technological determinism for neglecting economic forces, while British cultural Marxists complained about both Leninist economism and nuclear resignation as giving short shrift to agency. Neoconservatives at Commentary and anarchists (Ellul) both found technological determinism totalitarian. Marxist anthropologists (White) and structuralist paleoanthropologists (André Leroi-Gourhan) saw in technical determination a clarifying mode of cultural or historical explanation, in the rare case in which the term was not a hot potato you threw to somebody else. Labor and women’s historians saw it as obscuring the hidden contributions of nonelites. No one except for the occasional nonacademic technolibertarian embraced its mantle.

What were the sins of the doctrine, if doctrine it was? A sense of historical inevitability, pessimism or even fatalism; the lack of popular political control over technical decision making; a vision of technology as autonomous from human agents; a denial of cultural contingency; the reification of technology into monolithic blocks; the overestimation of the power of engineers; an insistence on a single cause; and the failure to appreciate the part played by people in the making of technical worlds. The term acquired a number of barnacle-like adjectives: crude, vulgar, naïve, narrow, heavy, soft, or hard. Perhaps all the critique really amounted to is the old maxim not to confuse necessary conditions with sufficient ones.

Technology is a perhaps hopelessly messy term; I am one of many who have tried to disentangle it. The concept of technology needs purging of its masculinist, white, Western, and procapitalist biases. But what is the problem with determinism? Why do the nations rage against something that lies at the core of scholarship and perhaps even cognition itself? The drive to discover determination lies at the heart of inquiry. Investigation cannot operate for long without seeking out the mutual priority of ideas and events; it may win fame for scholars to bash determinism in the same way that it can win elections for politicians to bash government, but both positions are equally contortionist and ultimately unsustainable (even though careers have been made on both).

“A then B” is the structure of narrative, logic, and explanation. We want to know how A led to B (story), A implies B (logic), or A caused B (prediction). If we want knowledge, we will need some kinds of determination. Distancing this goal by calling it an -ism is a kind of bad faith that misses what academic inquiry is about. It simply restates something that no one could disagree with: we want to avoid bad explanations. We desperately need knowledge of cause-and-effect relationships such as between human activity and environmental
transformations. We can’t afford to not try to tell big stories about data power or infrastructural shape. Disdaining technological determinism is part of a wider political culture shared by the right and the left in which self-evidently bad things that no one will speak up for are zealously attacked. It is a lot easier to denounce government abuse than to make democracy work; to attack fallacies than to figure out what explanation or interpretation really mean; to denounce technological determinism than to write a really good history of technics and civilization.

Coda

Maybe McLuhan’s reply to the academic blowhard does make higher sense after all. Could he have been engaging him in an antic dialogue of provocation? Instead of refuting him, McLuhan put the blowhard in the position of the refuter: you mean my fallacy is wrong. He was ironizing a well-known academic truth game by switching roles of examiner and examined. The stinger of a fallacy being wrong, this curious double negation, however, left McLuhan with the performative upper hand. McLuhan, like Kittler, was a troll. Both practiced the art of making statements designed to outrage; if you take a statement literally, the joke’s on you. If they can goad you into sputtering indignantly about technological determinism, you lose! The blowhard had reduced McLuhan to a set of ideas, a doctrine, or message, but McLuhan, ever the meta-artist, showed that it was all about the act, the twisting of grammars, the medium. McLuhan never claimed to have a point of view: as a latter-day sophist he could conjure dissoi logoi (contrarian terms) at the drop of a hat. McLuhan had a knack, a bag of tricks, not a philosophy, a set of tenets. He knew the truth sometimes had to be lured forth. By resisting the would-be Columbia professor’s reduction of his work to ideas rather than disruptive performances, McLuhan scored the most decisive refutation, showing, Zen style, that he had missed the point. By risking looking like an idiot, McLuhan showed himself to be the true parrhesiastes, the provoker of truth.42

Risking looking like an idiot is something we academics are loath to do. And yet the truth is hard and often stumps us. We stand as fools before it. Socrates enjoyed showing elites how confused they were and praised philosophers for at least knowing they were confused. His elenchos wasn’t all that different from Freud’s psychoanalysis. The things before our face baffle us the most. We all have beams in our eyes, and any dedicated observer will spot them. Perhaps the lesson is to have mercy on each other’s fallacies. That might be one step toward avoiding the toxicity that infests public life today.
Notes

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5. Geoffrey Winthrop-Young, Kittler and the Media (Cambridge, 2011), 121.


11. Thomas Wheatland, The Frankfurt School in Exile (Minneapolis, 2009); chapter 1 sketches the fraught internal politics of the sociology department at Columbia at the time.


19. White’s work set the agenda for Soviet discussions of technological determinism. If I had time, these would be interesting to discuss, as would French developments in the 1940s around the Annales school. For instance, see André Leroi-Gourhan, L’homme et la matière (Paris, 1943), 334, and Lucien Febvre, “Comment classifier les techniques?,” Mélanges d’histoire sociale 5 (1944): 71–74, 73.


23. Naomi McCormack, e-mail message to author, July 2011.


25. Ibid., 199.


29. E. P. Thompson, “Notes on Extremism, the Last Stage of Civilization,” in *Beyond the Cold War*, 43.


