

FROM TECHNOLOGICAL AUTONOMY TO TECHNOLOGICAL BLUFF: JACQUES ELLUL AND OUR TECHNOLOGICAL CONDITION

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Abstract: The work of Jacques Ellul is useful in understanding and evaluating the implications of rapidly changing technologies for human values and democracy. Ellul developed three powerful theses about technology: technological autonomy, technological determinism, and technological bluff. In this essay, the authors explicate these views of technology, and place the work of Ellul in dialogue with the ideas of other important theorists of technology (including Max Weber, Herbert Marcuse, Lewis Mumford, Langdon Winner, and Hans Jonas). Ellul's too-often overlooked theses about technology are relevant to our present technological society.

Key words: Jacques Ellul; autonomous technology; technological determinism; technological bluff; technology and democracy.

In early 2015, Microsoft founder Bill Gates voiced suspicion regarding the possibility of super-intelligent machines. Gates told participants in a *Reddit Ask Me Anything* forum that: “First the machines will do a lot of jobs for us and not be super intelligent. That should be positive if we manage it well. A few decades after that though the intelligence is strong enough to be a concern.” He also publicly pondered why it was that more people did not share his reservations. His statement echoes a time in human history when many were troubled by technology, as exemplified by the 19th century luddites and romantics (see Shelley 1818/1969), 20th century science fiction dystopias in film and literature, and the simple living movement of the early 21st century. Gates’ comments remind us that, as songwriter Peter Allen put it, “everything old is new again.”

Many contemporary thinkers, including Nick Bostrom (2006) and Julian Savulescu (2009, 2012), or even a popular writer such as Michael Pollan (2003, 2013), display what is generally a greater openness to technology, and in some instances a celebration. For these thinkers, technology is presumed to create new freedoms, expand human control and opportunity, solve problems, and further democracy. Gates’ comments articulate the fear that modern human beings are creating technologies that will escape our control; that we are increasingly in a prison of our own making. In a cultural situation characterized by

ever-increasing and sophisticated technology, how might we best conceive of the relations between humans and our creations? How might we best understand the world we are making? In this paper we explore the work of the 20th century philosopher, sociologist, and theologian Jacques Ellul, with an emphasis on three concepts relevant to the questions posed above: technological autonomy, technological determinism, and technological bluff. These notions are important diagnostic tools, providing a framework for understanding both the nature of technological society and human experience within such a society.

Ellul argues that technology presents fundamental threats to society. His concerns are not what we typically take to be the problems raised by technology such as pollution, deskilling of work, or exhaustion of resources. He acknowledges that these issues do, indeed, create real problems—real dislocations of ways of living and destructions of ecosystems, for example—yet because each of these challenges appears amenable to (or, perhaps require) a technological solution, none constitute a primary threat to humanity. The true threats technology poses to humans are, according to Ellul, its ability to drive out or erase the mystery that animates our “humanness” and to create a general cultural condition—a background for all we do—that technology will provide the solution or the way(s) forward (a concept he refers to as the technological bluff).

Technique

Central to understanding Ellul’s view is an explication of the concept of “technique.” Ellul (1962) believed that “Technique has become the new and specific milieu in which man is required to exist, one that has supplanted the old milieu, viz., that of nature.” In *The Technological Society* (1964), he defined technique as “the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity” (p. xxv). Technology, then, is not only, or even primarily, artifacts or objects—although it included those, to be sure—it is systemic and incorporates processes, rules (or codes), and institutions as well. Technique is a totalizing system of methods that has become the new environment, or milieu, for all of human existence. Ellul wrote: “Modern technology has become a total phenomenon for civilization, the defining force of a new social order in which efficiency is no longer an option but a necessity imposed on all human activity” (1964, p. 17). In a technological society, technique shapes everything—not only transportation and communication, but also politics and religion, economics, science, and education, even love and sex—all of these are comprehended as component processes aimed at clearly identifiable and quantitative goals that can be rendered more efficient. In this way, mystery is pushed out of human experience, and replaced with benchmarks, comparison groups, and measurable outcomes.

The concept of technique closely parallels Weber’s (1930/1992) notion of “rationalization” (Kalberg, 1980; Ritzer, 2013). What Ellul deemed the fundamental characteristic of the technological society—the application of technique to all aspects of life—Weber identified as the complete triumph of the process of rationalization. In lamenting the lack of resources for critical reflection and engagement in modern society, Marcuse’s (1964) text, *One-Dimensional Man*, also stakes a claim similar to Ellul’s. The current cultural condition described by both men is one in which systemic logics shape the limits of what it

is rational to ask or think. Individuals in today's world may believe that they have lots of choices, but most of our decisions are non-substantial, say Marcuse and Ellul. For example, the ability to pick from fifty flavors of soda and forty different kinds of breakfast cereal does not constitute a substantial sense of freedom. Marcuse maintained that technology contributes to a society of distracted and unreflective members (consumers and not citizens). A technological society, Ellul reasoned, begets autonomous technique, a condition in which technology's values drive technology, and following from this technology will determine the rest of society. In a condition of autonomous technology "External necessities no longer determine technique. Technique's own internal necessities are determinative." (1964, p.134) Ellul theorized that once human beings enter the technological society (our current situation) technology is not controlled by anything.

Autonomous technology

Ellul's claim that technology has become autonomous is controversial. Reactions range from accusations that it expropriates the plot of a dystopian science fiction novel or movie to critiques that his logic is counterintuitive (Pitt, 1987). How is it possible to reconcile the claim that technology is out-of-control with the successes of the U.S. environmental movement—from the publication of Rachel Carson's *Silent Spring* (1962) through the creation of the Environmental Protection Agency to the passage of the Clean Air and Clear Water Acts?

Ellul's point is not to deny important instances of individual social movements changing things for the better. It is, rather, to point out that while new technologies and technological progress in any particular area is a contingent process (there was no necessity that the personal computer revolution would center around San Jose, California, for instance), the contingency is embedded in larger structure, a larger tendency. Individual technologies are not determined in the strong sense that eye color is governed by Mendelian principles, but as part of an encompassing system that sets the conditions of possibility for technologies and technological changes. Humans design, manufacture, use, market, buy and sell technology, but it is necessary to ask toward what ends, for what reasons, and according to what rules do humans work to advance technology? According to Ellul, the technological system exists beyond the (actual or possible) control of any individual and/or any group of people. It is to this observation that we now turn.

The lack of interference in the "headway of technical progress" is one key way in which the autonomy of technology can be recognized in the contemporary world (Ellul, 1964, p. 82). Rarely (if ever) can individuals, organizations, or institutions withdraw a technology once it has been introduced. A well-known example of such technological intractability is Japan's effort to restrict rearms. Guns were seen as detrimental to the traditional feudal social structure because they undermined the heroic and knightly samurai ethic and the Japanese regime successfully suppressed rearms for a period of time (notably, while the country remained isolated from the rest of the world). Yet, in the nineteenth century when foreign powers were perceived as a threat, Japan embraced the gun and reinstated arms production (Brown, 1948; Perrin, 1988). Here, we see both the possibility of particular retrogressions, but also the tendency toward technical progress. As Lewis Mumford (1934)

argued, technologies tend to fade only when superseded by one that does more or does it better (typically this means an increase in efficiency) and new technologies often first take hold in environments where previously dominant technologies were scarce.

Technology operates similar to a ratchet; each move forward sets the stage for further technological development. In the case of large-scale technologies, government institutions often fund and support technical programs such as space exploration, genetic research, super colliders, or national systems of highways and trains. Once invested in a technological project, it becomes progressively harder to simply drop it, even if problems and difficulties arise. We find this pattern present in the history of the culture of the automobile. Automobile culture transformed manufacturing, resource use, living patterns, romantic and sexual relationships, and human experience (Volfi, 2006). Typically, the larger the commitment an individual or society makes, the more difficult it is to withdraw.

Another feature of technology that supports the autonomy thesis is technology's tendency to spawn more technology, creating a self-perpetuating system. One way that this process takes hold is through the constant production of unanticipated problems created by technology, many of which, Ellul believed, were "fake problems." In "The Technological Order," Ellul (1962) pointed out that all too often such "problems" consume our attention. For example, consider the challenge photography presented to existing forms of artistic production. Some attribute the revolution in painting that occurred during the late 19th and early 20th century to the impact of the photograph (Wells, 2009). Yet, the photograph did not bring about the "end of art" as was feared. Photography not only played a role in the transformation of other static arts, it becomes an art form and opens new avenues of creativity (Berger, 1972). Similarly, technologies of smoke-stack-scrubbing and emissions trading stand as a response to acid rain caused by power plant emissions. In both examples, technology simultaneously presents a problem and a solution, in an on-going dialectic.

Given this reality, Ellul argued that we could not even object to a technological order on the grounds that it threatens and destroys values. This is so because any system will contain, operate according to, some values or other. While those of a technological system may well be different from earlier eras, it is not a valueless system. The solution to the challenges of the "fake problems" of technology, then, is not a rejection of technology, but new, better, problem solving technology. In this way society tends to adjust to the technology, rather than adjusting the technology to society, claimed Ellul, moving toward technological determinism.

Since the 1970s political scientist Langdon Winner has been one of the most important and insightful thinkers whose work focuses on understanding and analyzing technology and a technological society. As in Ellul's work, Winner's (1977) discussion of autonomous technology emphasized that the tool model of technology—that technology is primarily physical objects which are best understood as value-neutral—misleads people about modern technological systems. Both scholars suggest that framing technology as merely a tool supports naive and self-serving justification of the present state and the future direction of technology. The tool model of technology takes all technology—individual tools and technical systems, as well as development, methodologies, and technology as-such—as if it were a simple value-neutral object. It is based on the assumption that individuals use tools for a particular purpose, to reach a particular goal. With respect to technical systems, or a technological society, the idea that we control technology not only treats society as a kind

of collective person, but also treats modern technology as a tool that could be manipulated by an individual. The technological system may have its end products utilized by consumers. But, technology is not really used, in the sense that it can be guided toward a particular purpose. Consumers do not originate, maintain, or understand the complex technology or complex socio-technology of the system.

Even if we are willing to admit that all consumers are not directing the technological system, one might still be tempted to think that at least there are some elites who are. But Ellul and Winner made clear that the complexity of the system, with its constraints and imperatives, guides behavior, decisions, and conceptualizations. The inventors, engineers, maintenance people, business people, bureaucrats, politicians, and others involved in the system lack an overall intellectual grasp of, or strategic control over, the system. These individuals understand and control only a small fragment of the system. The state does not play the all-powerful central planning role that many technocratic theories describe or advocate. The role of the state is largely one of legitimating existing social orders (Habermas, 1975; 1984; 1987). The various large technological systems follow their own rules and, at times, may conflict with one another, but are not truly controlled by the state, rather the state is limited by the content and direction of technological systems and imperatives. For example, once we have dispersed single-family ways of living, distant from commerce, industry, and education, then some forms of transportation become rational and others (subways, for instance) do not.

Indeed, discussing a technological system in terms of its manipulation to reach a goal or serve a purpose is misguided, said Ellul and Winner. The presumed goals of technology are generally laudable (bringing greater productivity and improved standards of living, increasing wealth and leisure, freedom from drudgery, toil, disease, and boredom, in short, human happiness), but in practice they are rather devoid of content. While the means—the technologies—become ever more complex and refined. Goals such as freedom or wealth are seldom questioned, but it is often unclear what these mean, for whom, and at what costs. The focus is on extending the means of development, pursuing new technologies. Goals are given such content as will fit the technological means available. Thus, “success” becomes not a state of flourishing but as acquiring more possessions. “Educated” no longer connotes wisdom but possessing measurable and marketable skills.

In summary, technology becomes autonomous when it ceases to be primarily a means or a tool and begins to become an end or a goal, and as it tends toward self-perpetuation and intractability. Taken together, we see that technology changes following a technological logic, increasingly independent of human desires. At this point, we are moving toward the thesis of technological determinism, that technology is the prime-mover of a technological society, providing the guiding values for all aspects of contemporary life; efficiency being chief among them.

Technological determinism

What does Ellul suggest in developing his principle of efficiency? Efficiency is a catch-all term used to describe increases in productivity or output with respect to some goal. Technology, either objects or processes, increases efficiency when it is possible to do the

same as previously with less labor, fewer materials, or less energy, or to do the same in less time. The quest for efficiency is a relentless seeking for a new way, one that produces more for less investment, to accomplish a particular goal, and in principle it is a seeking for the one best way. Technological determinism is a situation in which technology and technological values, chiefly efficiency, have colonized and assimilated what it means to be human. In other words, efficiency has become not only the force guiding and determining technology, but through technology, the primary value of the present age. Perhaps we can best understand Ellul not as arguing that each movement within a technological order necessarily increases efficiency (technological systems throw up all sorts of inefficiencies and unsuccessful products, consider, for example, the Apple Newton, the Beta-Max, Quadraphonic sound, or any of the hundreds of failed prime-time TV shows). Ellul proposed that in a technological society, efficiency becomes the central organizing value. Put differently, all techniques are supposed to contribute to, and are justified as, increasing efficiency. Technological development is pursued not only to achieve more efficiency, but it is pursued, and legitimated, in the name of more efficiency (Winner, 1995).

The effects of efficiency are so totalizing that Ellul (1964) maintained that the “stake of the century” rests on the belief within technologically advanced societies in the 20th Century that technology will be best for humanity. Ellul (1990) argues “The present-day ideology of science is an ideology of salvation . . . Science alone holds the future to our society” (1990, p. 182). This conviction amounts to a bet, wagering of human future on technological progress. The question before us, he argued, is whether or not it is possible to insert non-technological values as drivers, or slow the growth and advance of technique, and whether it is possible to preserve or cultivate non-technological values in other spheres.

Two possible routes for the introduction of non-technical values into a technological order are through democratic intervention and direction or through market pressures exerted by consumers. As indicated earlier, Ellul argues that in our actual situation of autonomous technology neither democratic action nor consumer choices will provide alternative values to guide technology. In fact, under technological determinism technology will come to guide other areas of human life.

In what Langdon Winner (1977) called “reverse adaptation,” the technological system, particularly its social components, adapts the society to technology rather than vice versa. Through advertising of particular devices or propaganda for the acceptance of technologies in general, the marketing of technology persuades the public to accept new technologies (Ellul, 1965). This process denies that technologies are simply freely chosen by the public in the marketplace and emphasizes the ability of advertising to sell the technologies to the public.

Here, it is instructive to examine the efforts of large corporations to lobby governments and the public writ-large to support and accept the technologies that they manufacture. The Price-Anderson Act, first passed by the U.S. in 1957 and last reauthorized in 2005, is a particularly relevant example. According to the U.S. Nuclear Regulatory Commission, “The legislation helped encourage private investment in commercial nuclear power by placing a cap, or ceiling on the total amount of liability each holder of a nuclear power plant licensee faced in the event of an accident” (2014). If nuclear power companies had to pay the full insurance rates to cover major nuclear accidents, then the cost would be prohibitive.

By an Act of Congress, insurance payments and liability was limited to only a portion of the likely cost of such an accident. Large-scale technologies such as nuclear power are initiated to respond to concrete and aspirational human needs, but come to be pursued for their own sake and to shape other aspects of the social world. In this way, large-scale technologies tied to powerful institutions and interest groups override social resistance.

Many contemporary technologies appear to offer greater individual or local control, greater freedom, and perhaps to be more compatible with democracy. Such developments raise the possibility that technology has (or will) transform into a more responsive and human order. Ellul (1965), however, remained skeptical. Echoing the work of Theodor Adorno and Max Horkheimer (1944/1989), Ellul argues that a form of individualism does exist in a technological order, but it is a form of individualism largely devoted to creating ever more particular consumer goods (products and experiences). This form of individualism appears to decentralize control and to be consistent with real and meaningful freedom. This idea functions as a powerful and mesmerizing myth.

In any complex social system, the coordination of individual actions is necessary. Thinkers as varied as Freud (1929/2010) and Hobbes (1651/1982) have argued that individuals inevitably cede some level of control to others and to the system in order to create a working social order. Within a technological society, Ellul's diagnosis was that democratic acts (such as voting), or rhetorical appeals to prosperity and freedom, foment a condition in which people will make individual choices that serve to continue the existing technological order. In this way, Ellul found, autonomy is perverted from genuine freedom to making choices to perpetuate autonomous and determining technology.

Reading Ellul, one might reasonably doubt that we will ever be able to create a situation in which individuals adopt a critical and reflective engagement with technology and the technological order, and thereby move toward genuine democracy. The hallmark of democracy—engaged and critical participation in decision-making—requires that each participant “have a complete, serious, elaborate, and honest file” of all of the relevant factors involved in the decision (Ellul, 2003, p. 389). Few people possess the resources of time, energy, and knowledge, or the ability to pursue and develop a coherent and critically engaged view on each democratic issue. Moreover, Ellul upped-the-ante, as it were, in positing that the “more informed the citizen, the less he can participate” (2003, p. 389). In exponential progression, the more one investigates technology and technological systems, the more complexity is uncovered. Technology and technological systems are embedded in material infrastructure, cultural practices, personal habits, and thus ever more difficult to either understand and analyze, or transform. For Ellul, this was a prime instance of the absurdity of technological society.

We thus find ourselves with a new, specific form of technological determinism—the technological bluff—where we unquestioningly accept that new is better, that new means are better than older ones, that technological change is inevitable and good, and that any problems that arise will allow a technological solution. We now generally, if sometimes grudgingly, accept new technology. This is the case even when it creates new difficulties, when it raises profound ethical questions, when it might work less well, or when it exacts greater demands than previous technologies.

The technological bluff

According to Ellul's analysis, a "great innovation" took place in the 1980s, at which time, the public perception of technology changed significantly (1990, pp. 16-23). Prior to this decade, from Luddites through Romantics to Hippies, people resisted the demands of technology. Transformative new technologies called forth resistance and critique including, but not limited to the targeted breaking of machines and apocryphal warnings of the dehumanizing dangers of too much faith in technology. Starting in the 1970s, and culminating in the 1980s, Ellul noted that people "have stopped trying to clash head on with obstacles and refusals. They have stopped trying to rectify technical malfunctioning by direct action" (p. 18).

By the 1980s, society had become so much in thrall to technology and technological advance, that technology was (and is) a second nature; the primary environment within which humans (at least in industrialized countries) live. Ellul called this condition the "technological bluff." The technological bluff is a situation "in which discourse on techniques envelops us, making us believe anything and, far worse, changing our whole attitude to techniques: the bluff of politicians, the bluff of the media, the bluff of technicians when they talk about technique instead of working at them, the bluff of publicity, the bluff of economic models" (1990, p. xvi). The technological bluff is the culmination of autonomous technology and technological determinism.

In the technological bluff people are at home within the technological society, and feel either confirmed (and comforted) by it, or feel nothing about technology as such. It is in this way that technology functions as a second nature (Hanks, 2010; Ortega y Gasset, 1941). Constant change of technologies becomes a normal part of everyday life. Participants in the technological bluff expect constant change from both particular technologies (a new generation of smartphones, for instance) and as a whole (the emergence of smartphones from earlier cellphones, which emerged from earlier portable phones, and so on), an account reminiscent of Hans Jonas' (1979) description of technology and contemporary technological culture as restless. We are perpetually prodded, for example, to install a new version of software without yet understanding and/or fully employing the functions of the previous iteration. It is now rational to expect that the new system to create new problems, demand new devices (the previous one's now obsolete, of course), and require that collaborators also upgrade. Constant consumption of inessential gadgets becomes a normal economic activity (Ellul, 1990). People working in research and development, at corporations, in government, and at universities, pursue new technologies without a clear sense of why, other than to increase efficiency and make money (the second often because of the first), or because they feel that in some sense they should. Universities open offices of commercialization, furthering the conflation of success and education with quantifiable and monetized outcomes. This process is both caused by and promotes technique.

The technological bluff calls forth two types of people in the technological society: the *fascinated* and the *diverted*. The first, the fascinated, are those who experience wonder and delight at new technologies and at the advance of technological systems. The fascinated tend to have an uncritical relationship with technology, embracing the new, and believing technological advance is good for humans. Some are eco-fascinated; believing that technological advance will ease the human footprint on the environment and lead to a more

balanced ecologically sensitive form of human existence. The second type of person is distracted by the many enticements presented within a technological society. As do Adorno and Horkheimer (1944/1989), in their discussion of the Culture Industry, Ellul argued that the diverted person cares little about larger archs of human activity and history; oftentimes disdaining politics (even the attenuated electoral politics available). Instead, the diverted are entertained by video games, gadgets, streaming video, endless competitions, celebrity gossip, and so on. In such a distracted state, one finds little time or energy for, and little practice of, the rational, critical, creative activity and free judgment that defines the best potentials of humanity.

Conclusion

Are humans going to wake up from their sleepwalking love affair with new technology and place technological growth in a dialectic tension, a tension of freedom against one-dimensional thinking, as Marcuse thought they might? In summary, Ellul's position is that: (1) new technologies and systems will continue to present new challenges and (2) these problems are such that they are likely to be met with, and only with, even more technology. There is thus only one sphere to seek answers—increased technology. This is to act as if technology, and technology alone, helps us create a better world. Resolving the problems of technology always requires a better use of better technologies. This might be realized within a democratic social order, or not (as in the authoritarian capitalism of contemporary China). The efficacy and the humanness of such an arrangement are rarely questioned (Ellul, 1990). For Ellul, such a situation is tantamount to a bluff, a lie. In it, we are complicit in a system that is at odds with genuine human freedom.

When technology seems “out-of-control,” then, it is only through more techniques, especially techniques of apparent democratization and individualization, that it is possible to generate solutions. In his analysis of the possibilities of computer technologies to (supposedly) further democracy, Ellul (1990) argues that while the dream of computers and the Internet may hint at a utopian realm of freedom, the lie is that the systems turn out to be more useful in monitoring, predicting, and managing citizen behavior. The computer is especially nimble at marketing—what Ellul (1965) calls propaganda—and rationally and efficiently aiding the technological conquest of contemporary life. Consider the current concept of “digital handcuffs.” The oft-used term describes the gentle process of being sucked into the expanding Apple ecosystem.

Centralized management, globalized economies, and the immense scale of technologies, combined with the rapid and constant development of new technologies are not necessarily at odds with democracy (Ellul, 1990). Ellul argued, however, that the actual trajectory of technology has been anti-democratic with technocrats aiding in the process of replacing authenticity (our “first” nature) with artificiality (our “second” nature). Business and government are always seeking a techno-fix (Huesemann & Huesemann, 2011), thereby encouraging increased interactions through technology (think of the rush to on-line universities, or the digital provision of social services). But we now live in a situation that has “impart[ed] this ideology to society as a whole...They [technocrats, institutions, and structures of a technological society] cannot act in any other way. They are forced to reject

increasingly what remains of democracy" (Ellul, 1990, p. 395). Yet another indication that the technological society will remain an undemocratic society if participants persist, in the name of freedom, to make pseudo-autonomous decisions that further embed them in technique (Ellul, 1990).

We have returned full-circle, to a situation in which people should be troubled by technology, and in which we need not await the rise of new super intelligent machines. Ellul makes clear; we already live in a technological order. What then is the diagnosis? In the age of the technological bluff, to be ever more deeply entwined in a technological order is to find oneself affirmed. In the technological bluff, to be more deeply entwined in technology might be the attenuated and only sense of humanness that remains.

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