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**Technê-Logos: A Review
Essay of Ellul's The
Technological Society and
Skrbina's The Metaphysics
of Technology**

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Techne-Logos: A Review Essay of Ellul's *The Technological Society* and Skrbina's *The Metaphysics of Technology* by Bellamy Fitzpatrick from *Backwoods* 3

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other words, to revolt against the system. This, of course, seems equally hopeless. But it's not entirely so, and given the alternative of surrendering and dying, it may be the only action left to us.

As you suggest, this would likely involve pan-secessionism from all large-scale governmental structures (which should happen in any case!). It will also involve direct action attacks on key aspects of the system; see, for example, Kaczynski's essay "Hit where it hurts." Another interesting bit of writing is Derrick Jensen's two-volume book *Endgame*, in which his sections on pacifism' (ironically!) describe how a small, skilled group of people can cause massive damage to technological infrastructure based on lessons from our own US military, who are so good at covertly attacking other nations. I won't elaborate here, but you can imagine where that discussion would lead.

In reality, it may take some combination of reasonable and unreasonable actors in society to bring us, kicking and screaming, back to a sustainable level of technology.

The decade after that would witness the elimination of television, airplanes, radio, automobiles, landline phones, and gasoline engines. And so on, slowly and gradually, until we are back at the early Renaissance a level that clearly can sustain a high level of cultural achievement, by the way.

Concomitant with this would be two other actions: gradual reduction in global population, and gradual expansion of wilderness areas. The nominal goal would be to get to 400 million people globally (the level in 1200), and around half of the planet back to true wilderness. Again, allowing 100 years, we would only need 2 or 3% annual change to reach these goals very attainable, by a rational humanity.

This, of course, seems outrageous on the face of it. But we have yet to face the truly disastrous outcomes of a runaway technological society. My guess is that, within one or two decades, humanity will be confronted with a horrific, technological disaster in which millions will die. The hope is that, at that point, we will realize what the future holds in a high-tech world, and then we will seriously contemplate a deliberate, safe, rational retraction.

And for those who still find my suggestion ridiculous, I say: Give me a better alternative. It's easy to criticize, but hard to come up with something better. Shall we do nothing, and stay the course? That's a recipe for disaster. Reform the system? We have no evidence that that will succeed. Promote new and 'better' tech? That never addresses root causes, and never can. Keep the 'good' tech and get rid of the 'bad'? But technology is an integrated, monolithic system that can never be disentangled. It's surprisingly hard to come up with a better alternative; I know, I've tried it for years.

Now, for the 'unreasonable' side: There is a good chance that, even with a frightening and horrific technological disaster, that humanity will never be able to roll back technology. As Ted Kaczynski and others have argued, it may well be that no rational course of action can ever succeed at a mass level. In that case, it falls to individuals and small groups to try to bring down the technological system on their own. In

“No longer are we surrounded by fields, woods, and rivers, but by signs, signals, billboards, screens, labels, and trademarks: this is our universe” Jacques Ellul, *The Humiliation of the Word*

“When the 20th century began, we were still unable to create a functional flying machine, we rode in horse-drawn carriages and read by candlelight. The century ended with microcomputers, cell phones, nanotechnology, atomic weapons, space flight, and the Internet. One can hardly imagine a greater set of social, psychological, or environmental changes occurring in what was, in principle, the lifespan of a single human being.” David Skrbina, *The Metaphysics of Technology*

Blind to the Flood

The American writer David Foster Wallace began a well-known speech of his with a humorous and deceptively profound parable: “there are these two young fish swimming along and they happen to meet an older fish swimming the other way, who nods at them and says 'Morning, boys. How's the water?'” And the two young fish swim on for a bit, and then eventually one of them looks over at the other and goes 'What the hell is water?’”

[...] the most obvious, important realities are often the ones that are hardest to see and talk about. Stated as an English sentence, of course, this is just a banal platitude, but the fact is [...] banal platitudes can have a life or death importance [...]

Our water is the industrial infrastructure of late modernity, which envelops and sustains us so fully that it seems to be our natural habitat. Since the Industrial Revolution, technology has washed over humanity and the living world in a flood that is variously infiltrating, destroying, and replacing living systems and human relations. So often numb and unquestioning, we nearly incessantly touch or are held by it, feed or are fed by it: we walk into a room and reflexively reach for the light switch without needing to look or feel for it; we flush the toilet, and our excrement disappears into some hidden labyrinth of plumbing we

feel we can forget about; we drive to the grocery store and find shelves full of food from places we will never see. For many people in the West – those fortunate enough to have the more obvious realities of extraction and pollution tucked quietly away from them – technology is only really *noticed* when it fails, when suddenly these objects take solid form out of the water.

In spite of lying near the center of our ecological, social, psychological, and spiritual crises, the technological question is rarely examined even in radical discourse, and such examinations that do exist tend toward unforgivable superficiality and formulaicity. One can find the following archetypal milquetoast antics occurring over and over in virtually any of the popular media. First, a piece of technology (*never* the industrial infrastructure in its entirety) is questioned in a partial, contained way – *Are smartphones harming our children's social skills?* Some disconcerting evidence is presented to support the limited scope of the discussion still further – *Depression and anxiety disorders in teenagers appear to be associated with high average hours of smartphone use per day.* This histrionic questioning is quickly couched by assurances that we will remain safely within the discourse of the dominant ideology – *Of course, we cannot return to a world without smartphones, and we should be wary of Luddite romanticization of the past. Smartphones allow our children to access huge worlds of human knowledge and news, and we can stay in touch with our children in previously unknown ways through Facetime and keep them safe with GPS tracking.* Finally, a bromidic conclusion is reached through a call to some token gesture of resistance to the now exceedingly narrow problem – *Parents may wish to take care to ensure their children do not spend excessive hours on their smartphones and that they have regular face-to-face meetings with their friends.* This entire process is a textbook example of the “Operation Margarine” phenomenon astutely described by Roland Barthes: an aspect of the control complex is disingenuously called into question only to be ultimately vindicated and redeemed, and thus the every-person is emotionally manipulated into believing their society is responsibly self-critical.

Even serious, sincere attempts to discuss technology critically are often stillborn due to fumbling efforts at defining it, a problem again

Tylenol? Problem solved for a while. Then the poor fellow goes back a month later, worse than ever, and gets some Oxycontin. Again, problem solved for a while. In the meantime, of course, the cancer progresses. Soon the fellow dies as a result of the superficial, ad hoc solutions to his problem.

Same with technology. We can address surface problems, but the underlying cause the industrial technology system continues to advance. Or in many cases, it even accelerates! How many times do we hear that new technology is the cure for problems of old technology? That's like saying you need a good bout of prostate cancer to take care of your lung cancer. When technology is the root cause of your problems, you can never solve them with more technology.

So yes, 'reform', legal action, conventional political activism: all these are basically futile. At best they might buy us some time, but that's about all.

Regarding the specifics of what to do, I think we can divide the discussion into 'reasonable' and 'unreasonable' approaches. On the former, I've laid that out in a new chapter of a forthcoming book, "Sustainability Beyond Technology." Here I elaborate on my "creative reconstruction" scheme of "Metaphysics," which argues for a return to pre-modern technology, circa 1200 AD. In the new chapter, I claim that any rational, non-suicidal society should only strive for a safe, sustainable, nontoxic level of technology, which must necessarily be on the far (primitive) side of the Industrial Revolution; hence, around 1200 AD. So we need to "unwind" our tech system by about 800 years. But we can't do that overnight, or billions of people will die. Let's be generous and give ourselves a full 100 years one century to roll back 800 years of technology. Therefore, we need to retract specific technologies at about eight times the rate that we introduced them.

So for example, over the course of three years, we phase out cell phones, texting, social media, and mass emailing. The next ten years would see the withdrawal of mass Internet usage, nanotechnology, space flight, integrated circuits, home computers, and nuclear power.

Excerpt from David Skrbina Interview

Bellamy: *Your book gives an excellent philosophical analysis of the technological crisis but assiduously stops short of laying out a praxis. I understand there are many reasons to contain oneself to critique, but I wonder what you think can be done in the here and now. Since we agree that trying to reform technology is window-dressing at best, that would seem to leave normal political activism out of the picture as well, is that right? It seems to me that, at best, legal changes could only slow or temporarily contain some of the worst fallout of new technology. Moving on from that, what viable strategies are there: media efforts aimed at changing popular consciousness, or to reach out to a sensitive minority? direct action oriented against technological infrastructure? Pan-secessionism (see *An Invitation to Desertion* by Bellamy Fitzpatrick) and autarky in resistance to globalization? In short, how could we get from here to a new version of the year 1200, barring some sort of extrahuman catastrophe?*

Skrbina: As to a plan of action, that requires another book in itself! I sketched out a few general guidelines at the end of my *The Metaphysics of Technology*, which I'll recap here in a moment.

But in general, it's true that all attempts at re forming technology are more or less doomed to failure. In theory it's possible, but we have almost nothing in the way of empirical evidence to suggest that true reform of technology can ever work as a long-term solution. We can 'solve' small, local problems, at least for a while, but this does nothing to affect the larger trends. Worse, our 'solutions', typically being ad hoc and superficial, often do not get to the root of the problem; they just address symptoms. As such, the underlying problem(s) go untreated, and thus get worse. Hence the paradoxical result that reform solutions are often worse than no solutions at all.

An example I give in my classes relates to someone with lung cancer. What if that per son went to his doctor complaining of chest pain, and the doctor solves the problem by prescribing a few extra-strength

derivative of its ubiquity. This issue is not mere pedantry: if the definition is botched, then all efforts at understanding the deeper nature of technology are hamstrung, as we cannot even consistently pick it out from the broader field of phenomena and so cannot see its patterns. When defined too narrowly, as only post-industrial technology or even only as recently-developed digital gadgets, one loses sight of technology as a transhistorical phenomenon that has always been in a transformational dialectic with humanity. But the alternative of defining technology broadly as any and all tools – beginning with the digging stick, hide tanning, and even ideational techniques like language and a social division of labor – seems to lead the effort at critique into a rapid collapse into absurdity: if technology is nearly everything humans do procedurally, then how could one do without it?

I have come across few who have considered this complex issue as thoroughly and subtly as Jacques Ellul and David Skrbina, who have written comprehensive and carefully considered volumes that I urge every neo-Luddite and every technophile to read.

Ellul and *The Technological Society*

Jacques Ellul (1912-1994) was a french sociologist, a lay theologian, an academic at the University of Bordeaux, and a Christian anarchist. Ellul's politics were deeply intertwined with his religious beliefs – he converted to Christianity after he felt himself to be in the sudden, overwhelming presence of God while, ironically, translating Goethe's *Faust* at the age of seventeen. The author of fifty-eight books and over a thousand articles, a consistent theme of his work was the threat posed to human freedom and spirituality by industrial technology, most iconically expressed in his book *The Technological Society*. Given that it is a long, dense, and complex text, the reader is advised to remember that the scope of this short essay means that only a few of Ellul's many salient points will be summarized here.

Ellul's answer to the aforementioned definitional quandary regarding technology is to cast the net with bold breadth. The target of his critique is *technique*, which he defines as “*the totality of methods*

rationality arrived at and having absolute efficiency (for a given stage of development) in every field of human activity.” Ellul, as a trained sociologist (even if his studies expanded into theology and philosophy), examines technology *sociologically*, rather than materially – he is interested in how it affects community structure, the individual psyche, modes of governance, the division of labor, and so forth. This concept of *technique* – as opposed to, say, 'industrial technology' or 'harmful technology' – may seem almost nonsensically broad, but this is precisely Ellul's point, as “Technique is not an isolated fact in society (as the term *technology* would lead us to believe) but is related to every factor in the life of modern man [...]”

Therefore, in speaking of *technique*, we do not refer to simply the factory with its productive machines, nor is its meaning exhausted by including also the designs behind these devices. Instead, technique is also the division of labor within the factory, the standardized training of the technicians and the discipline of the workers, the proceduralization and synchronization of work within the factory, the monitoring of inputs and outputs in the production process and the drive to maximize efficiency – technique is all of these things and more, as we find our concept seems relentlessly encompassing the more we employ it. A recurring theme in Ellul's analysis is these issues simply cannot be understood in isolation – and to miss the *monism* of the technological society is not a mere incompleteness of analysis, but instead a total misdiagnosis.

Beyond the above, the society of *technique* includes as well the mindset involved in wanting to create the factory in the first place: it is the cultural values that lead to seeing a lack of mass-produced commodities as a problem for which the factory is a solution, and which will later see the cascading consequences of the running of the factory (pollution, destructive resource extraction, a glut of consumer goods, etc.) as further problems for which there are further technical solutions. Thus, technique is more than physical gadgets and prescribed mechanical procedures – it is their whole ensemble of interactions and their tendency toward growth and invasion of ever-broader fields of human life across time. Our modern gadgets are only a late, gross

injury and acute bacteriosis, our major chronic health ailments are essentially diseases of modernity: cancer, depression, obesity, diabetes, heart disease, addiction, anxiety, sleep disorders, decreasing empathy, and suicide. We have nigh-instant access to information through modern technology, yet our public education system is producing worsening results in terms of basic skills like literacy and critical thinking, and young people's social lives and mental health are measurably poorer. Our Faustian bargain has brought us certain material comforts, but it is rapidly undermining the biosphere on which we all depend.

Finally, Skrbina does not flinch from attacking the progressive sacred cow of humanistic moral progress in a concluding section on how technological progress has accompanied moral decay in most spheres, he writes, "Women and minorities are now free to work 60-hour weeks, to submit to the humiliations of the corporate world, to become 'competitive,' to abandon their children to end less daycare [...] What are young people getting [out of the modern world]? Are their friends better now than before? Are their lives richer? Are they morally stronger? Are they deeper thinkers? No." Since he bluntly notes that, "mass society is inevitably driven by the mass, and the rationality level of the mass is disturbingly low," it remains for the conscious minority to respond among themselves to the crisis, which we will examine in discussion with David Skrbina.

[technological] system is both and at once autonomous and dependent. Its power, its motive force, is beyond human influence, but its specific form and manifestation are wholly dependent on the modes by which we elect to create it."

Having laid out Ellul's view and Skrbina's augmentation, it is instructive to pause for a moment to acknowledge that while almost any level of Luddism is typically slandered as fluffy romanticism, the technological determinist thesis of these two thinkers may cross over into being denounced as pessimistic lunacy. Forestalling any possibility of the author being labeled a mere isolated crank who befriended a criminal psychopath, *The Metaphysics of Technology* is partially framed around a fabulous literature review that includes not only figures those familiar with Luddism might expect such as the aforementioned Heidegger, Spengler, Rousseau, Thoreau, Mumford, and Kaczynski; but also unexpected figures like Thomas Carlyle, Friedrich Jünger, Samuel Butler, Alfred North Whitehead, Karl Jaspers, and Henryk Skolimowski. Indeed, Ellul's view of technology is often presented as almost uniquely deterministic and pessimistic, not because this distinctiveness is real but because the notion of technological determinism is unfashionable in today's technophilic society, and it is often portrayed as Luddite paranoia when it is discussed at all. Ellul and Skrbina are unusual only in having developed their cases so directly and exhaustively. Many of the world's most influential philosophers Plato, Chuang Tzu, Hegel, Nietzsche-advanced briefer but nonetheless quite unflinchingly techno-pessimistic and deterministic views that are conveniently ignored when their views are discussed by intellectuals today. As David Skrbina notes, "the history of the philosophy of technology is almost exclusively a critical history." It seems almost every great thinker who considered the issue with any seriousness came to gloomy conclusions, while almost no one has bothered to defend its ostensible goodness the fish does not defend its water.

Skrbina closes strongly with several key Luddite conclusions by discussing the ecological destruction, chemical toxicity, and degradation of human nature and dignity brought on by runaway technology. While our hospitals undeniably deal well with traumatic

congelation of this more broadly understood *technique*, and are derivative of this deeper technicization that is first a mindset, a social organization, a formalization and proceduralization of lifeways. Emphasizing this aspect of it, Ellul writes, "technique is the translation into action of man's concern to master things by means of reason, to account for what is subconscious, make quantitative what is qualitative, make clear and precise the outlines of nature, take hold of chaos and put order into it." Throughout the work, Ellul continues to emphasize that machineological changes (e.g., the exploitation of steam power so pivotal in the Industrial Revolution) have tended to *follow*, not precede, social and attitudinal changes – his analysis thus breaks with orthodox Marxist historical materialism, a great error which Ellul ascribes to Marx projecting his own geographically and temporally local conditions in 19th-century Northwestern Europe – a delimited field in which his analysis was accurate – onto all of history. With his refusal to dismiss the importance of mindsets and cultural values, he seems to align with the political Christian tendency toward personalism: the ineradicability of the volitional, relational human subject as an essential moral end – the individual human does not disappear into epiphenomenalism relative to the vast material forces, but is instead always a real and present agent "who stands uniquely (is 'present') at the point of intersection of this material world and the eternal world to come [...]"

Central to Ellul's thesis is his drawing a clear distinction between "traditional" (pre-industrial) and "modern" (industrial and post-industrial) techniques – he overstates the point by saying, "Today's technical phenomenon [...] has almost nothing in common with the technical phenomenon of the past." For Ellul, the Industrial Revolution was a true *kairos*, an evitable and singular event that profoundly mutated the sociality, ecology, and psyche of humanity. Whereas pre-industrial technology could be contained and controlled and did not occupy a central role in human life, "modern technique" has a freakish sort of autonomy all its own and gains several distinctive characteristics, a few of which I will summarize here.

The first is industrial technology's opposition to the natural world "[Technique] destroys, eliminates[,] or subordinates the natural world,

and does not allow this world to restore itself or even to enter into a symbiotic relation with it [...] Just as hydroelectric installations take waterfalls and lead them into conduits, so the technical milieu absorbs the natural. We are rapidly approaching the time when there will be no longer any natural environment at all." This assertion significantly places Ellul in the typical Luddite or 'dark green' view that sees a decidedly real ontological dualism between Artifice and Nature.

Ellul's Thesis of Technological Determinism

Next are a series of characteristics that contribute to modern technique's key characteristic of *technological determinism*. This phenomenon is the way in which technological development reaches a kind of tipping point after which it gains its own inertia, such that the network of infrastructure becomes so massive, diffuse, interrelated, complex, and influential over its dependent human symbiotes that it is outside the control of any particular human individual or even group that tends to build or compound on itself as if possessed of its own agency. To reiterate, Ellul's thesis is complex, and I will only have room to characterize briefly a few of his observations about determinism.

One of these features is *self-augmentation*: when a society exists in such an ensemble of technology with which humans regularly interact, technological progress occurs almost autonomously. Development does not need to come through the great innovations of personal geniuses, but instead through small, piecemeal additions that are already implied by the whole. Technology is thus 'self-augmenting' in the sense that anyone of decent intelligence and proper education can add to it – it requires *less* from human beings. "It is no longer the man of genius who discovers something. It is no longer the vision of a Newton which is decisive. What is decisive is the anonymous accretion of conditions for the leap ahead. When all the conditions concur, only minimal human intervention is needed to produce important advances." We can, venturing off from Ellul, conceive of this phenomenon in an evolutionary and ecological manner – as humans come to interact more and more with artifice and less with their existing biomes, a kind

calls Gestell (Enframing). The 'Enframing' we do through aggressively ordering the world through post-industrial technology is itself very much still a disclosure of Being, a bringing forth of what was latent and an ordering of what was chaotic; but it entails and subsists in values inimical to human nature and the natural world, all of which become Bestand ('standing reserve'), fuel and raw materials, depersonalized and irrelevant except as grist for the mill. Humanity, mostly oblivious, is in Heidegger's view sleepwalking its way into becoming both conceptual and literal 'standing reserve.'

For Skrbina, the metaphysical dimension that Heidegger gestured toward but did not define or explain is the pantechical field, the felt drive of the Logos always pushing Being onward and upward. And Heidegger was correct to sense something deadly and perverse in this mystery. Returning to Chaisson's energy density metric described above, the most complex structures known, in terms of throughput of energy, are not organisms but advanced human technologies, with micro processors at the apex. The implication is that we will be usurped by cosmic evolution, not because the Logos is hostile but because it is absolutely indifferent: we are fated to become Bestand in this evolutionary process. "Higher levels of structure order and organize lower levels sometimes benignly, sometimes destructively, but always with a loss of autonomy for the lower orders and a gain for the highest."

Skrbina thus clarifies and completes Ellul's analysis by complementing his exhaustive description of our predicament with an intriguing explanation of our arrival at this juncture. His metaphysical analysis also allows him to usefully clarify Ellul's statements regarding technological determinism and human freedom. Whereas Ellul sometimes seems to think there is nothing human beings can do at this point, as when he baldly suggests perhaps either divine intervention or catastrophic global war are the only events that could save us from technological slavery or annihilation; in other places, he exhorts us to transcend our conditions with acts of freedom. Skrbina synthesizes this possible contradiction by offering a kind of compatibilist view: the Logos operates everywhere, including in and through us, such that we are part of it and have some real measure of freedom. "The

Determinism vis-à-vis the Pantechnikon

Employing Skrbina's thesis of the Pantechnikon, we can look at technology anew. In clear contra distinction to Ellul and most 'dark green' ecological views, Skrbina asserts that there is no substantive ontological distinction between pre-industrial and post-industrial technology, nor is there any real difference between human artifice and organic nature for Skrbina, who is a thoroughgoing meta physical monist, everything in reality is unary at its deepest level, and these apparent differences are mere vanities, nothing but human social constructions projected onto Nature. All of Nature participates in techné, whether it is a spider building a web, organic life evolving new species, mountains arising from the collision of tectonic plates, or humans constructing skyscrapers "Technology is embodied logos. All creation, in fact, is a reification of mind."

Skrbina's Pantechnikon thesis is further a kind of synthesis of Ellul's critical analysis with that of the famous German philosopher Martin Heidegger's metaphysical speculation on technology, exemplified in his essay "The Question Concerning Technology." Where as Skrbina's critique of Ellul is that he was almost purely empirical and insufficiently metaphysical in his analysis, his critique of Heidegger is just the opposite. Skrbina excoriates Heidegger for being overrated in the history of philosophy, somewhat unoriginal, willfully obscurantist, ecologically ignorant, and defeatist yet still crucially correct in recognizing that the phenomenon of human technology discloses something profound to us about the structure of Being. With his famously idiosyncratic language, Heidegger discusses the emergence of new entities into reality as Entbergen ('Revealing') or Anwesen ('Presencing'), conveying the subtle notion that all apparently non-existent things seem nonetheless to exist in potentiality, latent and waiting to emerge until Being reveals them to us through aletheia, the disclosure of truth. In a way that is at once both quotidian and profound, reality greets the existential human subject: "It is almost as if the veil of the cosmos quietly parts, and there on the stage something new appears. before us, " Modern technology, for Heidegger, is a kind of aggressive perversion of this natural process whose essence he

of stepwise natural selection comes to occur within the technosphere. Because "every invention calls for other technical inventions in other domains," Ellul asserts that technical progress will develop exponentially, and that it will essentially never reverse outside of civilizational collapse.

A second key feature of Ellul's technological determinist thesis is what he calls the *monism* of technology, touched on earlier in this piece. One of the boilerplate counter-arguments to a thoroughgoing Luddite thesis goes something like this: *You are right to say that technology causes a lot of problems, but it also provides many clear benefits – what we need is not reactive Luddism, but instead the development of 'appropriate technology' that allows us to take the best and steer clear of the worse.* Ellul flatly replies that modern technology is so interrelated in function and interdependent in production that one cannot simply separate 'good' from 'bad' technology. Even if a society could somehow be rationally planned from the center, it could never have a pick-and-choose 'technological catetarianism' because of the inextricability of so many technological forms, supply chains, and production processes from one another. For example, the progressive delusion of 'green energy' is laid bare when one considers that solar panels and wind turbines depend on highways, trucking, metallurgy, plastics, and mineral extraction, and thus they in fact always assume the use of petrochemicals and rare earth mineral processing, both of which produce toxic wastes. ON the longer view, both of these ultimately depend on the military conquest of various territories and therefore a military and bureaucratic apparatus with all of its attendant social, logistical, and technical systems. In a phrase, one cannot, Ellul notes, have nuclear power without also having the nuclear bomb. "Learning how to use 'rightly' or 'do good' with such and such a technique does not much matter, since each technique can only be interpreted within the ensemble. If technique is a milieu and a system, the ethical problem can only be posed in terms of this global operation. Behavior and particular choices no longer have much significance. What is required is thus a global change in our habits or values, the rediscovery of either an existential ethics or a new ontology."

The third of several other key attributes Ellul highlights is what he calls *automatism of choice*, the point at which “the technical movement becomes self-directing [...] The human being is no longer in any sense the agent of choice.” In spite of Ellul's hyperbole, individual human beings of course never *entirely* lose their agency so long as they are in fact human; but Ellul's point is nonetheless highly significant in that technological advance tends to create “the one best way” to accomplish some goal, such that going against it will attract social opprobrium as the dissenting Luddite is seen as “criminal and antisocial.” One can again venture off from Ellul's framing and view this dynamic in a game-theoretic manner: if one's ecology shifts such that more and more of the social structure is organized around new technologies, one increasingly has fewer and weaker rationally self-interested choices outside of opting into those new technologies. When the automobile was first invented, it was an extravagant plaything of the affluent that a dissident individual could ignore and even freely disdain. But soon city planning came to accommodate it, occupations came to expect it, and the force of the United States federal government backed it by implementing the interstate highway system – and now even dissident breakaway societies like the Amish have difficulty opting out of cars entirely. Confinement of choice is yet worse when it comes to human individuals or groups coming into contact and potential conflict with one another, as Ellul brutally describes that the supremacy of potentially more efficient means creates constant Prisoner's Dilemmas: “The individual is in a dilemma: either he decides to safeguard his freedom of choice, chooses to use traditional, personal, moral, or empirical means, thereby entering into competition which a power against which there is no efficacious defense and before which he must suffer defeat; or he decides to accept technical necessity, in which case he will himself be the victor, but only by submitting irreparably to technical slavery. In effect he has no freedom of choice [...] In the face of the psychological outrages of propaganda, what reply can there be? It is useless to appeal to culture or religion. It is useless to educate the populace. Only propaganda can retort to propaganda, or psychological rape to psychological rape.” We are here reminded of Fredy Perlman's observations of the spread of his titular Leviathan, the technological, warmongering State that expands and

molecules. As the Classical Greek philosophers Skrbina admires - the Platonists, the Stoics, and the pre-Socratics recognized life like properties even in nonorganic substances, we should perhaps be unsurprised that the Cosmos seems teleologically predisposed not only to produce material order, but also to create beings with increasingly complex consciousnesses. To quote his summary at length,

“Technê-Logos drives evolution forward, creating order, complexity, and intelligence along the way. Like gravity, thermodynamics, and quantum physics, it is a constant of the universe - a natural law that in no sense depends upon human agency. It gave rise, in fact, to humanity and human agency [...] it is a universal bias toward value, order, and 'the better.' It operates as a law of nature perhaps the fundamental law of nature [...] This fact is no more mysterious than that gravity seeks to pull all masses together or that the second law of thermodynamics seeks to maximize randomness. All laws are teleological in this sense. None of these forces acts unopposed, and they all win and lose at various times and under various conditions. Over all, though, the striving for order the realization of Logos is the dominant force in nature. In the long run, order prevails in the cosmos. The universe is a Panteknikon [...]"

Skrbina's metaphysical picture, then, is one alternately fascinating and frightening, being quite likely alien to modernist materialists, traditional religious believers, and postmodern deconstructionists alike. From the point of view of a more bhaktic conception of theism, Skrbina's Logos looks rather cold or hostile and far too pantheistic, while for the often metaphysically confused modernists and nihilists it smells far too much like God. But his conception would probably have met with approbation from Friedrich Nietzsche, whom Skrbina references often with approval: typically mistakenly called a materialist, Nietzsche in fact wrote, "the innermost essence of Being is will to power" and, elsewhere, "The world seen from within [that is, as it is in itself, as a unified subject...] would be 'will to power' and nothing else." The will to power, in Skrbina's view, is the will to growth, order, and self-transcendence that pervades all of reality.

Approvingly referencing the Stoics, he writes, "Energetic fire [a Stoic term emphasizing the fluidity of matter-energy] is the material reality, Logos the guiding mind, and technê the process by which all things are formed [...] The world sphere can therefore rightly be called a Panteknikon: an all-technê, a material unfolding of universal reason." The Logos for Skrbina is therefore a kind of World Soul, an all-pervading intelligence that is "no distant puppet master pulling the strings," but entirely immanent, and the unfolding of the universe is the realization and reification of its thought. The implication, then, is that the universe is directional, teleological, "Creation [...is...] heading some where [...] toward ever-greater order, structure, and coherence [...] the cosmos is a self-transcending thing.'

This thesis initially may strike some readers as far-fetched. But drawing on the work of astrophysicist Eric Chaisson, Skrbina points toward a grand cosmic evolution in which reality is increasing in energy density. "In its roughly 14 billion years of existence, the universe has undergone a steady overall progression from a state of highly concentrated and undifferentiated energy through phases of continuous (but non linear) expansion, concomitantly with a steadily growing material complexity." Beginning with elementary particles, the Cosmos has since manifested nebulae, stars, planets, atmospheres, life, and finally complex societies and their artifacts. "All complex, dynamic structures in the universe [be they organic or inorganic], are related by their need to process energy." Anything that maintains or develops its own structure, anything self-organizing or autopoietic, must take in energy from its surroundings, process it in some way, and excrete some form of waste. The kicker of Chaisson's thesis is that this increase in energy flux density is exponential: the universe is tilted toward the production of order and complexity and has been producing it at an accelerating rate since the Big Bang. Meanwhile, at the smallest scale of time and space, Skrbina suggests quantum phenomena indicate the essentially enminded nature of Being, as Freeman Dyson, David Bohm, Alfred North Whitehead, and others have advocated. Skrbina could have further mentioned the work of physicist Jeremy England, chemist Martin Hanczyc, and others who have studied the self-organizing, evolutionary properties of non-organic

multiplies not only through invasions by also through social groups who, in attempting to resist conquest, become militarized and technologized, and thus Leviathanic themselves.

Taking the above factors into account, a simplified but illustrative example of technological determinism is that of a human social group beginning sedentary monocultural agriculture. Imagine this small human group has recently experienced foraging scarcities due to adverse environmental conditions, and they decide to address this problem by monocropping a selected grain cultivar. They clear a woodland area and regularly plough and monocrop grains, and they soon become dependent on the grain because of the reduction of foraging opportunities brought on by having cleared the land in the first place. After years of repetitive ploughing and monocropping, the soil becomes exhausted and yields are steadily decreasing. At this point, the dependent population must either intensify their land use by importing organic fertility from elsewhere or expand their land use – either way, they must gain control of new territory. If our imaginary population does not already have a dedicated military to conquer and control this new territory as well as a specialized bureaucracy to measure and administer the yields of this new territory, they will be under strong selection pressure to develop them. Leaping ahead in time, this process leads to a positive feedback loop of intensification and expansion that cascades into increasing population growth, agricultural expansion and intensification, and militarism – at every step, the society will be under game-theoretical pressure to adopt the newest technology, regardless of its cost, or risk being outcompeted by rival societies. And so the consequences will pile up and the stakes will get higher, as our imaginary society adopts fossil fuels for agricultural expansionism and military adventurism, new technologies for transportation, and increasing social specialization to account for the increasing complexity.

The Industrial Revolution as the Faustian Turn

The technophilic objector might at this point ask: *Isn't this unavoidable? Even if you are right about the problems, isn't this just basic cultural evolution? Moreover, is it not desirable to be rational and efficient when trying to accomplish something?* Ellul's answer to all of these is yes – even prehistoric humans had *technique*, according to his definition, and certainly the human journey from hunter-gatherers to classical and medieval civilizations involved the development and diversification of those techniques. But, the crucial difference for Ellul is that pre-modern civilizations kept technique subordinated to other, higher concerns – technique served life rather than life serving technique. In an example later echoed by Skrbina, Ellul considers the Classical Greeks exemplary as a society whose scientific sophistication was sufficient for heavy technical development but whose ethos disallowed it, due to the fact “that material needs were treated with contempt, that technical research was considered unworthy of the intellect, and that the goal of science was not application but contemplation [...]” An ascetic and anti-productive ethos, therefore, forestalled runaway technological development.

Everything chanced with the Industrial Revolution. For Ellul, this kairotic event was not at all inevitable, but only possible because of a confluence of unusual cultural, demographic, and economic events of such contingency that it could easily never have happened at all.

First, Ellul emphasizes that the liberal cultural shifts of eighteenth-century Europe, with their turn toward humanistic and epistemic optimism, created fertile psychological soil for technique, “The fear of evil diminished. There was an improvement in manners; a softening of the conditions of war; an increasing sense of man's responsibility for his fellows; a certain delight in life, which was greatly increased by the improvement of living conditions in nearly all classes except the artisan; the building of fine houses in great numbers. All these helped persuade Europeans that progress could only be achieved by the exploitation of natural resources and the application of scientific

Russell, among others, showed us how empiricism alone can only show us the bare differences, structures, and regularities of apparent phenomena—it cannot tell us of their intrinsic nature. For that, we need metaphysics, and Skrbina has written what is amazingly the first thoroughgoing exploration in this regard, his appropriately titled *The Metaphysics of Technology*.

What is so profound about Ellul's book is that it challenges our notion of how technology really works. Rather than an essentially neutral set of tools that can be put to any human use, Ellul shows that technology has its own implicit telos - when technology as a means accumulates in an ensemble of sufficient complexity, these means come to replace ends, such that efficiency displaces whatever preexisting values were intended with technology. Skrbina takes this even further, asking the essential question of what technology fundamentally is, which necessarily involves some discussion of what reality as a whole really is.

Panpsychism and Cosmic Evolution

Skrbina embraces a modern synthesis of Classical Greek metaphysics that walks a fine line between theism and atheism, at least as each is commonly conceived. He makes clear his disdain for theistic personalism - any conception of an anthropomorphic God as a kind of superbeing while also dismissing ontological materialism, the notion that all that exists is bare, aimless, mechanistic matter and energy. He instead argues for a monistic panpsychism. Monism, very roughly speaking, is the position that despite appearances all that truly exists is one kind of substance, entity, or process; while panpsychism is the view that quintessentially mental characteristics like subjective experience, intentionality, and rationality are ubiquitous in Nature, inhering in varying degrees and scales in all entities. Skrbina thus holds that, in spite of its apparent diversity on one level of analysis, all of Nature is ultimately a vast, unified, self-organizing system in which some level of subjectivity and directedness exists everywhere, including an overall intelligence to the whole Cosmos.

at each turn simply make the seemingly rational, harmless choices of efficiency while constructing their concentration camp society by inches. In this way, he makes a case for a variation on Arendt's "banality of evil" or the prisoner's dilemma of game theory. At times, he seems almost jeering, as though the notion of a truly malevolent, calculating elite is a necessarily naïve position. While I fully agree with Ellul that the automatism of industrial technology means that self-enslavement can result from even purely good intentions, his rhetoric at times unnecessarily exaggerates the point and obfuscates the fact that truly calculated malevolence intended to dramatically increase human subjugation does commonly occur through the conscious abuse of present technological means.

David Skrbina and The Metaphysics of Technology

A final, subtle yet profound weakness of Ellul's analysis is instructively elucidated by his intellectual heir apparent, David Skrbina. Skrbina is a professor of philosophy at the University of Michigan who has achieved some infamy from his close relationship with the "Unabomber" Theodore John Kaczynski, with whom he has maintained a long-standing written correspondence and for whom he edited and helped to publish a book.

Skrbina approvingly embraces Ellul's analysis of technique as a devastating critique of runaway technology's effects on virtually every sphere of human life - the nature and meaning of labor, ecology, aesthetics, spirituality, sociality, and human freedom but he points out that Ellul is inadequate in his exploration of what technology fundamentally is in and of itself. Ellul leads us thoroughly along a survey of how and why a variety of social, psychic, and ecological events can be explained in terms of technique, but his primarily empirical account ends up being, as Skrbina approvingly quotes Albert Borgmann, a critic of Ellul, "its own unexplained explanation." Ellul has described the technological phenomenon from the outside, as an accomplished empiricist, but he has not explained it from within he has not plumbed technology's nature. The British philosopher Bertrand

discoveries." Deism, ontological materialism, and skepticism had done considerable work to erode the panentheistic belief of Medieval and Renaissance Christianity that the physical world of our everyday experience, Nature itself, is a theophany or deific emanation, suffused with Divine immanence and thus full of inherent purpose and symbolic meaning; such a belief had entailed taboos that "the natural order must not be tampered with and anything new must be submitted to a moral judgment – which meant an unfavorable prejudgment [...] technique was held to be fundamentally sacreligious. With the slow wiping away of this view, gradual to a human lifespan but a dramatic break with what nearly all humans had heretofore believed, the world for many Northwestern Europeans had by then come to seem brute matter, pure object, perhaps ordered and set in motion originally by a remote watchmaker Deist God, but since left to its own devices as an autonomous clockwork assemblage of tiny material bits. This belief structure "did indeed favor technical applications. It was naturalistic and sought not only to know but also to exploit nature. It was utilitarian and pragmatic. It concerned itself with easing human life, with bringing more pleasure into it and simplifying its labor. For the eighteenth century, man's life was narrowly confined to the material; it seemed evident that the problem of life would be resolved when men were able to work less while consuming more.

Besides this cultural and attitudinal shift, a number of idiosyncratic circumstances aligned to allow the Industrial Revolution to occur: the population was growing, "entail[ing] a growth of needs which cannot be satisfied except by technical development"; the economy was stable enough to enable growth but not too rigid so as to resist innovation; and, crucially, society was becoming atomized. It is difficult at our juncture in the contemporary West to imagine a society organized by extended kinship groups, religious organizations, professional guilds, and other organs of civic society that altogether enabled "the individual [to find] livelihood, patronage, security, and intellectual and moral satisfactions in collectives that were strong enough to answer all his needs but limited enough not to make him feel submerged or lost. They sufficed to satisfy the average man who does not try to gratify imaginary needs if his position is fairly stable, who opposes innovation

if he lives in a balanced milieu, even though he is poor. This fact, which is so salient in the three millennia of history we know, is misunderstood by modern man, who does not know what a balanced social environment is. In Europe's world-historical Age of Revolution (late 18th to mid-19th century), "a systematic campaign was waged against all natural groups, under the guise of a defense of the rights of the individual [...] The individual remained the sole sociological unit, but, far from assuring him freedom, this fact provoked the worst kind of slavery." This breakdown of ancient social bonds gave society the plasticity necessary for technical innovation, as humans were dislocated sufficiently to become fungible workers, the 'human resources' we moderns know so well: "To uproot men from their surroundings, from the rural districts and from family and friends, in order to crowd them into cities still too small for them; to squeeze thousands into unfit lodgings and unhealthy places of work; to create a whole new environment within the framework of a new human condition [...] all this was possible only when the individual was completely isolated."

Ellul thus has a grim view of the revolutions that ushered in modernity in its full sense. By contrast with his assessment of Classical Greece, the iconically liberal French Revolution is for Ellul an utter disaster, not simply because of *la Terreur*, but because of its creation of the modern, bureaucratic, administrative state that *both* employs technique to dominate humans like never before *and* drives technical development far above social stability – 'they saw the possibilities of drawing huge profits from this system, especially as they were favored by the crumbling 'of morals and religion' and felt themselves free, in spite of the idealistic smoke screen they raised, to exploit individuals.'" Ellul therefore astutely recognizes that the technical liberal state – whatever its professed ideals, its continual erosion of taboos, its relative permissiveness in certain respects – is far more repressive than the monarchical chiefdom that is deprived of technical teeth and class, a lesson that later Luddites like Theodore Kaczynski, John Zerzan, and David Skrbina would take to heart. Once the coercive powers of Leviathan have melded with modern technique, technological determinism is all but fully locked into place.

Taken altogether and with only modest oversimplification, Ellul's thesis might be succinctly stated thusly: the various interlocking factors of technological determinism mean that post-industrial technology is an all-or-nothing phenomenon; we will have totalizing technical transformation up to and including the invasion of the human body and its eventual replacement, or we will have a pre-modern/pre-industrial level of technology; you cannot choose a stopping point along the way.

Evaluating The Technological Society

In spite of its length and density, Ellul succeeds in creating a gripping book. He writes with intensity, driving points being made on nearly every page. One senses in the urgency of the author a man who feels profound pain witnessing a world being devoured all around him by the tyranny technique, and who has a genuinely spiritual anarchist concern with human freedom and dignity. I hence found myself mostly nodding along with Ellul and discerned only a few weaknesses in the book.

First, Ellul's language in dealing with either technological pseudo-critics or *bien pensants* is often amusingly and deservedly harsh, but he occasionally strays into caustic hyperbole, invoking another thinker only to swiftly condemn their ideas due to their ostensibly misunderstanding a crucial point without his either quoting, citing, or even really describing their take on things. This might have been fine and well for Ellul's contemporary intellectual milieu-who, one imagines, could perhaps fill in the blanks themselves but the uninitiated are left to simply take Ellul's word on the apparent ineptitude and irrelevance of his rivals. I have noticed this problem with many French thinkers of this period, who seem to assume familiarity with *la littérature* ought to be a prerequisite for engaging with any book.

Secondly and more importantly, Ellul repeatedly makes the point that his nightmarish technological determinism does not require malevolent intentions on the part of either the power elite or the technocratic managerial classes, and that indeed every person might