

Eppur si muove (and yet it moves): revisiting Jacques Ellul's thesis in *The Technological Society* and a critical, hopeful consideration of what's ahead

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While Tesla's responsible sourcing practices apply to all materials and supply chain partners, we recognize the conditions associated with select artisanal mining (ASM) of cobalt in the DRC. To assure the cobalt in Tesla's supply chain is ethically sourced, we have implemented targeted due diligence procedures for cobalt sourcing.¹

A book like Siddharth Kara's *Cobalt Red: How the Blood of the Congo Powers our Lives* documents what happens when Jacques Ellul's premonitions in *The Technology Society* are validated over the course of seventy years. Namely, the dialectical relationship of technique and capital will, if unchecked, generate the ruin of 'civilization' and the earth as we, a technologically globalized world, currently experience it.

The Kipushi artisanal mining area was located in an open swath of earth just south of the abandoned Gécamines pit. It was a vast lunar wasteland spanning several square kilometres—a bizarre juxtaposition to the advanced KICO mining compound sitting right next to it. KICO had first-world mining equipment, excavation techniques, and safety measures. The artisanal site seemed to be time-warped from centuries before, populated by peasants using rudimentary tools to hack at the earth. More than three thousand women, children, and men shovelled, scraped, and scrounged across the artisanal mining zone under a ferocious sun and a haze of dust. With each hack at the earth, a puff of dirt floated up like a spectre into the lungs of the diggers.

As we walked along the periphery of the site, [my guide] Philippe reached down and handed me a stone about twice the size of my fist. "Mbazi," he said. Heterogenite. I studied the stone closely. It was dense with a rugged texture, adorned with an alluring mix of teal and azure, speckles of silver, and patches of orange and red—cobalt, nickel, copper. This was it. The beating heart of the rechargeable economy. Heterogenite can come in the form of a large stone, such as the one Philippe handed to me, or as smaller pebbles, or weathered down into sand. Cobalt is toxic to touch and breathe, but that is not the biggest worry that the artisanal miners have. The ore often contains traces of radioactive uranium.²

¹ "Tesla's Conflict Minerals Report," filed with the Securities and Exchange Commission to comply with the reporting period for the calendar year ended December 31, 2018. Accessed June 7, 2024, 6. <https://www.tesla.com/sites/default/files/about/legal/2018-conflict-minerals-report.pdf>

² Siddharth Kara, *Cobalt Red: How the Blood of the Congo Powers our Lives* (New York: St. Martin's Press, 2023), 52.

There are numerous ways to summarize Ellul's thesis in *Technological Society* and we have and will encounter many helpful summaries of it at this conference. However, one small sentence in the final chapter of this text encapsulates quite well what Ellul warned readers about in 1954. "Here," he writes in "A Look at the Future," "Is a future Huxley never dreamed of."³ The author of *A Brave New World* envisioned a *fictional* future with a technologically engineered caste system of higher and lower intelligences. In contrast, the Nobel Prize winning geneticist Herman Joseph Muller dreamt of an *actual* technologically designed future occupied only by humans with a "practically invincible level of superiority."⁴ Further, Muller wrote a letter to Josef Stalin outlining what it would take for the USSR to get there.⁵

Apparently, non-fiction can be stranger, and more technologically and eugenically fascist, than fiction.

As chilling as such imagined futures are to encounter in the writings of a Nobel Laureate like Muller, Ellul advises us to pause, and reflect with sober realism. For, he writes, "A question no one ever asks when confronted with the scientific wonders of the future concerns the interim period"⁶—or, what would be required for the world to transition from 1954 when *Technological Society* was written, to Hermann's imagined future. The requirement would be an unconscionable amount of human, animal, and terrestrial sacrifice that ought to prompt us to ask "if we will succeed in getting through the transition period at all, or if the blood and suffering required are not perhaps too high a price to pay for this golden age."⁷ Indeed, it often is not the end, but the way in which we move towards the end, that ought to concern us the most.

Most people do not know what is happening in the cobalt mines of the Congo, because the realities are hidden behind numerous layers of multinational supply chains that serve to erode accountability. By the time one traces the chain from the child slogging in the cobalt mine to the rechargeable gadgets and cars sold to consumers around the world, the links have been misdirected beyond recognition, like a con man running a shell game.⁸

³ Jacques Ellul, *The Technological Society*, trans. John Wilkinson (New York: Vintage Books, 1964), 433.

⁴ Ibid., 432-433. The full quote is, "In the domain of genetics, natural reproduction will be forbidden. A stable population will be necessary, and it will consist of the highest human types. Artificial insemination will be employed. This, according to Muller, will 'permit the introduction into a carrier uterus of an ovum fertilized *in vitro*, ovum and sperm... having been taken from persons representing the masculine ideal and the feminine ideal, respectively. The reproductive cells in question will preferably be those of person's dead long enough that a true perspective of their lives and works, free from all personal prejudice, can be seen. Such cells will be taken from cell banks and will represent the most precious genetic heritage of humanity... The method will have to be applied universally. If the people of a single country were to apply it intelligently and intensively... they would quickly attain a practically invincible level of superiority.'" There is no citation given, and I cannot find the source article despite extensive searches. Muller's letter to Stalin, however (cited in the next footnote), captures the essence of his proposal.

⁵ Joseph Herman Muller, "1936 Letter to Stalin," *The Mankind Quarterly* 43 (3), Spring 2003, pp. 305-319.

⁶ Ellul, *Technological Society*, 433.

⁷ Ibid., 434.

⁸ Kara, *Cobalt Red*, 52.

What concerns me in this essay is the interim period Ellul foresaw in *Technological Society*, what Kara's book *Cobalt Red* reveals, and how bringing these two texts into dialogue shows us that we are in this interim period; a moment in which the technique and capital dialectic described earlier produces disparities so wide, and so damaging, that (1) exploited 'developing nations' are forced to make unacceptable sacrifices to power damnable 'developed nations,' and (2) this phenomenon apparently will not cease until the earth's life-bearing capacities are exhausted, and the lifeforms deemed unfit for existence by people in 'developed nations' will disappear into extinction.

With this in view, it may not be the case that genetic engineering is needed to exterminate 'inferior' people so 'superior' people can thrive.

It may be that the supply chains generated by the brand of techno-capitalism exhausting our world will perform the extermination without having to directly hack or tweak any DNA.

If it is not clear at this point, let me put it plainly: I think Ellul's thesis in *Technological Society* retains its validity seventy years later, and I believe we ignore it at our macro- to micro-level peril. As Ellul urged, so ought we to urge anyone who will listen, "Consider [the] problems of automation, which will become acute in a very short time. How, socially, politically, morally, and humanly, shall we contrive to get there? How are the prodigious problems, for example, of unemployment to be solved?"⁹ Ellul answers these questions in the following way:

There are many other "hows," but they are conveniently left unformulated. When we reflect on the serious although relatively minor problems that were provoked by the

⁹ Ellul, *Technology Society*, 433. Although it is possible to view recent developments in what is commonly called *artificial intelligence* (AI) as an indication that Ellul's thesis no longer retains its validity, I think AI (which I prefer to call *machine learning* because I think this is a more accurate description of this kind of technology) is better conceived as a critical stage in technique's evolution. AI represents an attempt to completely 'outsource' the rational process of technique to machines. But even if we *could* outsource our thinking to machines, *I do not think we should*. Here is why. On page 429, we see Ellul contemplating the possibility of "thinking machines," and in later works like *Technological System* and *Technological Bluff*, he continues to analyze the development of artificial intelligence theory and practice. Examples are chapter four in *Technological System* and chapter eight in *Technological Bluff*. In each of these texts, Ellul expresses skepticism about it being possible to reach a point where machines *actually* become intelligent. As he writes on page 168 of *Technological Bluff*, "Human thought feeds on our experience of life as we register and interpret it. Imagination, fantasy, myth, intuition, and experience transform themselves into thought. Computers can imitate the human brain, but the human brain is not a separate entity—it is a part of a body. The experiences of this body provokes the reactions of the brain and set the rational process going in one or another direction... Computers do not have the dreams or fears or desires that feed and simulate human thought. That is why they may imitate one of the operations of the brain, but no more." Or, more simply on page 167, he submits, "The more thought refers to life, the less accessible it is." This is why he concludes the following on page 114 of *Technological System*, "I realize I may be asked: 'But what if man can develop all his potentials through technology, what more do you want?' A tough question to answer. How can we point out that highly technicized sex is not love? That playing with complex or fascinating apparatuses is not equivalent to a child's playing with bits of wood? That the nature reconstituted by technology is not nature? That functionalized nonconformity is not existential? In other words, that all those things make us live in a universe of facticity, illusion, and make-believe." So, again, even if Ellul is wrong and we can produce actual artificial intelligence, I think it should never be done because it would deal a devastating blow to that which makes us human: love, play, water, air, soil, and what appears to be a singular existential character unique to humans.

industrial exploitation of coal and electricity, when we reflect that after a hundred and fifty years these problems are still not satisfactorily resolved, we are entitled to ask whether there are any solutions to the infinitely more complex “hows” of the next forty years. In fact, there is one and only one means to their solution, a world-wide totalitarian dictatorship which will allow technique its full scope and at the same time resolve concomitant difficulties. It is not difficult to understand why the scientists and worshippers of technology prefer not to dwell on this solution, but rather to leap nimbly across the full and uninteresting intermediary period and land squarely in the golden age.¹⁰

More, less, or no peril at all, true hope that will save us from this terrifying predicament will not be found in more technique and more capital. It will be found in less of both, which can be inspired and guided here and now by our collective “regard [for] the gallop of the white horse through human history as it also makes this history.”¹¹ This White Horse and its Rider is revealed in Revelation 6, of which and of whom Ellul writes, “The white horse, who is sent into the world, who departs first, who is the bearer of life and covenant, is the Word of God.” And, “I would say that there is, from one aspect, he who is sacrificed/risen, his work accomplished once and for all in a moment of history; from the other, he who is the Word, and who continues without ceasing to act in the course of history.”¹² These are, of course, inspiring words to read. But where is the White Horse and its Rider today? How might we see them running through history, and if we can see them sprinting, will it be made clear to us they are making the present and the future *better* and not *worse*?

When we truly grasp how awful our moment in history can be, and what that apparently means for the present and future, it has to be said that it is difficult, very difficult, to see and believe this White Horse and its Rider exists, and exists for good. This, I would submit, is why Ellul’s mid-life crisis generated an apocalyptic theology of hope, represented by texts like *Hope in Time of Abandonment*. For, only when *all* false hopes fall to the ground in ruin will true hope bloom out of the blood and water soaked dirt at the foot of The Cross on The Place of the Skull (John 19:17-37). Only then will the hoofbeats of the White Horse and its Rider be heard clearly in the past, present, and future.

I asked Priscille how long it took her to fill one sack with the sand. “If I work very hard for twelve hours, I can fill one sack each day,” she replied. At the end of the day, the women helped each other to haul their fifty- kilogram sacks about a kilometer to the front of the site where négociants purchased each from them for around \$0.80. Priscille said that she had no family and lived in a small hut on her own. Her husband used to work at this site with her, but he died a year ago from a respiratory illness. They tried to have children, but she miscarried twice. “I thank God for taking my babies,” she said. “Here it is better not to be born.”¹³

¹⁰ Ibid., 433-434.

¹¹ Jacques Ellul, *The Subversion of Christianity*, trans. Geoffrey W. Bromiley (Grand Rapids: Eerdmans Publishing, 1986), 212.

¹² Jacques Ellul, *Apocalypse: The Book of Revelation*, George W. Schreiner (New York: Seabury Press, 1975), 158.

¹³ Kara, *Cobalt Red*, 56.

And yet... *Eppur si muove* (yet it moves), the seemingly endless dialectical movement of technique and capital continues to produce power and wealth for some and hopelessness and painful sacrifice and for many.

Will this dialectic ever cease?

One way or another, it will.

What and who we have on earth are not inexhaustible—even though too many people on earth continue to live as if they are.

Further, in the introduction to *Technological Society*, Ellul considers three possible events that could stop the dialectic before total exhaustion of the earth's life-bearing capacities does. Those are,

- 1) If a general war breaks out, and if there are any survivors, the destruction will be so enormous, and the conditions of survival so different, that a technological society will no longer exist.
- 2) If an increasing number of people become fully aware of the threat the technological world poses to man's personal and spiritual life, and if they determine to assert their freedom by upsetting the course of this evolution, my forecast will be invalidated.
- 3) If God designed to intervene, man's freedom may be saved by a change in the direction of history or in the nature of man.¹⁴

Given *Technological Society* is a sociological work, Ellul does not explore these possibilities. However, elsewhere, in his theological-ethical works, he does. For example, in *Subversion of Christianity*, he writes: "If I believe that the Holy Spirit is present in the church, in every Christian life, and if I believe that he acts through us. Then it seems to me that the Bible gives him three characteristics. First, he marks a limit, a stopping-point. Second, he is very discreet and secret; he cannot be seized, but is like the wind, which we hear but cannot say where it comes from or where it goes to. Finally, this leads us to treat him as a trespasser."¹⁵ I cannot say with certainty such theology and ethics would cause Ellul to conclude some or all of the possible disruptions to the technique and capital dialectic described in the introduction to *Technological Society* (war, human-led resistance, and/or divine intervention) will come to fruition, but it can be wagered that he—and I along with him—consider it a *strong* possibility. Whatever comes, though, the critical question to ask at this point is the following: where ought we to locate our hope today, and how might that hope help us to properly locate the movement of the White Horse and its Rider in the past, present, and future?

Personally, I hope for a combination of the second and third possibilities: divine intervention, and non-violent, human-led disruption of the technique and capital dialectic. But I stress the word *hope* here because I am *hopeful* and not optimistic. The wars being waged in Ukraine and Palestine as I write this, and other wars that may and probably will come given what Jesus

¹⁴ Ibid., xxx.

¹⁵ Ellul, *Subversion of Christianity*, 195.

said in Matthew 24:3-7, weaken my optimism and demand my hope.¹⁶ Yet, even if more war comes, those who call themselves *Christian* ought to have in view what Ellul has in view:

There still remains an element of truth, the smoking flax that is not quenched (Isaiah), little faith that still persists (Revelation). Hence when the moment of decision comes, the moment of the back to the wall, of the radical proof, of the tempest, then there is always the possibility that the wick will flare up and set the whole alight again, just as there is also the possibility that it will go out altogether. I would say that the traditional and superstitious believers can give birth all at once to confessors of the faith, to martyrs, to people who know that in a Christians may be summoned to be such in the full sense.¹⁷

And if we are looking for the White Horse and its Rider in this historical moment, if we are looking for some semblance of tangible and true hope, I am led to believe that we ought to be looking among the faithful who are martyred by technique and capital. This, according to Matthew 25:31-40, is where the hooves of The White Horse can be heard striking the ground of blood soaked soil in places like the Democratic Republic of Congo.¹⁸

*A lone girl stood atop a dome of dirt, hands on her hips, eyes cast long across the barren land where giant trees once ruled. Her gold-and-indigo sarong fluttered wildly in the wind as she surveyed the ruin of people and earth. Beyond the horizon, beyond all reason and morality, people from another world awoke and checked their smartphones. None of the artisanal miners I met in Kipushi[, in the Democratic Republic of Congo] had ever even seen one.*¹⁹

¹⁶ “When [Jesus] was sitting on the Mount of Olives, the disciples came to him privately, saying, ‘Tell us, when will this be, and what will be the sign of your coming and of the end of the age?’ Jesus answered them, ‘Beware that no one leads you astray. For many will come in my name, saying, ‘I am the Messiah!’ and they will lead many astray. And you will hear of wars and rumours of wars; see that you are not alarmed; for this must take place, but the end is not yet. For nation will rise against nation, and kingdom against kingdom, and there will be famines and earthquakes in various places: all this is but the beginning of the birth pangs.” Such are one of the “hard sayings” of Jesus that I acknowledge as disturbingly hard, and which leads me to conclude that I can only turn, and cling, to God with hope in the way Revealed by Jesus in John 15.

¹⁷ Ellul, *Subversion of Christianity*, 205.

¹⁸ “When the Son of Man comes in his glory, and all the angels with him, then he will sit on the throne of his glory. All the nations will be gathered before him, and he will separate people one from another as a shepherd separates the sheep from the goats, and he will put the sheep at his right hand and the goats at the left. Then the king will say to those at his right hand, ‘Come, you that are blessed by my Father, inherit the kingdom prepared for you from the foundation of the world; for I was hungry and you gave me food, I was thirsty and you gave me something to drink, I was a stranger and you welcomed me, I was naked and you gave me clothing, I was sick and you took care of me, I was in prison and you visited me.’ Then the righteous will answer him, ‘Lord, when was it that we saw you hungry and gave you food, or thirsty and gave you something to drink? And when was it that we saw you a stranger and welcomed you, or naked and gave you clothing? And when was it that we saw you sick or in prison and visited you?’ 40 And the king will answer them, ‘Truly I tell you, just as you did it to one of the least of these who are members of my family, you did it to me.’”

¹⁹ Kara, *Cobalt Red*, 58. Not only does this passage remind me of Matthew 25, I also see remarkable resonances with Ruth 2.