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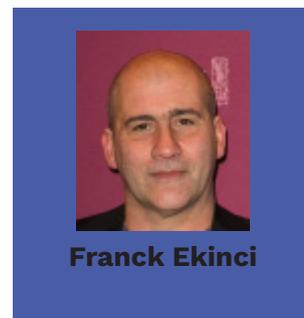
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Energy utopias and dystopias: History and science fiction

Franck Ekinci is the co-author of *Avril et le monde truqué* [April and the Extraordinary World], an animated film that imagines late nineteenth and early twentieth-century history without electricity.¹ What kind of society would have been built if electrification had not taken place? The question echoes the research of the historian Charles-François Mathis (Université Bordeaux Montaigne), which explores the debates and reflections on the future of energy that characterized late nineteenth-century British society, with a focus on the notion of "king coal."²

At the initiative of JEHRHE, Franck Ekinci and Charles-François Mathis remotely familiarized themselves with each other's research, before responding to our questions and exchanging their points of view.



¹ Christian Desmares and Franck Ekinci, *Avril et le monde truqué*, 2015, 105 minutes.

² Charles-François Mathis, "'Renverser le roi Charbon.' Imaginer la transition énergétique en Grande-Bretagne, 1865-1914" ["'Overthrowing King Carbon': Imagining the Energy Transition in Great Britain, 1865-1914"], in Yves Bouvier and Léonard Laborie (eds.), *L'Europe en transitions. Énergie, mobilité, communication XVIII^e-XXI^e siècles* [Europe in Transitions: Energy, Mobility, and Communication, 18th-21st Centuries] (Paris: Nouveau Monde, 2016).

The film *April and the Extraordinary World* is often presented as retrofuturist. It takes place in the past, but in a future of that past that did not come to be. Historians are now working on past imaginaries of the future as well, notably through science fiction. What makes the duo of history and science fiction so fertile?

CFM: First, their combination can reveal a history between the lines: exploring science fiction narratives is one way, among many others, to penetrate a period's way of thinking, to discover the anxieties that agitated contemporaries and perceive the imaginaries that preoccupied them. In this way we also capture history as it unfolds in all of its complexity, by banishing any sense of determinism and rediscovering possible events that didn't occur, and by exploring these failures. This is what makes counterfactual history interesting (see the fine analysis by Pierre Singaravélou and Quentin Deluermoz, *Pour une histoire des possibles. Analyses contrefactuelles et futurs non advenus* [For a History of Possibles: Counterfactual Analyses and Alternate Futures] Paris, Seuil, 2016): asking "what if..." makes it possible to evaluate the impact of a particular generally agreed causality, and to restore a role to contingency. In short, it's a way of freeing oneself from the weight of an irremediable past, which leads us in a single direction despite our best efforts. What I find interesting in the film is the choice to freeze the world in 1870, notably through the disappearance of all scientists, and to then draw the geopolitical consequences: an oppressive police state, constant threats of war connected to energy constraints, etc. This quite accurately emphasizes the fact that energy choices are inscribed within a system that is simultaneously technical, social, political, economic, etc. I also feel that the film explores the role of scientists: they're the only ones that can imagine new ways forward for energy, yet until the nineteenth century technical innovation proceeded especially through experimental trial and error on the part of engineers and non-professionals. The role of scientists did indeed increase during the nineteenth century, yet were they the only possible factor for progress?

FE: Yes, science fiction, including science fiction about the past, naturally explores the present. Depending on our culture, standard of living, and

personal desires, we are all (more or less) unsatisfied with our current world to varying degrees. As a result, it can be comforting to imagine the unfolding of an alternative course of history, one that replaces the present with a more suitable standpoint.

Then on a personal level, while I of course appreciate the technological benefits of the early twenty-first-century, the speed at which they occur and the deluge of information and solicitations (and even injunctions) that flows from them is disconcerting, if not frightening. The notion of taking a break—that the world should experience a temporary stasis for more time (ethical and technical) to appropriate these upheavals—is subsequently attractive. The film broaches this aspiration in a very indirect manner.

FE: Science fiction has frequently used "real" history to drive narrative, notably in its dystopian and uchronian branches. I'm of course thinking of Philip K. Dick's *The Man in the High Castle* (the Axis powers won the Second World War), Norman Spinrad's *The Iron Dream* (frenzied fiction supposedly written by Hitler), Gibson and Sterling's *The Difference Engine* (steam-powered Babbage computers change the world beginning in the nineteenth century), among others. That said, it's difficult for me to determine what motivated these different authors, and to therefore respond more generally to the fertile relation between history and science fiction. I can only express my own desires while co-writing the script with Benjamin Legrand. Firstly, in terms of facts, having base material that is real and familiar to all (or at least supposed to be) naturally helps lend plausibility to an imaginary account. The choice of period that is explored in the film grew out of the following considerations:

- The nineteenth century and the first half of the twentieth contained an explosion of discoveries and inventions, whose scientists remain

famous today; on the contrary, researchers today are mostly unknown, with a few rare exceptions. The science of today is more anonymous, and massively handled by tens of thousands of specialists with the support of computer science (Big Data, high-speed calculation). Even when presented fleetingly, these major figures from the past personify science for the spectator with greater ease.

- It was also a matter of presenting identifiable pivotal moments in time that can be identified by a viewer with an “average” historical culture, one that is for instance supposed to have heard about the French-German wars and Napoleon III, and therefore to be capable of deducing that a Napoleonic Empire in 1941 is strange indeed...

Then, like many people (I suppose) when they think of history, I often wonder: what would have happened “if”? For example, if humanity had possessed certain inventions earlier? The technology needed for nineteenth-century inventions was available well before. We could hear the voice of Louis XIV and examine his real portrait (phonograph and photography). What if the Roman Empire had succeeded in enduring a few centuries longer? What if India or China had gained an advantage over the West

during the eighteenth century? And of course, what if the plots against Hitler, Stalin, or other dictators had succeeded? What if JFK hadn’t died in Dallas? And so on and so forth. At any rate, since screenplays are essentially demiurgic, they also entail a desire for playfulness, for a joy in reordering familiar events in an amusing or intriguing way.

CFM: It’s amusing that the practice of history driven by the *Annales* during the interwar period precisely sought to turn away from both major actors and event-based accounts, in order to propose an approach centered on social, economic, and demographic evolutions. Did this distance science fiction from history, and subsequently give primacy to artists, before today’s interest for counterfactual history? This would be a fine subject of study. What’s more, the nineteenth and early twentieth centuries contributed major scientific names to memory, on which the film can base itself. This is a result of the glorification of men of science, which is not new, and an acceleration of discoveries (facilitated by the new power obtained from fossil energies), along with a policy of republican exaltation celebrating its great men (and rarely its women), at least in France.

Is energy a classic topic of science fiction, and if so why?

CFM: I’m not sure about classic, but recurrent yes. It’s especially true of science fiction, because the technical aspect naturally raises questions regarding the energy that powers a particular machine. Such works offer possible judgments that are rooted in physical constraints that must be taken into consideration. We are not in the world of magic in these narratives, as Yannick Rumpala quite rightly emphasizes in his *Hors des décombres du monde. Ecologie, science-fiction et éthique du futur* [Beyond the Ruins of the World: Ecology, Science Fiction and Ethics of the Future] (Champ Vallon, 2018).

The importance of energy in futuristic novels (to broaden beyond just science fiction) is connected to the explorations underway at the time

of their writing, as was the case for writing from the turn of the twentieth century, which was particularly interested in this aspect.

FE: The context or historical moment of writing is thus crucial for grasping science fiction, a genre that is paradoxically and particularly “datable” when it engages in anticipation, thereby bearing witness to its own period as well as its speculative viewpoint. This is of course more visually striking through illustrations, comic books, and films. For example, the future according to Robida (1848–1926), along with the technology presented in *Forbidden Planet* (1956) and *Alien* (1979), inform us regarding the state of technical engineering for the periods in which these works were created. In general, the

science presented in the majority of futuristic creations is often only a projection, a small additional “leap” based on existing knowledge, and rarely a radical break.

To my knowledge, one of the rare authors who is capable of such breaks, of such genuine imaginative and scientific audacity, is Greg Egan, master of the “Hard Science” genre: *Permutation City* (virtual computer universe), *Quarantine* (thriller and quantum physics)...

FE: Among the works exploring this theme of energy in science fiction, I will call attention in particular to *Ravage* [Ashes, Ashes] by Barjavel, which I believe served as a model for numerous works exploring a subject that fascinates me, namely our civilization’s dependence on energy, and hence the thin line that separates us from a return to “Year Zero” in the event of scarcity or an accident.

I think this fragility fascinates authors a great deal. In putting ourselves within a vast historical scale, not so long ago we were hunter-gatherers fighting for survival, with no massive need of energy. It is thus understandable to think that a

series of dramatic circumstances affecting our interconnected means of energy production can take us back to that state of vulnerability, amid a hostile nature. We can only tremble at the thought of what could have happened if a few aggravating events had combined with the initial disasters of Fukushima, Chernobyl, Three Mile Island, or the massive pollution in China today, notably because of coal.

CFM: Regarding coal, I think it’s remarkable how the film presents all of the possibilities connected to coal, in an effort to depict the daily life of a society dependent on that single source (notably the superb train-cable car): it has a *logic* that captures what’s most interesting about the futuristic approach. For me there are a certain number of classic approaches that are present both here and in other narratives (perhaps because we cannot reasonably contemplate anything else?). For instance, in my opinion the luxuriant subterranean world relates to one of the first science fiction narratives, Edward Bulwer-Lytton’s *The Coming Race* published in 1871, which also imagines an omnipotent energy called Vril that greatly resembles electricity.

In the absence of electricity, the world of *April* is very darkly affected by increasing coal consumption, giving rise to environmental and geopolitical disorder. This representation is directly in line with late nineteenth and early twentieth-century discourses regarding the merits of the “electricity fairy” and progress. Were other alternate futures imaginable?

CFM: Of course. Much current research (that of Andreas Malm or François Jarrige for example) emphasizes the role of “traditional” energies during the beginnings of the Industrial Revolution. For example in textiles, which were the spearhead of industrialization, the hydraulic and animal energy used in households was entirely central. Similarly on the seas, sailing ships competed effectively with steamships until the 1860s. One could quite well imagine a world of energy efficiency—but not abundance—based solely on these renewable energies. That being said, the imaginaries that unfolded during the late nineteenth century were often based on the hope of *an* energy that would save humanity, which most of the time was electricity. It is very rare

for a *combination* of energies to be considered in ensuring the future needs of human beings. In the film it’s ultimately the discovery of oil that saves the world from scarcity.

FE: While the film is not against science, discussing instead the problems relating to its use, it is nevertheless ironic in this regard. The discovery of oil in the narrative does indeed save the world from its dependence on coal, but it’s implied that oil is a “clean and inexhaustible” energy, which sarcastically heralds future problems.

FE: Renewable energies could surely have been used. However, and this is personal, I’m rather

pessimistic. Nothing is free in our universe (entropy), and I think that we would have encountered other problems as long as we are conditioned by a desire for perpetual growth. What we subtract from nature must be repaid elsewhere. Nuclear fusion could perhaps be a solution in a few decades, but I'm very concerned about our capacity to generate disadvantages, even when we have advantages in hand.

CFM: I share the notion that this question of other usable energies cannot be handled without reference to the economical, social, and political system, and in this case to the question of growth. If we consider the (controversial, and in need of nuance) distinction made by the economic historian Tony Wrigley between an organic

system based on renewable energies and a fossil system, two modes of development emerge: one tends toward a production ceiling, thereby limiting population growth and imposing limits on prosperity, while the second breaks this ceiling by enabling continuous overall growth, or at least as long as it can rely on fossil energies. The essential question is to know whether growth and fossils can be disconnected from one another—and even, for some, whether it is even desirable for growth to continue (by thinking of other non-energy impacts). Nevertheless, those who thought in these terms at the turn of the twentieth century were very rare, with there being a few utopias of frugality. The Meadows report (*The Limits to Growth*, 1972) was still a long way off!

In what way does the current context relating to the energy transition drive your artistic and historical research?

CFM: The view of the past is often shaped by current issues, and that is especially true of the environmental history that I identify with. The simplistic approach taken toward today's energy problems is sometimes frightening, as we expect new cleaner and more efficient technologies to do everything, with little or no reflection on forms of consumption, societal choices and their political aspects, etc. Two things stand out for me: a kind of fatalism (is a future without oil and its uses possible?), and the simultaneous and rarely extinguished hope for salvation through technology. These two dimensions can be found in the United Kingdom during the late nineteenth century, and trying to better understand and study them can also shed some light on our contemporary world.

FE: The remark about works of the past being revisited from a present perspective is very interesting and topical. I'm probably digressing from the topic at hand, but it's a subject that speaks to me. While it's of course healthy to have a critical eye, in recent times there have been excesses in using a twenty-first-century moral or societal viewpoint to judge creations developed in a totally different context.

FE: I think this is more of a question for Charles-François Mathis. While science fascinates me and drives my projects, my interest in the problematics of energy is occasional, one that is inscribed in the context of a film. This doesn't mean that the topic no longer interests me, but that the most recent technological advances are a rich source of both narratives and reflections: artificial intelligence, nanotechnologies, biochemistry, quantum computing, "augmented" reality and humanity, etc.

CFM: I don't like politically engaged art, although it is undeniable that you can artistically broach certain contemporary issues, notably connected to energy, as clearly shown by this film. Today we speak of an environmental art that is in keeping with land art. For instance, the work of Chris Jordan, in his series *Intolerable Beauty* and *Running the Numbers*, denounces with great talent and effectiveness the damaging effects of waste and the consumer society.

In our (still unequally) electrified world, we consume more coal than ever. What does this observation inspire in you?

CFM: It puts electricity back in its rightful place, for we often forget that it's a secondary energy that must be produced by another energy. From its very origin, electricity was a vector of a powerful imaginary (see Alain Beltran and Patrice Carré, *La vie électrique. Histoire et imaginaire*, [Electric Life: History and the Imaginary] Paris, Belin, 2016), as both the ultimate life-saving and destructive force. In this sense it offered an antithesis to coal, which was itself supported by a powerful imaginary connected to steam, and seemed to offer incredible possibilities albeit at a high price (esthetic, health, social). The film shows this well, for it magnificently presents the costs of coal (even down to the level of a poster on a fence, "we are dying of soot"), as well as how electricity was seen as a fabulous tool, as the energy of the *future* and progress par excellence that offered independence from fossils. The subsequent coexistence of these two sources (electricity is still massively produced from fossil energies) serves both as a disillusionment and a reminder that we cannot expect miracles in matters of energy.

FE: What I find striking is that our current "hyper-technology," particularly embodied by the fact that information technology is seen (consciously or not) as clean and modern, actually depends on electricity that is partially generated from coal, which is associated with lexical terms including old energy, nineteenth century, pollution, dirtiness, mines, illnesses, etc.

FE: The collision of these two opposed worlds of coal-electricity is interesting. I live in the twenty-first century, and in conducting a Google search on the ecology of the future, I trigger a technological chain that requires (indirectly and partially, of course) the combustion of harmful plant sediments dating back millions of years ago.

CFM: That's a very accurate and interesting remark (except maybe for France, due to the extent of electricity from a nuclear source). In fact, the contemporary world still depends a great deal on networks, infrastructures, and choices that were made decades ago. The inertia of systems is clearly enormous, which makes efforts to abandon them all the more complicated.