

Social Epistemology, Environmentalism and a Proactionary Human Future: An Interview with Steve Fuller

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What follows is an interview with Steve Fuller by the [Breakthrough Institute](#), an Oakland, California-based think-tank, renown for its 'eco-modernist' take on environmental problems. An abridged version of the interview appears on their website [in two parts](#). Mark Caine, the original interviewer, posed the questions. Jenna Mukuno, Senior Editor, edited the version of the interview that appears on the Breakthrough website. We thank the Breakthrough Institute for allowing publication of the original version of this interview.

You're currently the Chair in Social Epistemology at the University of Warwick. What is social Epistemology? Can you describe your current field of study and what background you bring to the position?

‘Social epistemology’ is, as the name suggests, about how the pursuit of knowledge ought to be organized. It is a normative interdisciplinary field, a kind of abstract research and education policy, if you will. The name itself was coined in the 1960s to re-brand library and information science in light of the possibilities opened up by the computer revolution for organizing and accessing knowledge—long before the internet! When I started the journal and wrote the book called ‘Social Epistemology’ a quarter-century later (now a quarter-century ago), I was ignorant of this precedent, though I have come to embrace it. Originally I had conceived of the field as lying at the intersection of history, philosophy, and sociology of science—the three fields in which I was originally trained. But there has always been also a strong undertow of influence from psychology, economics, and even theology in my thinking.

I start by assuming that knowledge of the sort that in German is called *Wissenschaft* (systematically disciplined learning) is the signature product of our ‘humanity’. It goes beyond the sort of ‘adaptive’ knowledge that enables social animals, including *Homo sapiens*, to survive and reproduce on a generation to generation basis. It might even be qualitatively different from such knowledge. If there is a central ‘mystery’ to social epistemology, it is how the combined efforts of so many multiply interested, imperfectly equipped beings can result in a collective knowledge base that is not merely *sustainable*—say, because each person’s strengths compensate for other people’s weaknesses—but genuinely *progressive*, in the sense that each generation leaves its successor with a wider range of opportunities for acting in the world than that generation started life with.

There is a policy version of this mystery: *Why does speculative capital investment in basic research pay off so well, even in practical terms, despite the fact that such research is often oriented toward undermining and/or replacing the conceptual assumptions of working knowledge?* Consider that the shift from Ptolemy to Copernicus had nothing to do with

practical issues of navigation, astrology, etc. (In fact, it's only in the 18th century that an application-friendly version of Copernicanism starts to be widely disseminated.) Copernicus won the day largely because Galileo, Kepler, Newton and others could point to *new* cognitive and practical benefits that flowed from following Copernicus' lead in displacing the Earth's physical centrality, which more than compensated for any inconveniences caused by its counter-intuitive heliocentrism. Moreover, because these Christians saw themselves as *literally* created 'in the image and likeness of God', they took the relative mathematical simplicity of the Copernican world-view as a deep epistemic mark in its favor—not merely an aesthetic nicety. (After all, God regards Creation all at once as a whole—and so why shouldn't we aspire to the same?) The take-home lesson is that we will make radical and risky changes if we think they will leave us capable of much more than we have done so far, regardless of the attendant changes in our spiritual and material environment.

I am the first to admit that this proactionary stance is faith-based. Indeed, it is one of the first points made in my new book, co-authored with Veronika Lipinska, *The Proactionary Imperative: A Foundation for Transhumanism* (Palgrave 2014). In this context (and elsewhere), I have invoked the credo of the father of cybernetics, Norbert Wiener: 'Science is a way of life that can flourish only when men are free to have faith'. I read Wiener as updating Pascal's Wager for the existence of God, which aimed to show that faith is self-empowering. But in Wiener's case, this faith was invested in extending the frontiers of knowledge, a process through which we may come to discover the deity in whose image and likeness we were created. And even if there turns out to be no God to confer value on our humanity, the Pascalian point remains that those upright apes *Homo sapiens* would still lead better lives.

How did you first become interested in environmental debates and discussions?

I became interested in these debates because environmentalism has long harbored the most intellectually respectable form of misanthropy, whereby humans are portrayed as corrupting, exploiting, torturing, overburdening, etc. this non-human thing called 'Nature'. Moreover, when environmentalism has turned in a 'humanistic' direction, it has often introduced a racial fatalism that stresses the differences rather than the similarities among people, which in turn has been used to justify hierarchy, segregation, and sometimes outright annihilation of populations. But perhaps the most disturbing environmentalist idea is that norms for an appropriate human existence can be inferred from deep natural history (aka 'the wisdom of evolution'), regardless of the projects that humans might think are worth pursuing today and in the foreseeable future.

Although many politically oriented environmentalists—so-called 'Greens'— advocate views consonant with the classical 'Red' Left, nevertheless their bottom-line message is that humans must curtail not only their everyday living but also their long-term aspirations, which is very anti-Red. Indeed, I see such environmentalists as retaining the Christian concept of Original Sin but without the anthropocentric deity offering humans the hope of

redemption. Of course, I don't believe that all 'environmentalists' hold such markedly misanthropic views, but you asked what first attracted me to these debates. To get a sense where such views are heading in their most extreme form, I suggest you google 'Dark Enlightenment' and its leading thinker, the Shanghai-based British philosopher, [Nick Land](#). He takes deep ecology to the next—and very scary—level.

You've argued in "90 Degree Revolution" that the Right and Left are being replaced by the upward-looking "Black" wing and the downward-looking "Green" wing. Can you describe these political orientations and explain how they've emerged?

It is generally recognized that the right-left divide originally referred to the seating arrangement in the French National Assembly established after the 1789 revolution. Those on the 'Right' wanted to return to a reinvigorated *ancien regime* as the only widely agreed source of legitimate authority, whereas those on the 'Left' held that humanity had to abandon the *ancien regime* to realize its full species potential. Moreover, this original 'Left' did not clearly distinguish 'liberals' and 'socialists', such that even *Das Kapital* when first published in 1867, was widely seen as part of an internal dialogue of the 'Left' and hence safely ignored by the conservatives who still controlled national institutions. (Consider that neither John Stuart Mill nor Karl Marx ever called a university his home.) The United States may be the only nation, for better or worse, in which this atavistic understanding of the 'Left' persists in its ideological discourse.

The up-down divide is due to a late Cold War Iranian futurist who called himself '[FM-2030](#)' and now resides in a frozen demise at the Arizona cryonics mecca, Alcor, in the hope of being someday resurrected, presumably without the pancreatic cancer of which he died in 2000. FM-2030 was very impressed by the advances made in telecommunications and space travel in the middle third of the 20th century, which led him to believe that truly progressive thinkers should envisage the cosmos as humanity's canvas. So if the earth is overpopulated, we simply settle in other celestial bodies, and if we need resources, we simply exploit the relevant ones in outer space.

However, he had little to say about the sorts of biomedical enhancements that occupy so much of transhumanist discourse today, other than to foresee more sophisticated forms of antenatal eugenic screening. Nevertheless, FM-2030's 'up-wing' ideology remains relevant, not least because those biomedical enhancements may actually enable its human bearers to survive better in outer space than on Earth itself! In any case, Up-wingers are open to the prospect of humans becoming radical shape-shifters to the same extent as we have already shown ourselves to be radical thought-shifters. Transhumanists have characteristically given this idea a libertarian spin: 'morphological freedom'.

The phrase 'Black Sky Thinking' was introduced about ten years ago by James Wilsdon, then director of research at Tony Blair's favorite think-tank, Demos. It was meant as a play on 'blue sky thinking', the pursuit of research without regard to immediate practical payoff, which in economic terms amounts to a speculative capital investment, as when one

purchases land in the hope—but not the certainty—that it will reap benefits, say, in the case of oil drilling. Unlike what Thomas Kuhn called ‘normal science’, blue sky thinkers aren’t limited to the pursuit of paradigm-based puzzles for their own sake. On the contrary, they are invited to start from counter-paradigmatic assumptions and then play out the consequences.

Black sky thinking takes this argument to the next level—namely, that we might wish to operate with radically different assumptions not only about the world but also ourselves. In other words, if we literally want to be ‘universal players’, then we need to determine the environmental requirements for the sort of beings with which we would identify and/or want to keep as company throughout the cosmos. The Search for Extraterrestrial Intelligence (SETI) certainly puts one in the right frame of mind to think about such matters, but another such project (with which I am personally associated) is [called Icarus Interstellar](#). It aims to launch a spaceship by 2100 with an indefinitely renewable environment for humans and other earthly creatures to navigate the cosmos.

It is against this backdrop that I introduced the Green-Black dichotomy, with ‘Green’ standing for the traditional precautionary position that understands the ‘environment’ in very earthbound, perhaps even pre-Copernican terms that take the Earth to be the outer limit of humanity’s existential horizon. The part of this story that is developed in [The Proactionary Imperative](#) is how the shift from ‘Left-Right’ to ‘Up-Down’ took place. The geometry of the political imagery implies that the Left and the Right are each divided and then re-combined to form the Up and the Down.

Any sophisticated observer of politics already knows that the Left and the Right are houses divided against themselves. On the one hand, the Left consists of an uneasy alliance of top-down technocrats and bottom-up communitarians; on the other, the Right is defined by the tension between past-facing traditionalists and future-facing libertarians. The ‘90 degree revolution’ I foresee is that the communitarians and the traditionalists will team up to form the ‘down-winged’ Green pole, while the technocrats and the libertarians will join forces to form the ‘up-winged’ Black pole.

This ideological realignment is already beginning to happen. A recent issue of *The Atlantic* features an article by Tara Burton entitled, [‘The Pope’s Radical Environmentalism’](#), which elaborates a position that superficially looks progressive but really aims for no more (and no less) than a restoration of some presumed ‘natural order’ through the rhetoric of ‘mutual dependency’. In contrast, the Breakthrough Institute is ideally poised to broker the new technocrat-libertarian alliance that is emerging orthogonally to the pontiff’s. However, getting the relevant elites to forge an ‘up-winged’ manifesto is one thing; turning it into a promising electoral prospect is another matter entirely.

Rich libertarians in Silicon Valley are venturing more boldly beyond the jurisdiction of states, while the legitimacy of progressive technocrats remains beholden to the unions and the special interests that claim to speak for the ‘poor’. Obama’s bailout of the US

automobile industry to secure a victory in the 2012 presidential election is a case in point. Had the state withdrawn subsidies and let the industry die a free market death, many jobs would have been lost in the short term but finally a generalized financial incentive would have been provided for both the public and private sectors to develop electric cars and, more generally to think creatively about personal transport. But this failure of nerve is not limited to the US Democratic Party. It equally dogs the UK Labour Party, the German Social Democrats and the French Socialists.

Where do you see today's environmentalism falling on your Green-Black spectrum?

Most environmentalism nowadays is clearly 'Green' in that it imagines the Earth—often personified as Nature—as the ultimate limit to human aspirations. Thus, self-identified 'environmentalists' rarely consider (1) that we might quite radically re-engineer ourselves or the planet to flourish more than we already have, even granting the inevitability of substantial climate change (i.e. transhumanist projects ranging from genetic enhancement to geoengineering); (2) that we might manufacture eco-based environments, including ones fit for human habitation, for export purposes across the cosmos (*à la* Icarus Interstellar); (3) that biodiversity is a functional not an intrinsic value of nature. This last point deserves further elaboration.

Greens have hijacked several key terms of ecological discourse, including 'future generations' and 'biodiversity', stressing their precarious side, which in turn underwrites a precautionary attitude toward global governance. I will deal with 'future generations' in response to the next question, in the context of what I see as the precautionary principle's ultimate wrongheadedness. In the case of 'biodiversity', I largely agree with Bjørn Lomborg in [*The Sceptical Environmentalist*](#), when he polemicized against the value premises contained in E.O. Wilson's popularization of the term. From a strictly Darwinian standpoint, species come and go over time, which means that genetic material is routinely recycled, resulting in a variety of new species, each adapted to its environment.

In that case, there will always be 'biodiversity', regardless of whatever specific (even large) contribution that *Homo sapiens* may make to species extinction: It is simply an outcome of what Darwin's theory predicts. But Wilson clearly intends a greater sense of moral urgency. More than sheer biology is at play—perhaps even a pagan version of Original Sin, whereby humans are seen as especially responsible for the extinction of other species, if only because we know so much more about the evolutionary process. But again, from a strictly Darwinian standpoint, it is difficult to see the problem here: *Homo sapiens* will simply do what it does given what it knows, as all species do, and Nature will respond accordingly—end of story.

So, how should someone interested in the environment with a 'Black' orientation respond to the moral urgency that Wilson attaches to biodiversity?

First, admit upfront that—*contra* Darwin—humans are indeed special, at least due to the power and knowledge we have over evolution. This opening move is necessary to undermine the ‘Dark Enlightenment’ thinking of Nick Land, who basically believes that global warming should be allowed to take its Darwinian course, culling *Homo sapiens* in the manner of a (super)organism shedding itself of a disease. Thus, the sense of moral urgency attached to biodiversity needs to shift from protecting non-humans to empowering humans. In the history of Christianity, it was specifically instructional. Thus, when the great 18th century chemist and dissenting Christian minister Joseph Priestley discovered photosynthesis, it was his interest in designing more efficient industrial processes that led him to appreciate the energy transfers that spontaneously occurred across species in nature.

Second, get clear about the sources of value in biodiversity, which I would say are two: (1) the genetic material of particular species, which then needs to be preserved; (2) the actual life trajectories of their specific members of those species, which then need to be recorded. Taken together they provide a vast storehouse of information and inspiration, which has been already exploited under the general rubric of ‘biomimetics’, the use of organisms and organic processes as models for human endeavors. However, the relevant acts of ‘preservation’ and ‘recording’ that speak to the functional value of biodiversity would actually be compatible with species extinction, *just as long as that process is reversible*—that is, a species could become ‘de-extinct’, to use the phrase of Harvard medical geneticist George Church for a process that in more religious times might have been called ‘resurrection’. This point is likely to prove increasingly salient in projects such as Icarus Interstellar that envisage a post-Earth yet human-friendly environment. In effect, one could have life-forms ‘on tap’.

You have argued against the precautionary principle, which for decades has been a foundation of environmental advocacy. What do you see as the limitations of the precautionary principle, and in which areas of human endeavor are its failings most evident?

The main problem with the precautionary principle is its default tendency to regard the environment in ‘steady state’ terms. In this respect, the principle remains captive to its early 19th century roots in scientific forestry, which took as its maxim that each generation should leave its successor with comparable—if not the same—resources as that generation itself enjoyed (e.g. the same number of trees). What makes this maxim so wrong is its patronizing attitude toward the next human generation, presuming that it would harbor an overriding wish to start life with the same basic resources as their parents possessed. On the contrary, most innovation has emerged in environments where the available resources were deemed incapable of meeting what the ascendant generation regarded as present and future needs. In this respect, necessity remains very much the mother of invention, such that the precautionary impulse to minimize risk is bound to arrest, if not shrink the capacity for human self-improvement.

Here it is worth recalling that welfare states have generally aimed to prepare its citizens to face future challenges via sophisticated schemes of incentives, taxes, and outright invasive and coercive policies, especially in health and education, which often were aggressively nationalized. In other words, the state's own actions were anything *but* precautionary. To depict the welfare state as offering a 'safety net' to risk-averse citizens may have been a great soft-sell public relations strategy in the aftermath of the Second World War but it misrepresents the welfare state in both its ends and its means, which are much more 'proactionary' than precautionary. Indeed, *The Proactionary Imperative* examines the formative role of Fabian Socialism in inspiring the UK welfare state in the first half of the 20th century.

Like their fellow-travelers across the Atlantic, the US Progressive movement, the Fabians were engaged in a frontal assault on unproductive humanity, both at the high and the low income levels. Put bluntly, the high end would be disinherited and the low end sterilized. Clearly neither policy would be seen as especially 'precautionary' by today's standards—nor were they seen as such when first proposed. The difference is that, innocent of the excesses of Nazism and Communism, there was a greater public willingness back then to discuss such measures openly. Nevertheless, subtler versions of these policies are still with us—as they should be—though often masked with precautionary rhetoric, especially when dealing with the poor. Thus, instead of the naked appeal to eugenics made by the Fabians and the Progressives, the more muted terms of reference nowadays are 'planned parenthood', 'genetic counselling' and 'antenatal screening'. However, as long as the self-avowed 'progressive' thinkers fail to admit that their policies aim to challenge and reform ordinary people's self-understandings, they will be held hostage to right-wing works like Jonah Goldberg's best-selling *Liberal Fascism*, a thorough albeit prejudiced documentation of the 20th century's proactionary state.

To sum up, then, the failings of the precautionary principle are twofold. The first is that it masks the true workings of power, as precautionaries exercising power are allowed to offload responsibility to some external threat—the revenge of 'Nature', if you will—that is said to force unpalatable decisions that end up constraining people's lives. To be clear: I have no principled objection to the coercive exercise of power as long as a positive goal is proposed in terms of which the power-monger can then be judged. (It is on this ground that a work like *Liberal Fascism* should be met.) At this very basic level of accountability, the proactionary principle is clearly superior to the precautionary principle.

The second failing is a bit more metaphysical: Although the precautionary principle claims to be true to evolutionary theory, the spirit of the principle runs counter to it by refusing to accept the normalcy of change—including disruptive change. (While proactionaries clearly have issues with the fatalism of strict Darwinism, they fully embrace the broader evolutionary world-view.) Thus, the European Union's regular invocations of the precautionary principle puts 'innovation' on the back foot as a potential threat to some presumed 'normal' or even 'natural' European lifestyle; hence, the current fad for practitioners and (of course!) researchers in 'responsible innovation'. This leads to the

absurd, virtually superstitious attempts to curtail the introduction of ‘genetically modified organisms’ into the food system, even though human-based selective breeding has been genetically modifying organisms from a wide range of species since the dawn of civilization. The only difference is that now we know *more* about the relevant genetic processes and hence are better than ever able to monitor the consequences of any interventions. Thus, the proactionary concludes: If we did so well in a state of comparative ignorance, imagine how much better we might do, were we allowed to act on the basis of our superior knowledge!

You have advocated Max More's 'proactionary principle' as a replacement for the precautionary principle. What is the proactionary principle, and what is at stake between the battle between a proactionary and a precautionary approach to risk?

The proactionary principle says that humanity is better served by people embracing risk as an opportunity than fearing it as a threat, the default position of the precautionary principle. Put in terms of harms and benefits, the precautionary principle amounts to the Hippocratic Oath projected onto the entire environment: Above all else, do no harm. In contrast, the proactionary principle is closer to ‘No pain, no gain’, which is to say, there are acceptable—perhaps even unavoidable—costs to get to a ‘better’ place, however that is defined. Where precautionaries are inclined to see irreversible loss, proactionaries think in terms of compensation for damages. Put this way, it may seem that the proactionary principle encourages recklessness. However, proactionaries turn the charge around, arguing that failure to change in a changing world (even if we are the source of most of those changes) is itself a formula for species extinction.

Ultimately the difference between the two positions boils down to an attitude of optimism (proactionary) versus pessimism (precautionary) toward our competence in risk management. However, what counts as ‘competence’ in such matters is tricky to gauge. For the last forty years, research into human cognition has uniformly pointed to limits and biases in our natural reasoning capacities, not least when it comes to assessing and calculating probabilities. (Much of my early work in the philosophy of science dealt with the epistemic implications of these findings, for which Daniel Kahneman, as one of the original researchers, eventually won the Nobel Prize in Economics.)

Nevertheless, these liabilities may cancel each other out in practice, resulting in a satisfactory, if not optimal outcome. For example, in the case of engineering ‘megaprojects’, a key factor motivating their completion is that boosters tend to overestimate their benefits, which compensates for an underestimation of the costs. But in the end, they get done—which might not have been the case had both the costs and benefits been correctly estimated at the outset. In the opening of *The Proactionary Imperative*, the psychology of modern progress is compared to pyramid scheme finance, in that the likelihood of your own success is directly tied to recruiting others to push the scheme forward, in the hope that enough recruits will deliver on the scheme’s promises (beyond simply multiplying members). Of course, the hope may or may not be borne out in the

normatively relevant time frame. So, while this psychology lay behind the recent global financial meltdown, a version of it has also worked over a longer time horizon to vindicate the proactionary principle.

To many environmentalists, the precautionary principle is one of the major bulkheads against the introduction of toxic, poorly understood substances into the local environmental. Is the proactionary principle applicable at the local scale, too? Is it mutually exclusive with a precautionary approach, or can they be simultaneously operative but at different scales or locations?

I don't think the difference between the two principles boils down to scales or locations. However, I can see why you ask the question this way. Risk-aversion tends to increase as the potential for damage is more immediate, which is ultimately what makes the precautionary principle so easy to sell. The proactionary principle requires a completely different mindset, perhaps implying that the default ways we assign cost and benefit are themselves problematic.

I would say that the proactionary principle should operate as the overarching regulatory principle governing innovation, with the precautionary principle functioning as a side constraint, such that the burden of proof is placed on those who would enforce precaution in specific cases. This is roughly the exact opposite of how the two principles relate to each other in European Union legislation. My starting point is that policy requires the reduction of uncertainty, which in turn makes risks manageable. But no amount of laboratory experiments, computer simulations or even clinical trials can replace the knowledge that can be obtained from direct intervention in a target environment. Of course, I don't mean to suggest that these more conventional scientific methodologies aren't worthwhile, but ultimately they provide only a map of the contingencies surrounding a proposed innovation. This especially applies to the so-called 'converging technologies' agenda, in which for the past dozen years public science funders on both sides of the Atlantic have provided incentives for researchers to combine cutting-edge nano-, bio-, neuro- and info-sciences and technologies for purposes of 'enhancing' human lives by making them longer, healthier and more productive. In such an interdisciplinary context, which brings together so many variables that are normally studied in mutual isolation, only the 'real world' can provide an adequate testing ground. By contrast, the usual scientific arsenal of experiments, simulations, trials, etc. are merely embodied speculation backed by the power of the state.

The final chapter of *The Proactionary Imperative* is devoted to how the public might become quite literally 'scientifically enfranchised'—that is, to see themselves as co-participating in the scientific enterprise in the normal course of their lives. For example, we countenance a 'right' or 'duty' for citizens to be active in the conduct of science, as well as legal mechanisms for conferring intellectual property rights on one's genome ('hedgenetics'), for which its bearer then would be held responsible. From our perspective, if there is a problem with the recent scandal involving Facebook's manipulation of the emotional responses of 700,000 users via their news feeds, it is mainly one of rhetoric.

If Facebook users were told (sufficiently explicitly) that any research done on their behavior would be made available to them for their own use (in terms they can understand), then my guess is that most users would welcome it. The main culprit here is a residual sense that ‘science’ is somehow alien to the human condition, which needs to be treated with *prima facie* distrust, which in turn inclines science-minded companies like Facebook to obscure their intentions. *Wired* magazine founder Kevin Kelly is basically right when he [argues](#) that the main concern we should have about the mass surveillance activities of Facebook, Google, or the National Security Agency is not what they learn about us but whether we will be able to use that information for our own purposes. The perfectly legitimate concerns that people have about the information asymmetry involved in mass surveillance is best addressed by equalizing access to that information—not by reverting to some nostalgic conception of ‘privacy’.

What are the biggest limitations and constraints of the proactionary principle?

I don’t think the principle has been sold especially well so far. Much of *The Proactionary Imperative* deals with the unfortunate—and often self-imposed—stereotyping of the difference between the precautionary and the proactionary principles in terms of the former being socially responsible with regard to current and future generations, while the latter is driven by a reckless self-centered individualism that disregards consequences altogether.

Matters are not helped by many transhumanists defending quite speculative enhancement treatments (e.g. neural therapies to increase cognitive power) as no more than an incremental step beyond routine medical interventions: It only serves to leave the impression that real risks are being deliberately downplayed. My own proposal for handling this public relations problem is to admit upfront that we live in a risky world, even without the proactionary principle. But the proactionary principle provides a way to turn risk—and the harms that are bound to be suffered—to our collective advantage. This is the lesson that the proactionary principle should take from the histories of science, technology and entrepreneurship more generally. Where we might now advance on these precedents is not by minimizing risk but by getting clearer about what might count as adequate compensation for the inevitable errors that will be committed in the name of risk-taking. Thus, the proactionary principle needs to be promoted as being about courage, perhaps even heroism, in the face of uncertainty, rather than promises of an ultra-convenient and beneficial world in the foreseeable future. ‘To boldly go where no man has gone before’ would not be a bad motto for the proactionary principle—minus the sexist pronoun!

But self-presentation aside, the proactionary principle has public relations problems because it cannot plug into people’s default intuitions as easily as the precautionary principle. Thus, implied in my answer to the previous question is that proactionaries are inclined to treat privacy somewhat cynically as an instance of what economists call ‘rent-seeking’, that is, turning the sheer act of ownership (in this case of one’s thoughts, preferences, memories) into a business for manufacturing scarcity, effectively enforcing

tolls on those who seek access—even if the owners themselves do nothing especially productive with their property.

This example shows where Fabians and Marxists differed over what constitutes ‘social justice’: The Fabians combated the sort of wasted opportunities and unrealized potential exhibited in rent-seeking behavior, whereas the Marxists focused their fire on those who would use their power to deny people the full value of their actual labor. While the two positions are not incompatible, they spin the idea of ‘exploitation’ rather differently, with Fabians the more willing to challenge individuals who did not seem to work to capacity, even if their work was decently rewarded. (The Fabian backstory to contemporary neo-liberalism begins here.) So, whereas Marxists have had a checkered –but often hostile—relationship to automated technology in the workplace, the Fabians uniformly welcomed it as providing an incentive for humans to engage in self-improvement, if not self-redefinition *à la* transhumanism’s preoccupation with our becoming techno-biological hybrids, or ‘cyborgs’.

Given prevailing political and social conditions, how likely is it that the proactionary principle will be embraced? How attractive will it be to policy makers, publics, and experts?

I suppose the best way to address this question is to contrast the self-understanding of the human being according to the precautionary and the proactionary principles. Although the precautionary principle has been very effectively presented as the more ‘down-to-earth’ and ‘grounded’ of the two, both principles in fact understand the value of human life in rather abstract, second-order terms. In other words, both see the default tendencies of *Homo sapiens* as transitional to some new world order. Neither principle valorizes humans continuing as they have been, but they project rather different futures.

Precautionaries want us to own up to our unprecedented disturbance of a personified superorganic Earth, ‘Gaia’, or face extinction in Gaia’s great disease eradication program that we register as ‘global warming’. And this may mean that we place greater value on the sensory capacities that share with other creatures (e.g. the capacity to feel pain) than those powers that have emerged from our having inherited a highly developed forebrain. In contrast, proactionaries would have us see the contingent nature of our presence on the planet as an invitation to replace and/or enhance those aspects of ourselves and our environment in the name of better realizing those aims that most distinctly mark us as human. This is the sense in which the proactionary principle promotes something that is rightly called ‘transhumanism’. It sets great store by the imaginative constructions produced by our highly developed forebrains as bases for sustained action. In this respect, the proactionary principle is continuous with the modern era’s great utopian, vanguardist and futurist projects.

Of course, one big difference between the proactionary principle and those earlier projects is the amount of data that is now available and collectible, typically with much less coercion

than had been either envisaged or enforced in the earlier projects. Indeed, if people did not spontaneously share so much information about themselves over the internet, the controversies surrounding surveillance would not be so heated; hence, the kernel of truth in the crass slogan, ‘If you’ve got nothing to hide, you’ve got nothing to worry about’. The real problem, as suggested in response to an earlier question, is that we have yet to establish a fair exchange rate for such sharing: Do Facebook users get enough value in return to justify the company’s retention of their data? As a general rule of thumb, one underwritten by the proactionary principle, people should be empowered, not enslaved, by what they produce, including behavioral data.

To get a handle on this matter, we might see the Facebook news feed experiments as updated versions of the Hawthorne Works experiments funded by the Rockefeller Foundation in the 1920s and ‘30s to study worker productivity under various environmental conditions (including the presence of an observer, lighting on the factory floor, etc.). The key difference is that Rockefeller assumed that prosperity depends on smart manufacturing, whereas Google assumes that it depends on smart living more generally.

Not surprisingly, then, whereas complaints about the Hawthorne experiments were referred to labor-management relations boards, Google-style experiments are more likely to be treated as a human rights issue and face the European Court of Justice (as in the recent ‘right to forget’ ruling against Google). In short, the proactionary principle is best served by everyone who comes under Google’s gaze having the right to know—but not to decide—what Google does with their data, such that if they don’t like what Google is doing, they would be in a position to act knowledgeably against it. Thus, Google would be allowed no more—and no less—freedom than is allowed to an elected representative.

Here it is worth recalling the key role that the empowerment of citizens vis-à-vis corporations played as a theme over the course of the 20th century in turning the US federal government into the intelligence-driven proactionary state that it remains, despite periodic ‘anti-intellectualist’ pushbacks. Issues of ‘transparency’ and ‘accountability’ started to loom large once interlocking elites appeared to increase their knowledge over the rest of the population asymmetrically, serving to undermine the epistemic level playing field long regarded as a necessary condition for the conduct of democratic politics. In this context, the state intervened to break the epistemic monopolies and the rent-seeking tendencies of such elites. Three moments in the evolution of the American proactionary state in the past century may be identified, each associated with a phalanx of academics and intellectuals:

- (1) *The Progressive Movement*: This is when central government first became fully self-conscious as an agent in American political life that would routinely oversee and occasionally override the activities of state governments. It resulted in anti-trust legislation, a conservation policy based on resource use efficiency (as opposed to nature’s intrinsic value), a national income tax, and an active mobilization of public opinion to fight a war not on its shores—the First World War.

- (2) *The New Deal*: This moment marked the inward turn, in which central government itself was radically reorganized to enable it to exert greater regulation over the economy, including financial transactions and labor-management relations, as well as over social policy, mainly through a ‘packing’ of the Supreme Court with judges inclined to interpret the Constitution so as to accelerate the pace at which a progressive agenda might be pursued.
- (3) *The Great Society*: At this point, in the 1960s, central government explicitly declared itself an agent in social experimentation on the population at large. Lyndon Johnson adopted the phrase ‘The Great Society’ from the Fabian political theorist, Graham Wallas. Johnson and his advisors were impressed by the ease with which Whites and Blacks fought side-by-side in the Vietnam War (a first in US history), which emboldened them to engage in policies such as ‘busing’, which mixed the class and ethnic makeup of the classroom by transporting children to schools other than they would normally attend. Much can still be learned from the writings of leading academics of the period, including sociologist James Coleman and psychologist Donald Campbell—especially the latter’s methodological innovation, ‘quasi-experimentation’.

The final chapter of *The Proactionary Imperative* may be read as proposing a fourth moment in this evolution of the state.

One concrete example of a proactionary initiative is seasteading, in which a well-equipped ship sails into international waters and its inhabitants can conduct experiments (and business) outside the realm of government regulations. What is the relationship between the proactionary principle and libertarian ideology, which has been a key driver behind the seasteading movement?

This is a complex topic that speaks to the soul of libertarianism. In my view, seasteading is more ‘libertarian’ than the practice of politicians and theorists normally associated with libertarianism. Seasteading epitomizes the sort of broad libertarian sensibility that informs the proactionary principle. I say ‘broad libertarian’ because there is a tendency to stereotype libertarianism as an exotic right-wing ideology of the rich. To be sure, seasteading was the brainchild of the Silicon Valley venture capitalist Peter Thiel, a big financial supporter of Rand Paul for President in 2016.

However, the libertarian mindset that favors seasteading does not completely coincide with the alloyed version that entered mainstream politics in the Reagan/Thatcher years through that curious blend of Friedrich Hayek and Milton Friedman, who were both fatefully located at the University of Chicago during the Cold War. Their version of libertarianism ended up embracing a form of state-backed corporate capitalism that subverted the free market principles which had been libertarianism’s historic calling card. Indeed, in the case of Latin America—most notably Chile—the United States deployed all the agencies of the

state to render the region friendly to its own firms, very much in the spirit of contemporary neo-liberalism.

In contrast, consider what libertarianism looked like just before 1980—as in, say, Robert Nozick’s *Anarchy, State and Utopia*. A somewhat different image emerges, one more obviously continuous with Lockean liberalism and even the sort of anarchism that accepts collectives as voluntary associations. It was to this more left-leaning libertarianism that Nozick himself increasingly turned in his later work (e.g. *Philosophical Explanations*), especially Abraham Maslow’s self-actualization psychology, which had become enconced in Silicon Valley in the late 1960s and (I believe) is the true basis for the Valley’s ideology today.

In my next book (*Knowledge: The Philosophical Quest in History*, Routledge 2015), I describe this as ‘deep liberalism’. It judges the value of the state primarily in terms of its capacity to release human potential, which is a stronger and better criterion than whether the state protects people from threats to their collective existence. The latter, often associated with a ‘night-watchman state’, is guided by the intuition that barring unwanted external force, the market can work its magic to everyone’s benefit. Thomas Hobbes may be regarded as the patron saint of this view of the state, which deters such externalities by its own monopoly of force, which it can deploy in case of attack.

However, deep liberals are not persuaded by this image of state-individual relations. They recognize that individual freedom is meaningless if it cannot be exercised due to a culture of restraint that discourages risk-taking (especially the forging of exotic alliances that is often required), as in the ‘national security’ terms in which the night-watchman state was often promoted by many self-styled ‘libertarians’ and ‘liberals’ in Cold War America.

From the deep liberal standpoint, the night-watchman state unduly collectivizes uncertainty and turns it into a superhuman enemy that requires restriction on everyone’s personal freedom through an enhanced military and police force. In short, despite its ‘hard line’ rhetoric, such a state is excessively *precautionary*. In the Cold War, the threat of nuclear annihilation and Communist infiltration gave some *prima facie* plausibility to this policy. Today there are other ways of justifying the policy that draw on this precedent: Islamic terrorism, border security vis-à-vis immigration, etc.

However, in the case of seasteading, the libertarian’s precautionary foe is a more metaphysical ‘superhuman enemy’, yet one recognizable as a legacy of the Second World War: namely, humanity’s supposedly irreducible capacity for evil. The functional equivalent of the night-watchman state is the system of university institutional review boards and other research ethics codes—all descended from the 1946 Nuremberg trials that revealed the atrocities of Nazi scientists. Seasteaders see this restriction as regulatory overkill, especially in a world where a progressive future requires that people embrace science into their lives to expand the horizons for human self-empowerment.

In this context, appeals to ‘evil’ all too often provide an excuse to ignore large bodies of work (e.g. in eugenics) that may remain empirically instructive even if morally abhorrent. Here seastealers and other proactionaries follow a long tradition of Christian theology, from St Augustine onward, that has treated ‘evil’ not as the arch-enemy of ‘good’ but simply a moralized version of our own ignorance (aka ‘perversion of the will’) that at best helps to discipline the human soul, but if taken too literally can limit the human prospect for redemption by paralyzing decision-making altogether.

In your new book *The Proactionary Imperative*, you highlight some key class issues emerging from a proactionary approach, namely that the 'black' future of space travel, life extension, and the like is likely to be affordable only to the wealthy. But you also argue that this challenge might present an opportunity for the renewal of the welfare state. What are the implications of a proactionary approach to technology for inequality, and how can the problems engendered by new technologies (i.e. the loss of jobs due to autonomous robots) be mitigated?

Throughout this interview, as in the book, I have stressed that a proactionary outlook has been integral to the Fabian and Progressive reforms that brought about the welfare state in the UK and US, respectively, in the 20th century. Moreover, these reforms were very much oriented toward enhancing the powers of the state, even though the Fabians and Progressives themselves extolled the virtues of entrepreneurship and ‘rugged individualism’. In the book, we say, only half facetiously, that the eugenic policies favored by these transatlantic proactionaries would breed ‘natural born liberals’. However, as the Cold War dragged on, the welfare state became increasingly invested in stabilizing (without necessarily advancing) the fortunes of the poor. The reasons for this are quite complex, involving electoral strategy, national security concerns but also a reluctance to recognize failure and diversion from the overall game plan of human enhancement that originally made the welfare state appear so appealing.

To be sure, both Daniel Bell’s and Alvin Gouldner’s early (i.e. 1970s) discourses about the ‘information society’ as the leading edge of ‘post-industrial society’ still kept the original impulse of the welfare state alive, even though by then Bell was very much an establishment figure and Gouldner a more counter-cultural one. But by the 1980s, defense of the welfare state collapsed into a generic anti-capitalism that was fixated on one goal: minimizing income inequality, which was taken as proxy for many other social inequalities. The fixation continues to this day, even though the welfare state has had more to do with reducing *unearned* advantage than simply reducing advantage altogether; hence, its historic emphasis on *equality of opportunity* rather than *equality of outcome*.

Finally, I don’t see the arrival of more intelligent technologies as especially damaging to human job prospects. On the contrary, I would submit that such fears divert from the real issue—namely, the lack of people willing to do certain jobs that in the past were seen as ‘intrinsically’ human, such as care for the elderly and perhaps nursing more generally. It is here that ‘android companions’ are likely to make major inroads and, indeed, re-orient

humanity's affective frontiers. But unemployment doesn't really get to the heart of what's at stake. A much bigger threat to our sense of humanity posed by the world-view laid out in *The Proactionary Imperative*—one with the potential to unleash new forms of inequality—centers on our response to those who simply wish to remain 'unenhanced' yet possessed of the sort of human dignity enshrined, say, in the United Nations Universal Declaration of Human Rights. It is the fate of those beings that we need to keep our eye on.

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