

Who Should Govern the Welfare State 2.0? A Comment on Fuller
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Abstract

In his thought-provoking exploration of the future of humanity, Steve Fuller envisages a new and strengthened role for the welfare state. The future transhumanist society will be inhabited by increasingly segregated classes of biological species, some of which have been successful in enhancing their biological condition beyond evolutionary determination. Others, however, will be trapped in Humanity 1.0 with no hope of getting access to expensive biomedical products or genetic services. Fuller emphasizes the “proactionary principle” as a new welfare model in which the benefits from risky experiments are redistributed to the wider society through taxation and compensation. Still, the basic philosophical question remains: what is the basis of solidarity between Humans 1.0 and Humans 2.0 in a world where citizens no longer will share a common biological condition. Distributive justice is key to Fuller’s proactionary ethics. In this comment, I examine the foundation of justice as outlined by Fuller. I propose a new set of political positions for the post-biological age (i) bioliberalism, (ii) bioegalitarianism and (iii) bioutilitarianism.

Two modes of government

The basic argument in this paper is as follows: According to Fuller (2011, 2012a, 2013), at some future point in history cognitively and biologically enhanced Humans 2.0 will depart from Humans 1.0. In the future transhumanist society, the role of the welfare state is to stimulate experimentation, distribute positive effects, and compensate negative effects. Traditionally, in Humanity 1.0 redistribution was based on the idea of a “natural lottery” i.e., the biological abilities or disabilities a person has are the product of unintended evolutionary consequences. In Humanity 2.0, however, unintended consequences are turned into intended consequences as an effect of bioengineering and biomedical intervention. The question therefore remains: if the future welfare state is run by Humans 2.0, why should they continue to distribute the benefits of scientific experiments to the remaining Humans 1.0? What is the common ground for inter-species solidarity?

Welfare states have consistently sought a balanced approach to risk management through a rigorous science-based approach and careful balancing of the principles of precaution and proportion in technological regulation. Whereas precaution calls for the avoidance of risk, proportion allows the benefits of risk-taking to be weighed against the possible consequences on the basis of the best available evidence. A predominant belief among contemporary policymakers and high-technology advocates is the necessity of replacing the balance between precaution and proportion in light of the “grand challenges” humanity. Climate change, ageing populations, resource scarcity and threats to social security can no longer be effectively managed by simple adherence to the precautionary principle and the avoidance of technological risk. Instead, a new policy regime for

disruptive innovation is needed.

Fuller (2011) convincingly argues that a new risk-taking paradigm is emerging in international science and innovation policy that challenges the traditional precautionary principle. In the call for accelerated “convergence” among biotechnology, nanotechnology and information technology — that has been adopted by research funding agencies around the world — a new “proactionary principle” is emerging. The precautionary and proactionary principles can be seen as two radically different ways to structure science and technology in cases where there is (a) the possibility of harms and benefits resulting from a novel technology and (b) scientific uncertainty about the harms and benefits involved” (Holbrook and Briggle 2013, 16).

In high risk/high uncertainty situations, policymakers can attempt to prevent or restrain new technologies until cause-effect relations are better understood (precaution); or they can promote the technology while learning more about cause-effect relations along the way (proaction). In other words, policymakers can either conceive the technology as guilty until proven innocent (precaution, where the burden of proof lies with proponents of the activity); or they can conceive the technology as innocent until proven guilty (proaction, where the burden of proof lies with opponents of the activity) (Holbrook and Briggle 2013: 17). For Fuller, “precautionary policymakers set their regulatory focus on the prevention of worst outcomes, whereas proactionaries seek the promotion of the best available opportunities” (Fuller 2012b, 2).

A recent example of the proactionary principle can be found in an appeal to the President of the European Commission from the CEOs of some of Europe’s largest tech companies under the European Risk Forum. The CEOs call for the creation of a new legal instrument called “The Innovation Principle”, which clearly resonates with the proactionary paradigm:

We see numerous practical examples across a range of technologies, from engineering to chemicals and agriculture to medical sciences. The potential for all these technologies to advance social and economic welfare is undisputed but is being put at risk by an increasing preference for risk avoidance and the loss of scientific methodology from the regulatory process (ERF 2013, 3).

In this spirit, the European industrial leaders are deeply concerned by the impact of recent developments in risk management and regulatory policies on the innovation environment. Innovation is by definition a risk-taking activity, they argue. Risks need to be recognized, assessed and managed but cannot be avoided if society is to overcome the most persistent challenges such as food, water and energy and sustainability.

Three doctrines of biopolitics

Expressed this way, the proactionary principle is fairly simple. Whenever precautionary legislation is under consideration, the impact on innovation and human advancement should be taken into account in the policy process. But behind this seemingly formal

discussion of risk management and regulation is a more fundamental disagreement about human nature. On the one hand, adherents to the precautionary principle emphasize the preservation of human's natural health and environment. It is in the nature of humans only to take a minimum of risks i.e., risks sufficient for survival and competitive advantage. From the Renaissance and Enlightenment to today's post-industrial society, science has advanced through the successive reduction of risks by extending healthcare, enhancing learning, and increasing control over nature.

Proactionaries, on the other hand, are willing to increase risks (e.g., of population growth, geoengineering, biomedical experiments) by re-designing human biology, "if not replace it altogether with some superior and more durable substratum" (Fuller 2012). Instead of reducing risk, science policy should facilitate the development of exponentially advancing technologies. In the 21st century, following the rapid and convergent advances in the nano-, bio-, info- and cogno-sciences, there is no longer strong reasons to continue to anchor humanity in carbon-based bodies. Instead, society should be open to leverage humanity into silicon-based containers exploring advances in biotech, nanotech, synthetic neuroscience, and other emerging technologies (Fuller 2011, 3). The proactionary principle is thus associated with the transhumanist movement, in which being human is defined by the capacity to keep ahead of the evolutionary game — whether by benefiting from success or learning from failure (Fuller 2011, chapter 3).

It belongs to Fuller's merits that he goes to great lengths to describe both regimes of risk management. He contends that the disagreement between proactionaries and precautionaries will mark the most influential ideological conflicts of the 21st century. Among the adherents of the proactionary principle are the transhumanist philosophers Max More and Ray Kurzweil. In More's description, the proactionary principle is closely tied to the individual's right to pursue personal advancement beyond the current biological condition:

People's freedom to innovate technologically is highly valuable, even critical, to humanity. This implies several imperatives when restrictive measures are proposed: Assess risks and opportunities according to available science, not popular perception. Account for both the costs of the restrictions themselves, and those of opportunities foregone. Favor measures that are proportionate to the probability and magnitude of impacts, and that have a high expectation value. Protect people's freedom to experiment, innovate, and progress (More 2005).

The proactionary principle encourages the pursuit of radical technological change. The spiritual, psychological, and environmental dangers of ramping up the pace of change, according to transhumanists, are best met by moving faster. This principle is associated with a Silicon Valley-based model of innovation, and closely connected to the self-styled image of high-tech companies such as Google (of which Kurzweil serves as the director of engineering). But as Fuller rightly shows the principle extends much further into the mind-set of influential science policy officials from the National Institutes of Health and National Science Foundation (Roco and Bainbridge 2002).

In terms of the underlying political program of this approach, I shall differentiate three positions from Fuller’s complex argument each of which models the responsibility of society versus the individual in driving technological change. The three positions differ in their views on whether the responsibility of human enhancement should be attributed to a progressive government; held by a small elite of “guardians,” or left to the libertarian marketplace.

Bio-libertarianism

As is evident from the More quote above, liberty is a crucial element in many transhumanists’ defense of the proactionary principle. The free play of choice is what is left when the ability to transcendent carbon-based evolution is realized. Implied in this position is a Hobbesian view of the state as a keeper of peace and as a protector of property rights. It is the individual not the state that drives innovation. This resembles a laissez faire doctrine of technological innovation: the state should not intervene in the individual’s freedom to experiment, innovate and progress. Accordingly, both goods and harms of technological experiments are the products of individual action. No agents should harm others (negative freedom) but when biomedical experiments (i.e. investments) are successful, the winner takes it all. In this picture, redistribution of goods and benefits is always bound to make things worse — not better. The consequence is a strong growth-oriented regime, what Kurzweil has labeled the exponential growth theory. “The opportunities offered by abundance, disruptive convergence, problem-solving and exponential technological growth is unlimited” (Kurzweil 2013). In Fuller’s terminology, the social temporality of transhumanism is profoundly future-oriented. The past, be it the social order or natural history, is a stage that will be radically transcended by human creative freedom (Fuller 2011, chapter 5).

Bio-egalitarianism

In contrast to the libertarian argument, the bio-egalitarian position is associated with traditional theories of distributive justice. The state should protect natural human health and environment, including protecting the disabled and the have-nots and know-nots. In this picture, the state is a supplier of public goods e.g., healthcare, environmental protection, education and basic research. It is not the individual agent but collective institutions that drive historical progress and innovation. Implied in this position is a Keynesian view of the state. Redistribution is acquired to achieve a socially just order. Reducing inequalities and providing adequate subsistence for all citizens involve strong taxation. The consequence is a low-growth society modeled on classical environmentalism and post-capitalist imaginaries. According to Fuller, the social temporality of the precautionary ethics is persistently past-oriented. The past, be it historical or counterfactual, constitutes a stable social order, with regularized collective institutions and path dependencies. The social contract is a continuing normative order against the flow of day-to-day developments (Fuller 2011, 213).

Bio-utilitarianism

Against bio-libertarianism and bio-egalitarianism Fuller suggests a third position based on utilitarian grounds. Fuller recommends we merge the best of both models. Risk-taking is one of the most important drivers of societal prosperity and is indispensable for sustainable development and growth. If society is to overcome important challenges such as energy security, sustainability and demographical change, investors, researchers, and entrepreneurs need to be innovative and take risks. To achieve this, the welfare state should play a proactive role by supporting a risk-taking environment and encourage innovation. If experiments are successful, they should spill over to collective learning and hence generate collective benefits. When things go wrong, the failures and mistakes of experimentation should be compensated for by the state (through a principle of reasonable risk e.g., risks that potentially benefit everyone). Because citizens will be taxed to fund the proactionary investments, not only in terms of setting up the experiments but also by compensating the proactionaries when experiments go wrong, the proactionary entrepreneur is continually indebted to the non-proactionaries, who are therefore entitled to enjoy the benefits (Fuller 2011).

According to Fuller, goods and harms may be the products of individual innovation. But when experiments are successful, the collective should take its share. In this utilitarian scenario, long-term structural advantages will outperform short-term setbacks and failures – precisely by incorporating learning into the collective body of knowledge (Fuller 2011, 216). In other words, Fuller suggests a hybrid model. The welfare state should combine high risk/high reward experiments inspired by the proactionary regime combined with the compensation of burdens and the collectivization of benefits adopted from the egalitarian model.

Natural luck and intra-species solidarity

Already an early criticism of the transhumanist movement was that it sounds like something that will increase the split between the rich and the poor, leaving millionaires to benefit from genetic engineering and advanced personalized medicine, while the less privileged must settle for traditional lifespans or shorter (many people in developing countries continue to die from lack of access to basic goods such as clean water). The rich already today have the option of cryonics, preserving their bodies after death in the hope that future technology will revive them (Frankhauser 2013). Why should future inequalities not persist with the advent of advanced human biotechnology?

Fuller expects medical technologies to be delivered by government. Because regular citizens will be taxed to fund the proactionary programs, Humans 2.0 are continually indebted to Humans 1.0, who are entitled to enjoy the benefits of new discoveries. However, it is unclear from Fuller's account why Humans 2.0 should continue to display solidarity and empathy with Humans 1.0. Put another way, what should be the ruling principle for distributive justice in the welfare state 2.0? If members of the human species metamorphose into a superior life form in terms of enhanced intelligence, life expectancy, and cognitive performance, what should be the drive to assist those less enhanced?

In order to answer this question, we need first to take a step back and look at how

societies have handled this dilemma within Humanity 1.0. For this purpose consider the role of “natural luck”. In an immensely influential section of his *A Theory of Justice* (1971), John Rawls explains why the concept of natural luck has had such a central place in discussions of justice over the last 30 years. The fundamental idea is that every person’s starting point in society is the outcome of a social lottery (the political, social, and economic circumstances under which each person is born) and a genetic lottery (the biological makeup each person inherits). Rawls argues that the outcome of each of person’s social and natural lottery is like the outcomes of ordinary lotteries, a matter of good or bad luck (Rawls 1971, 74-75). Since people cannot possibly deserve the fortunes or rewards of this lottery, people’s starting positions cannot be used as a philosophical justification for social privileges. Instead, people who are born in substantially undeserved situations should be compensated by the distribution of social and economic benefits (Lippert-Rasmussen 2009).¹

Natural luck plays an important role in Rawls’ philosophy. Since we can regard people’s inborn talents as a matter of luck, it is appropriate, Rawls argues, to regard these as a “common asset” (Lippert-Rasmussen 2009). This means that “[t]hose who have been favored by nature ... may gain from their good fortune only on terms that improve the situation of those who have lost out” (Rawls 1971, 101). In other words “undeserved inequalities are to be compensated for”, and if people’s lives are shaped by undeserved outcomes of natural lottery the principle of redress seems well founded. Other luck egalitarians have sought to further substantiate this theory. Ronald Dworkin, for instance, has argued that differences in wealth generated by differences “traceable to genetic luck” are unfair (Dworkin 2000, 91-92).² Similarly, G.A. Cohen holds that “the fundamental distinction for an egalitarian is between choice and luck in the shaping of people’s fates” (Cohen 1989, 907).

Fukuyama (2002) takes a step further. He claims that natural luck provides a positive support for egalitarianism. On the one hand, the genetic lottery is inherently unfair because it condemns certain people to lesser intelligence or disabilities. But in another sense it is deeply egalitarian, since everyone, regardless of class, gender, race, and ethnicity, are brought to the same level (Fukuyama 2002, 156). The genetic lottery guarantees, for example, that the daughter of rich and successful parents will not necessarily inherit the talents and abilities that created the conditions conducive to the parent’s success (Fukuyama 2002, 157).

All of this could change under the impact of human bioengineering. The most clear and present risk is that the large genetic variations between individuals will narrow and become clustered within certain distinct social groups. In the future, the full impact of biotechnological innovation can be used in the service of optimizing the kinds of genes that are passed on to one’s offspring. This means that new technological elites may not just pass on social advantages but embed them genetically as well.

¹ Here, I want to sustain the intuitive appeal of luck egalitarianism in light of the development of human biotechnology. I do not provide a complete defense of luck egalitarianism. Several matters concerning this position will be left aside, including that of settling on the proper cut between choice and luck.

² Elsewhere, Dworkin has laid out a case for the right of parents to genetically engineer their children based on a broader concern to protect autonomy (Dworkin 2003).

Children who have been genetically selected by their parents for certain characteristics, may come to believe increasingly that their success is a matter not just of luck but of good choices and planning on the part of their parents, and hence something deserved. They will look, think, act, and perhaps feel differently from those who were not similarly chosen, and may come in time to think of themselves as different creatures (Fukuyama 2002, 157).

Fukuyama goes to great lengths to show that the denial of the concept of human dignity — that is, of the idea that there is something unique about human beings — leads us down a perilous path. Still, one does not have to follow Fukuyama in his strong commitment to anthropocentrism to see that something important is at stake. Reason, moral choice, and possession of species-typical emotions are properties that are shared by virtually all humans and therefore serve as a basis for intra-species equality, even if individuals possess these traits in greater or lesser amounts. In this sense, there is a certain naturalistic component to the Rawlsian theory of justice. It presupposes (1) that humans can establish personal projects; (2) that they are purposive, rational animals and (3) that they can formulate long-term goals (Fukuyama 2002, 157). This reciprocity and equal recognition of human beings is genetically programmed as part of human cognitive psychology.

A Faustian bargain

It seems reasonable to demand that Fuller and other proponents of the proactionary principle spell out what will prevent the post-biological society of becoming one that is far more hierarchical and competitive than the one we currently inhabit. When the genetic lottery is replaced by choice, it opens up a new avenue along which human beings can compete, one that threatens to decrease the already instable solidarity between the top and bottom of the social hierarchy. Fuller assumes that the posthuman world will look pretty much like our own — free, equal, prosperous, compassionate — only with better health care, longer lives, less threats. But as Humans 2.0 will evolve to more enhanced levels of cognition and performance, the sense of a “shared humanity” will be lost. The persons who are living in Humanity 1.0 will increasingly be seen to be in the situation they find themselves in through their own fault, and no longer as victims of natural luck.

It is one of the merits of modern science to have expanded our view of who qualifies as human beings because it has tended to show that most of the apparent differences between humans are conventional rather than natural. Where there are natural differences, as between men and women, they affect nonessential qualities that have no bearing on political rights. But if some future human group transitions into a superior life form, with better memory, faster computing power, and freedom from the bounds of traditional thought, why should they treat the remaining humans with dignity and compassion?

The inability to address this challenge, which is at the heart of liberal democracy, is unusual for Fuller’s work in science and technology studies. As Finn Collin mentions in

his article “Two Kinds of Social Epistemology” (2013), Fuller officially advocates an axiology of science. “He expresses an explicit commitment to rule utilitarianism [that] quickly gets redefined as a version of political egalitarianism” (Fuller 1998/2002, xvi; Collin 2013, 101). The normative agenda is persistent throughout Fuller’s work. Society should establish a level playing field in the advancement and application of scientific knowledge, and make sure that the products of science translate into public goods.

In *Preparing for Life in Humanity 2.0* Fuller returns to a utilitarian ethics combined with a transhumanist stance. Here, utilitarianism is no longer grounded in the classical model of *homo sapiens* but in a transhumanist principle. As superhumans are likely to develop capacities for experiencing super well-being, Humans 2.0 are justified in optimizing their own well-being before turning to lower-level species. Collin points to this particular danger in the lack of a firm axiological basis:

The utilitarian basis of social epistemology will supply normative guidance only as long the subject of moral action is a human being equipped with definite preferences. It will tend to go astray, however, once we are in a position to manipulate the human genome and produce a “Homo 2.0” who will derive pleasure and utility from whatever activities we decide on. But what kind of human being should we create? Should it be one suitable for the global economy with its insatiable need for growth, which calls for a human being with unlimited capacity for hard work? Or a compassionate Christian? Or a hippie with great capacity for love? We get no firm directions from a purely utilitarian ethics (Collin 2013, 101).

Fuller acknowledges this protest, though he gives no definite answer. In a central passage in *Humanity 2.0* he writes:

There is no doubt humans are improving their capacity to manipulate the material character of their being. Of course, uncertainties and risks remain, but in the first instance they are about how costs and benefits are distributed ... Principled objections do not require an ontological basis. Traditional natural law appeals to violations of human nature ... increasingly lack intellectual currency, given the socially constructed character of humanity. Instead, principled objections to Humanity 2.0 should ... argue that unregulated innovation is likely to increase already existing inequalities in society” (Fuller 2011, 109).

In short, the welfare state 2.0 needs an explicit policy of redistribution, which addresses how the moral foundation and political rights of current liberal democracies are preserved in a post-biological age.³

³ I am grateful to the participants in the session “What does it mean to prepare for life in Humanity 2.0?” at the 4S Meeting in San Diego 2013. In particular I want to thank Francis Remedios, Britt Holbrook, Bob Frodeman, Stephen Turner, Finn Collin and Steve Fuller for valuable comments.

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