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Five and a Half Utopias

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Despite its dismal record, the utopian impulse is by no means extinct. An eminent physicist looks at several of the guises in which utopian thinking is likely to appear during the century ahead—and at the perils that lurk behind each one

I USED to read a good deal of science fiction when I was a boy. Even though I knew pretty early that I was going to be a scientist, it wasn't the science that interested me in science fiction; it was the vision of future societies that, for better or worse, would be radically different from our own. This led me on from science fiction to utopian literature, to Plato's *Republic*, Thomas More's *Utopia*, and Edward Bellamy's *Looking Backward*, and also to the literature of anti-utopias, to Aldous Huxley's *Brave New World* and George Orwell's *1984*. I have been more interested in other things in recent years, but now that we are starting a new millennium, it is natural to start thinking again about what sort of utopia or anti-utopia might be waiting for us in the future.

There was a great deal of this sort of speculation at the end of the previous century. The characters in Anton Chekhov's *Three Sisters* (written exactly a hundred years ago) seem captivated by utopian dreams. Here, for instance, is Colonel Vershinin, in Act II:

In a century or two, or in a millennium, people will live in a new way, a happier way. We won't be there to see it but it's why we live, why we work. It's why we suffer. We're creating it. That's the purpose of our existence. The only happiness we can know is to work toward that goal.

Vershinin's hopes have not worked out so well in this century. The most influential utopian idea of the nineteenth and twentieth centuries was socialism, which has failed everywhere. Under the banner of socialism Stalin's USSR and Mao's China gave us not utopias but ghastly anti-utopias. It is ironic that in the heyday of utopian thinking, in the nineteenth century, Karl Marx himself sneered at utopian thought, and claimed to be guided instead by a science of history. Of course, there is no science of history, but that's almost beside the point. Even if we could decide that some type of government or economy was historically inevitable, as Marx believed communism to be, it would not follow that this would be something we would like. If Marx had been an honest utopian, and recognized his responsibility to describe the society he wanted to bring into being, it might have been clearer from the beginning that the effort would end in tyranny. Hitler's Germany, too, started with utopian rhetoric: socialism combined with a maniac vision of a master race.

Even so, I can't believe that we have seen the last of utopia-mongering. Indeed, five nonsocialist styles of utopia seem (in various combinations) to be emerging in public debate. We had better watch out for people selling these utopias; each of these visions abandons one or more of the grand causes - equality, liberty, and the quality of life and work that motivated the best utopian ideas of the past.

The Free-Market Utopia

Government barriers to free enterprise disappear.

Governments lose most of their functions, serving only to punish crimes, enforce contracts, and provide national defense. Freed of artificial restraints, the world becomes industrialized and prosperous.

THIS style of utopia has the advantage of not depending on any assumed improvements in human nature, but that doesn't mean we have to like it. If only for the sake of argument, let's say that *something* (productivity? gross national product? Pareto efficiency?) is maximized by free markets. Whatever it is, we still have to decide for ourselves whether this is what we want to be maximized.

One thing that is clearly not maximized by free markets is equality. I am talking not about that pale substitute for equality known as equality of opportunity but about equality itself. Whatever purposes may be served by rewarding the talented, I have never understood why untalented people *deserve* less of the world's good things than other people. It is hard to see how equality can be promoted, and a safety net provided for those who would otherwise fall out of the bottom of the economy, unless there is government interference in free markets.

Not everyone has put a high value on equality. Plato did not have much use for it, especially after the Athenian democracy condemned his hero, Socrates. He explained the rigid stratification of his Republic by comparing society to the human soul: the guardians are the rational part; the soldiers are the spirited part; and the peasants and artisans are the baser parts. I don't know whether he was more interested in the self as a metaphor for the state or the state as a metaphor for the self, but at any rate such silly analogies continued for two millennia to comfort the comfortable.

In the course of time the dream of equality grew to become an emotional driving force behind utopian thinking. When English peasants and artisans rebelled against feudalism in 1381, their slogan was the couplet preached by John Ball at Blackheath: "When Adam delved, and Eve span, who was then the gentleman?" The French Revolution adopted the goal of equality along with liberty and fraternity; Louis-Philippe-Joseph, duc d'Orléans, wishing to gain favor with the Jacobins, changed his name to Philippe-Egalité. (Neither his new name nor his vote for the execution of Louis XVI saved the duke from the Terror, and he joined the King and thousands of other Frenchmen in the equality of the guillotine.) The central aim of the socialists and anarchists of the nineteenth and twentieth centuries was to end the unequal distribution of wealth. Bellamy followed *Looking Backward* with a sequel titled simply *Equality*. It is a cruel joke of history that in the twentieth century the passion for equality has been used to justify communist states in which everyone was reduced to an equality of poverty. Everyone, that is, except for a small number of politicians and celebrities and their families, who alone had access to good housing, good food, and good medicine. Egalitarianism is perhaps the aspect of utopian thinking that has been most discredited by the failure of communism. These days anyone who urges a more equal distribution of wealth is likely to be charged with trying to revive the class struggle.

Of course, some inequality is inevitable. Everyone knows that only a few people can be concert violinists, factory managers, or major-league pitchers. In revolutionary France the ideal of equality soon gave way to the *carrière ouverte aux talents*. It was said that each soldier in Napoleon's army carried a marshal's baton in his knapsack, but no one expected that many soldiers would get to use it. For my part, I would fight against any proposal to be less selective in choosing graduate students and research associates for the physics department in which I work. But the inequalities of title and fame and authority that follow inexorably from inequalities of talent provide powerful spurs to ambition. Is it really necessary to add gross inequalities of wealth to these other incentives?

This issue cannot be judged on purely economic grounds. Economists tell us that inequality of compensation fulfills important economic functions: just as unequal prices for different foods help in allocating agricultural resources to produce what people want to eat, so unequal rewards for labor and for capital can help in directing people into jobs, and their money into investments, of the

greatest economic value. The difference between these various inequalities is that *in themselves*, the relative prices of wheat and rye are of no importance; they only serve the economic function of helping to adjust production and resources. But whatever its economic effects, gross inequality in wealth is itself a social evil, which poisons life for millions.

Those who grew up in comfortable circumstances often have trouble understanding this. They call any effort to reduce inequality "the politics of envy." The best place for the well-to-do to get some feeling for the damage done by inequality may be American literature, perhaps because America led the world in making wealth the chief determinant of class. This damage is poignantly described in the novels of Theodore Dreiser, who grew up poor during the Gilded Age, when inequality of wealth in America was at its height. Or think of Willa Cather's story "Paul's Case." The hopeless longing of the boy Paul for the life of the rich drives him to give up his whole dreary life for a few days of luxury.

Another thing that is manifestly not maximized by free markets is civilization. By "civilization" I mean not just art museums and grand opera but the whole range of public and private goods that are there not merely to help keep us alive but to add quality to our lives. Everyone can make his or her own list; for me, civilization includes classical-music radio stations and the look of lovely old cities. It does not include telemarketing or Las Vegas. Civilization is elitist; only occasionally does it match the public taste, and for this reason it cannot prosper if not supported by individual sacrifices or government action, whether in the form of subsidy, regulation, or tax policy.

The aspect of civilization that concerns me professionally is basic scientific research, like the search for the fundamental laws of nature or for the origins of the universe or of life -- research that cannot be justified by foreseeable economic benefits. Along with all the good things that have come from the opening of free-market economies in Eastern Europe, we have seen the devastation in those countries of scientific establishments that cannot turn a profit. In the United States the opening of the telephone industry to free-market forces has led to the almost complete dismantling of pure science at the Bell Laboratories, formerly among the world's leading private scientific-research facilities.

It might be worthwhile to let equality and civilization take their chances in the free market if in return we could expect that the withering of government would serve as a guarantee against oppression. But that is an illusion. For many Americans the danger of tyranny lies not in government but in employers or insurance companies or health-maintenance organizations, from which we need government to protect us. To say that any worker is free to escape an oppressive employer by getting a different job is about as realistic as to say that any citizen is free to escape an oppressive government by emigrating.

The Best-and-Brightest Utopia

Public affairs are put in the hands of an intelligent and well-educated class of leaders.

THIS was Plato's vision. In the *Republic* and other dialogues Plato described a hierarchical society of peasants and soldiers ruled over by a eugenically bred class of "guardians," and in *Critias* he imagined that this was the constitution of ancient Athens, before the war with Atlantis, 9,000 years earlier. In our own times Lee Kuan Yew, the Senior Minister of Singapore, has said that only an elite, consisting of the top three to five percent of a society, can deal effectively with public issues. The rulers of the "People's Republic" of China would probably agree, except that I suppose they would think that three percent is a gross overestimate. Even democratic countries such as France and Japan recruit their powerful bureaucracies from special educational institutions -- the *Grandes Ecoles* and the University of Tokyo.

The claims of Lee Kuan Yew and others for the effectiveness of "Asian model" technocracies look pretty unconvincing after the East Asian economic downturn of the past few years. Even before that, Amartya Sen and other economists had argued that authoritarian governments do not generally

perform better economically than democratic ones, and may in fact be more at risk of economic catastrophe. But rule by an elite has much worse drawbacks.

As Alexis de Tocqueville pointed out, even if government by an elite could be trusted to be efficient and public-spirited, it would have the effect of making its citizens into children. And surely we should have learned by now that no such government can be trusted. Behind every Marcus Aurelius is a crazy relative like Commodus, waiting to take over.

There never has been a governing elite in any age that did not eventually come to give priority to its own interests. It doesn't help to choose the elite from some special segment of society. Attacking Marxism, the anarchist Mikhail Bakunin pointed out that it would be impossible to put workers at the head of government, because then they would cease to be workers and instead become governors. In *Looking Backward*, Bellamy, like many other socialists, argued that labor unions would become unnecessary once the means of production were handed over to a national industrial army, because then the workers would own their own factories. This argument was not borne out by the experience of labor in the Soviet Union, to say the least. There is no reason to imagine that a ruling elite drawn from business leaders would do any better. H. G. Wells and other utopians have imagined putting public affairs in the hands of scientists, but I know my fellow scientists too well to be enthusiastic about this proposal. Most scientists would rather do their own research than govern anyone. I have known a number of academic physics departments in which faculty members actively compete for the privilege of *not* being department chairman. Anyway, I haven't seen any signs that scientists would be better than anyone else at running a country.

Power is not safe in the hands of any elite, but it is not safe in the hands of the people, either. To abandon all constraints on direct democracy is to submit minorities to the tyranny of the majority. If it were not for the interposition of an elite judiciary, the majority in many states might still be enforcing racial segregation, and at the very least would have introduced prayer sessions in the public schools. It is the majority that has favored state-imposed religious conformity in Algeria and Afghanistan and other Islamic countries.

So what is the solution? Whom can we trust to exercise government power? W. S. Gilbert proposed an admirably simple solution to this problem. In the Savoy opera *Utopia, Limited*, the King exercises all power but is in constant danger of being turned over to the Public Exploder by two Wise Men, who explain,

Our duty is to spy
Upon our King's illicities,
And keep a watchful eye
On all his eccentricities.
If ever a trick he tries
That savours of rascality,
At our decree he dies
Without the least formality.

We just have to get used to the fact that in the real world there is no solution, and we can't trust anyone. The best we can hope for is that power be widely diffused among many conflicting government and private institutions, any of which may be allies in opposing the encroachments of others -- much as in the United States today.

The Religious Utopia

A religious revival sweeps the earth, reversing the secularization of society that began with the Enlightenment. Many countries follow the example of Iran, and accept religious leaders as their rulers. America returns to its historical roots as a Christian country. Scientific research and teaching are permitted only where they do not corrode religious belief.

It is hard to see why anyone would think that religion is a cure for the world's problems. People have been at each other's throats over differences in religion throughout history, a sad story that continues today in Northern Ireland, the Balkans, the Middle East, Sudan, and India. But even fighting over religion is not as bad as an imposed religious uniformity. Of all the elites that can oppress us, the most dangerous are those bearing the banner of religion. Their power is greater, because they can threaten punishment in the next world as well as in this, and their influence is more intrusive, because it reaches into matters that ought to be left to private choice, such as sexual practice and family life. In our own times we have had a taste of what utopias based on religious uniformity are like, in countries like Iran, Saudi Arabia, and Afghanistan, where the freedom of women is sharply limited, and holy war is preached to children.

Religious readers may object that the harm in all these cases is done by perversions of religion, not by religion itself. But religious wars and persecutions have been at the center of religious life throughout history. What has changed, that these now seem to some people in some parts of the world to be only perversions of true religious belief? Has there been a new supernatural revelation, or a discovery of lost sacred writings that put religious teachings in a new light? No -- since the Enlightenment there has been instead a spread of rationality and humanitarianism that has in turn affected religious belief, leading to a wider spread of religious toleration. It is not that religion has improved our moral sense but that a purely secular improvement in our moral values has improved the way religion is practiced here and there. People ought to be religious or not religious according to whether they believe in the teachings of religion, not because of any illusion that religion raises the moral level of society.

The Green Utopia

The world turns away from industrialism and returns to a simpler style of life. Small communities grow their own food, build houses and furniture with their own hands, and use electricity only to the extent that they can generate it from sun, wind, or water.

THIS is the sort of utopia that appears most often in modern literature -- for instance, in the science fiction of Ursula Le Guin. But modern writers tend to locate their utopias on other planets. No one has described a rural utopia here on earth better than William Morris did in 1890, in *News From Nowhere*. (His title, by the way, is an echo of More's *Utopia*, which might come from either the Greek *eu- + topos*, meaning "good place," or *ou- + topos*, meaning "no place." The second meaning was also picked up by Samuel Butler, in *Erewhon* (1872), which of course is "nowhere" spelled backwards -- except that it isn't, which shows how hard it is to be perfect.) In Morris's future England, Hammersmith and Kensington are again small villages; the national government has become unnecessary; and the Houses of Parliament are used to store manure. Morris gives a lovely description of the unpolluted countryside seen by his hero in a long rowing voyage from London to the upper reaches of the Thames. It is all very pretty, but some of us would miss urban London.

It is common for those who don't have to work hard to romanticize hard labor, especially agricultural labor. Shakespeare's *Henry V* imagines that no king can sleep as soundly as a peasant,

Who with a body fill'd and vacant mind Gets him to rest, cramm'd with distressful bread;
Never sees horrid night, the child of hell, But, like a lackey, from the rise to set Sweats in the

eye of Phoebus and all night Sleeps in Elysium; next day after dawn, Doth rise and help Hyperion to his horse, And follows so the ever-running year, With profitable labour, to his grave.

I doubt that any real peasant would see farm work this way. In the words of Mel Brooks, "It's good to be the king."

Some utopians -- like Wells, in *The World Set Free* -- would like to restore the natural environment of the past while keeping the benefits of technology, by radically reducing the earth's population. This seems hard on all those who would be unable to enjoy utopia because they had not been born. Others, like Morris, imagine that a nontechnological utopia could support the same population as at present. I don't believe it, but even if I did, I would object to abandoning the technology that gives us heart defibrillators and elementary-particle accelerators. In fact, Morris cheats. He refers to some sort of "force" that helps with necessary work that can't be done by hand; but how could something like this exist without an industrial establishment?

Hostility to technology also promotes hostility to science, which gets additional fuel from the discomfort produced by what science reveals about the world. In a speech at Independence Hall, in Philadelphia, on the Fourth of July in 1994, the Czech poet and statesman Václav Havel protested that "we are not at all just an accidental anomaly ... we are mysteriously connected to the entire universe." He called for "a science that is new ... postmodern." One of the items that Havel would like to include in this new science is the Gaia hypothesis, according to which the earth and the living things it supports form a single organism. If the Gaia hypothesis is any more than a poetic way of expressing the obvious fact that life and its environment act on each other, then it is mystical mumbo jumbo, but it has a nice Green tinge that Havel obviously likes. This business of picking out the comforting parts of science and condemning the rest is an old story. The people of future England in *News From Nowhere* engage in some sort of science, about which Morris says only that it is different from the "commercial" science of the nineteenth century. This is an amazing comment on the science of Charles Darwin and James Clerk Maxwell. One gets the impression that the work of science in Morris's utopia consists of collecting pretty rocks and butterflies.

The Technological Utopia

The development of information processing, robotics, synthetic materials, and biotechnology increases productive capacity so much that questions about the distribution of wealth become irrelevant. National borders also become irrelevant, as the whole world is connected by a web of fiber-optic cables.

HERE is a tendency to exaggerate the rate at which our lives will be changed by technology. We still have a whole year to go before 2001, but I doubt that Arthur C. Clarke's vision of commercial flights to the moon is going to come true by then. Individual technologies reach plateaus beyond which further improvement is not worthwhile. For instance, the experience of riding in commercial aircraft has not materially changed since the introduction of the Boeing 707, more than forty years ago. (The Concorde is an exception that proves the rule; it has never paid for the cost of its development.) Computer technology clearly has not yet reached its plateau, but it will -- probably when the miniaturization of solid-state devices runs into the limits imposed by the finite size of individual atoms. Successful technologies also tend to be self-limiting once they become available to the general population. I doubt that it is possible to cross Manhattan from the East River to the Hudson River faster by automobile today than it was by horse-drawn streetcar a century ago. The Internet is already beginning to show the effects of overcrowding. I tremble at the thought of two billion air-conditioners in a future China and India, each adding its own exhaust heat to the earth's atmosphere.

Still, however long it may take, new technologies will inevitably bring great changes to our lives. Far from leading us to utopia, some of these changes may well be frightening. Technology certainly gives

us the power to wreck the environment in which we live. Also, I can't imagine anything more destructive of common feeling among the world's people than a new medical technology that would extend youth for decades but would only be affordable by the very rich.

Then there is the problem of what people would do with themselves if technology freed most of them from the necessity of work. As Freud taught, our greatest needs are love and work. Work gives us a sense of identity and the dignity of earning our living, and it gives many of us our chief reason to get out of the house. In "The Machine Stops," E. M. Forster imagined a world of perfect comfort whose people are isolated from one another within an all-caring machine. Their lives are so appalling that the reader is glad when the story's title comes true.

Some utopians imagine that the problem of work will solve itself. Wells vaguely suggested that after technology had brought universal plenty, everyone would become an artist, and Bellamy thought that when workers retired at age forty-five, many of them would take up the arts or the sciences. I can't think of any better way to spread general misery. Even a lover of the arts can read only so much new literature, hear only so much new music, or look at only so many new paintings or sculptures, and in trying to choose the best of these everyone will tend to be drawn to the same works. Consequently, whatever joy they took in the work itself, the great majority of writers, composers, painters, and sculptors would spend their lives without having anyone else notice their work. The same would apply to scientists. By now it is impossible for a theoretical physicist to read all the papers even in some narrow subspecialty, so most articles on theoretical physics have little impact and are soon forgotten.

Morris excluded modern technology from his utopia not only because he was in love with the Middle Ages but also because he wanted to preserve work for people to do. Although modern technology has made work more unsatisfying for many, I think that Morris was wrong in supposing that this is inevitable. The mindless, repetitive quality that makes routine jobs on assembly lines so hateful is also just the thing that would allow them in the future to be done entirely by machines. Technology creates better jobs, from auto mechanic to astronaut. But there is no guarantee that the advance of technology will provide all people with work that they like to do, and in the short run it converts the badly employed into the unemployed.

One of the things that attract some people to technological utopias is the prospect of a world unified by technology. In the utopia of Wells's *The World Set Free* all national boundaries are dissolved; there is a powerful world government, a single world language (English, of course), worldwide adoption of the metric system, and interconvertible currencies with fixed exchange rates. There is still a United States in Bellamy's *Looking Backward*, but its citizens look forward to eventual world unification. Physicists (who invented the World Wide Web) already participate in an early version of world unification. For instance, throughout the world we share a typesetting code for mathematical symbols known as LaTeX, based on English. I recently did some work on the quantum theory of fields in collaboration with a Catalan physicist who was visiting Kyoto; we sent our equations back and forth between Texas and Japan by e-mail, in LaTeX.

I am not so sure that world unification is an unmixed blessing. It has the side effect of shrinking the psychological space in which we live. A few hundred years ago large areas of the map were blank, leaving the imagination free to fill them with strange peoples and animals. Even Queen Victoria, who, it is said, tried to taste every fruit grown in the British Empire, never had a chance to try a mango or a durian. Now we can fly anywhere, and we buy mangoes in our local supermarkets. This is not my idea of utopia. Wouldn't it be more exciting to eat a mango if it could be done nowhere but in India? What is the good of getting somewhere quickly if it is no different from the place one has left?

More is at stake here than just making travel fun again sometime in the future when everyone can afford it. Isolated by language differences and national boundaries, each of the world's cultures represents a precious link to the past and an opportunity for distinctive new artistic and intellectual creation. All these are put at risk by steps toward world unification.

Now I have said hard things about five different styles of utopia -- so what do I have to offer? No easy solutions. There is no simple formula that will tell us how to strike a balance between the dangers from governing elites and those from majority rule or free markets, or between the opportunities and the hazards of new technology. I can't resist offering a utopian vision of my own, but it is a very modest one.

The Civilized Egalitarian Capitalist Utopia

Production remains mostly in the hands of competing private corporations, overseen by a democratic government that is itself overseen by independent courts; these corporations continue to use high salaries along with status and authority to attract workers and managers with special talents, and dividends to attract capital. Those who receive a high income are able to keep only part of it; to prevent the rest of their income from being simply taken in taxes they give much of it to museums, universities, and other institutions of their choice, reaping benefits that range from moral satisfaction to better seats at the opera. These nonprofit institutions use the donations to invest in business enterprises, eventually replacing wealthy individuals as the owners of industrial corporations.

NOT very original? No, it is in fact a natural development from some present trends. Nonprofit institutions have been the fastest-growing sector of the American economy over the past fifteen years. But the tide of American politics now seems to be flowing in the opposite direction. We are in the process of giving up our best weapon against inequality: the graduated income tax, levied on all forms of income and supplemented by taxes on legacies. A steeply graduated income tax, if accompanied by generous allowances for the deduction of charitable contributions, has another virtue: it amounts to a public subsidy for museums, symphony orchestras, hospitals, universities, research laboratories, and charities of all sorts, without putting them under the control of government. Oddly, the deductibility of charitable contributions has been attacked in whole or in part by conservatives like Steve Forbes and Herbert Stein, even though it has been a peculiarly American way of achieving government support for the values of civilization without increasing government power.

I don't offer this modest utopia with any great fervor, because I have doubts whether men and women will be content with an individualistic life of love and work and liberty and equality. People have seemed also to need some exciting collective enterprise that, even if destructive, would lift them out of the everyday round of civilized life.

The individualistic lives of propertied European men at the beginning of the twentieth century were about as pleasant as one can imagine: these men moved in a world of elegant cafés, theaters, country houses, and relatively unspoiled countryside; their comforts were seen to by deferential women and servants; and for those who cared about such things, there were exciting innovations in science and the arts. Yet there is plenty of evidence that many of these men were afflicted with such boredom and directionlessness that they felt as they went off to the Great War, in 1914, like "swimmers into cleanness leaping." Now war has become intolerable. Perhaps someday we may find a better common cause in the colonization of the solar system, but that is far off -- and even then most people will be left here on earth.

Can we change ourselves enough to be satisfied with a civilized society? The dream that behaviorists and Marxists had of changing human nature seems to me the worst sort of exaggeration of the capabilities of science. In *Three Sisters*, Chekhov has Baron Tuzenbach reply to Vershinin's utopian dreams.

Well, maybe we'll fly in balloons, the cut of jackets will be different, we'll have discovered a sixth sense, maybe even developed it -- I don't know. But life will be the same -- difficult, full of unknowns,

and happy. In a thousand years, just like today, people will sigh and say, oh, how hard it is to be alive. They'll still be scared of death, and won't want to die.

Facing a new millennium we can share some of Vershinin's hopes for utopia, but when it comes to judging the chances of really changing the way we live, no doubt most of us would side with Tuzenbach.