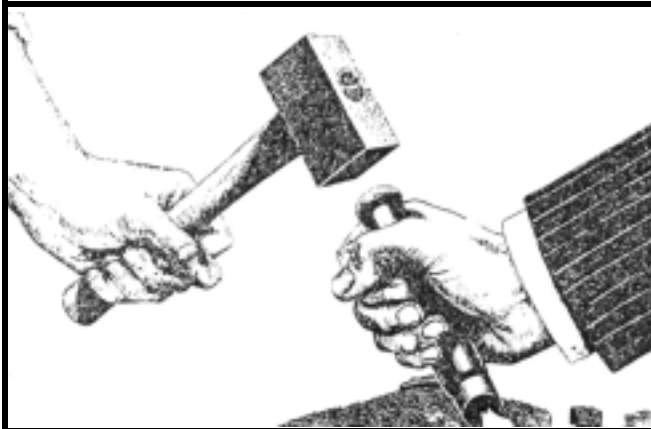


TECHNOLOGY AND FREEDOM

SOME REFLECTIONS ON PLANNED TECHNOLOGY AND ITS DANGERS

INGEMAR NORDIN



UTOPIAS

In political philosophy, the concept of utopia has played a central role. I will start with a distinction between two kinds of utopias.

The first kind I will call *political/social* utopia. This is a society founded on a political and moral ideal. Usually its author has taken his pet set of moral norms and carefully and with great detail tried to model a whole society after it.

Examples abound: First and foremost there is Plato. In *The Republic* he translates most of his philosophical wisdom concerning good and evil in terms of a genuinely good state. It is an authoritarian and collectivistic society, strictly divided into different categories of people. In theory a small group of philosophers rules. But in practice their hands are tied since Plato himself has set the fundamental norms so tightly that it is hard to see what they should do except administer and preserve everything as it is. Indeed, the only purpose of the individuals

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www.libertarian.co.uk email: admin@libertarian.co.uk

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Ingemar Nordin is Associate Professor, Department of Health and Society, Linköping University, Sweden, and the author of *The Rationality of Technology*, and *Private Property: On The Moral Foundation of Property*.

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FOR LIFE, LIBERTY AND PROPERTY

and the classes are to maintain the state itself. All other values are subordinate.

In Plato's second utopia, *The Laws*, he sets a pattern of utopia-construction which most political thinkers have followed ever since. Here we have a direct translation of moral norms into laws. Every law is motivated by showing that its purpose is to make the citizens morally better. By implementing Plato's laws a state will mould its population into a superior stock and save the individuals from the evil and sin which surely would be their fate if they were left alone. This is a "moralist state". A state where there is very little room for individual, private moral choice. And consequently, a state which has taken away the moral responsibility of the individual.

There are many other names that we can place among the political/social utopians: Thomas More, Campanella, socialist utopians like Owen, Bellamy and Morris, and perhaps Marx.

They all share the common trait that they show a special concern with other persons' moral and social life. Each says that the way to save people from sin and evil is by a detailed regulation of their lives, according to the author's own high standards.

The *scientific/technological* utopia has one idea in common with Plato's *Republic*, namely that the ideal state should be ruled, or at least guarded, by a scientific elite. Its author, is usually wise enough not to pretend that he himself knows how to rule a society in every detail. But he takes it for granted that scientists and technologists as a group can do just that. Knowledge is essential to a well-governed state. Consequently, those who know most should rule.

The main difference between the political/social utopia and this one, is that the scientific/technological utopian gives the experts a free hand. Laws and regulations should in principle be based on solid, future knowledge and not laid down in advance. The author's main concern is therefore not to translate ethical systems into laws, but to construct suitable institutions for research and education. And he often also specifies in great detail how the government itself should be organized in order to guarantee the existence of such institutions.

Let me name a few names in this group. First there is Bacon. His *New Atlantis* is well known. In this well-organized country, knowledge-seekers are sent out in all directions all over the globe to collect useful information. Manufacturers and technicians stay home and construct wonderful machines. Scientists make experiments in order to discover the hidden secrets of Nature. And the philosophers mould all this information into useful knowledge for the state. Other names and groups are Comenius, the Puritans, the Royal Society, August Comte, Jules Verne, Skinner ...

This kind of utopia constitutes what we today would call a technocratic state. It rests on two assumptions which seem to be unavoidable. The first assumption is that there is a unique, rational way in which a society can be ruled. That implies that there is no real need for the existence of diversity of political ideas and ideologies. Once we have gained knowledge of the only sensible method or technique of how to rule, everybody will be happy and there is no sense in quarreling. The diversity of values that we may now observe in existing societies is merely a consequence of the fact that people do not know their true interests and needs. Those interests and needs could in principle be determined objectively and satisfied in a rational way. The second assumption is that the objective needs in question and the rational means to satisfy them can be known through science and modern technology.

I will now make a few critical remarks concerning the utopian tradition.

II CRITICISM

Critics of the utopian school, such as Edmund Burke and Karl Popper, have pointed to the utter folly in trying to fore-go tradition and empirical experience in planning a society. No one can know in advance exactly how a new law or institution will turn out in practice. The most likely result (as history has shown again and again) of detailed planning, is cruelty and human suffering. The grand declarations of equality and brotherhood turns inevitably into tyranny.

In later times, the utopians - aware of how nasty their ideal society may look if stated bluntly - have tended to less and less specific of how it will look. But if we go back to the early utopians we see clearly why there are good reasons to keep a sceptical mind.

In Thomas More's *Utopia* everything is superior to the decadent contemporary Europe. There is no greed, since there is no private property. The inhabitants of Utopia do not even use money. Instead they have what More calls "fathers" who see to it that everybody gets what he needs. These elected supervisors also check that everybody does his share of manual work, which unfortunately is still necessary in production. There is strict control of how people live and move about. Now and then mass-transportation of human labour is needed. There are fifty-four cities, all exactly alike. Special passports are needed if you wish to visit other cities than your own. Everybody is dressed the same. In leisure time, no idling is permitted. No bars or gambling halls. Meals are taken in centralized facilities. And so on. If anyone happens to break any of these modest rules, he will be harshly punished. One such punishment is slavery. Apparently, the difference between slaves and ordinary citizens is that the former are chained and work more. If anyone is foolish enough to protest against this treatment then, according to More, "they are slaughtered like wild beasts".

Another famous utopian, Tommaso Campanella, named his ideal society *City of the Sun*. This nation is ruled by a high priest. As in Thomas More's vision the lives of the happy citizens are regulated in great detail. There is of course no private property. The state rules where you live and where and with whom you sleep. Everybody (except of course the representatives of the state) is equal in every respect. For example, nothing less than the death penalty awaits any woman who puts rouge on her cheeks, or wears high-heeled shoes, in order to appear beautiful. For more serious crimes, the punishment is, naturally, even more severe.

One may wonder in what sense this kind of society could be looked upon as an *ideal*. There is no sign of tolerance or understanding of human weakness here. Indeed, these utopians even seem proud to show their readers how harsh and unfor- giving they are against dissidents. Why is that?

Well, one reason for this cruelty, I believe, is the very moral engagement of the utopians. They have the feeling that, unlike most other people, they really care for the poor, for justice and for equality. The obvious and, as they see it, only remedy for these evils is simply to *forbid* poverty, injustice and inequality. So, the argument goes, all who break these laws against evil must be evil themselves. They know for sure that they are on the good side - all others are their enemies and rightly deserve everything they get. Yes, it would even be wrong to show mercy.

III OBJECTIVE NEEDS

Let me now turn to the scientific/technological utopia. The idea of planning a society according to the best available scien-

tific and technological knowledge is, I believe, very appealing both to rational minded conservatives and to socialists. For example in my country, Sweden, we have had a long experience of this unifying value. The idea is also quite common among professional scientists and technologists. I myself find it morally disgusting and pseudo-scientific. There are many reasons for this, and I will present a couple of them here.

First, there is the question of objective, or "true", interests and needs. This concept has been ruthlessly used, ever since the beginning of known history, to stop people from making their own decisions. There have always been priests, emperors, elected politicians - and now scientific experts - pretending to know what is best for you. We must now ask ourselves, can other people judge what is good for you?

I am not going to argue that the expert is not trustworthy, or anything like that. Obviously, an expert may know things about the world which you do not. And it would be foolish not to listen to him. I am not even going to argue that there is no sense in which one could talk about "objective needs" in general. But I will deny that these things are sufficient for making rational decisions for other people. Because deciding what to do involves a scale of preferences among values and needs. And this, in turn involves strictly personal knowledge.

It is quite easy to state various fundamental needs. The biologist says that human beings need food, shelter and exercise. The sociologist can easily point to the necessity of social relations, security and communication. But not even these fundamental needs are so absolute that they cannot be overthrown by other values. For example, the poet may prefer hunger and poverty to giving up his devotion to the arts. Would he be happier if a government forced him to eat and be rich, but to skip poetry? Or who can know but me if I prefer philosophy to social relations? I "need" to meddle with philosophy at least as much as I need social relationships. Still "philosophy" or "poetry" is not listed by any expert among the fundamental needs. Even life itself is not an absolute need for everybody. The mountaineers, or the lunatics who jump out from "Troväggen" in Norway with a parachute, gamble willingly and coolly with their own lives. In effect, what they do is that they accept the ten percent risk of dying to get the ninety percent chance of a big thrill.

Obviously, these scales of preference differ widely from person to person. From an individual point of view there is no absolute distinction between "fundamental" needs and other values. The difference is merely a question of degrees. Consequently, there cannot be such a thing as a purely scientific definition of needs and interests for everybody. Experts can of course make decisions concerning other people's interests. But they cannot make *rational* or *scientific* decisions. The very concept of a scientific management of people's lives is pseudo-scientific.

IV PLANNED TECHNOLOGY

A second argument against the technological/scientific state is an extension of von Mises' famous argument against centralized economies. According to von Mises there is no way in which a central organization may obtain all information needed in order to calculate rational decisions. In making such decisions, the price mechanism of a free market plays an important role. Normally, prices give an agent information about other people's preferences in a world of limited resources. No single individual, or group, needs to know all the details of how to produce various goods or how to bring it within his reach. All he needs is the price of the goods he wants to use and the details of his own project. The knowledge needed for

the total production within an industrial society is spread out among millions of agents.

With price regulations this knowledge is partly deformed. In a completely planned economy, there is no connection at all between production and people's wants. We get effects that are common in for example the Soviet Union: a mountain of king-size shoes in the stores, but no shoes in ordinary sizes. Thousands of ten litre pots, but hardly any one or two litre pots. The farmers give their pigs newly baked buns to eat instead of the harvest he delivers to the state owned bakeries. And so on.

Now, let us leave this argument concerning the production of goods here for a moment and turn to the production of science and technology instead. There is a difference here that must be discussed.

I take it that most people see a difference between the production of consumer goods and the production of scientific theories. For one thing, we do not expect goods to have properties like truth or falsity. We do not "consume" theories in the same way as we consume ice-cream or computers. Goods cost money, while theories are for free once they are created. Hence, the logic that sets the rules for how to produce scientific theories is quite different from the logic behind the production of goods.

In fact, scientists usually value exactly the opposite things in science to those we are used to valuing in industrial production. A scientist does not try to say what people merely wish that he would say. He speaks the truth, or at least tries to speak the truth, regardless of what others believe or wish. "Consumers" have no say in this process. That is the hallmark of science. The hallmark of industrial production, on the other hand, is of course to produce the things that the consumer wants. We may say that the scientific activity, unlike many other activities, is "autonomous", or self-governed.

There is nothing strange or frightening about this fact. Having Truth as the eternal goal of scientific activity must, by the very nature of the concept, imply a certain amount of autonomy. Most people want it to be that way. But what about technology?

A completely autonomous technology would be a horror. There is no value in having technology for its own sake. But an autonomous technology, or at least a state similar to autonomy, is, I will claim, the most likely consequence of a centralized and planned technology.

An autonomous technology could be characterized as follows. It produces techniques not according to the personal wishes of the users, but according to objective, supposedly scientific, criteria. Good technique is identified with the technically advanced. Consumers of technology have no legitimate function except as means for the further progress of technology. Everyone who uses technology is merely a subordinate cog-wheel in the global enterprise. The rationale behind this enterprise is that there is one best way to solve any given problem. And all problems are technological. There is simply no reason to try to find out what technique to produce by letting consumers choose subjectively between the various alternatives. Technological and scientific research is trusted to handle that problem for us.

An *ideal* technology, on the other hand, should produce usable techniques, and nothing else. For this purpose technologists are trained in various sciences and in the art of invention, testing and construction. This special knowledge constitutes his profession. But in order to produce, not only machinery that functions in a purely technical sense but also, *usable* machinery, he needs to know whether the piece of machinery he is

about to construct will serve any purpose that potential *consumers* may have. And he must also know whether these consumers will find his techniques more suitable for this purpose than other kinds of existing techniques. Otherwise no one will find any use for his invention. And hence it would be useless.

This kind of knowledge is obviously a subset of the knowledge that von Mises talks about. It is a knowledge that is spread out in society. It belongs to the consumers of technology, not to the technologist. Nevertheless, the ideal technologist cannot do without it. Following von Mises' argument we may now draw the conclusion that rational technology is inherently dependent on a free market! Compare this with science, where the market as such plays a secondary role at most.

If rational, or "good", technology is logically dependent on the free choice of the consumer, what will happen in a country with a planned technology? Well, obviously the technologists are there deprived of a vital piece of information for their work. They are forced to work in the dark. There is no possibility to really test the usability of their products. They produce what in their own minds seems to be good and usable technology. Consequently, we will inevitably have an irrational and twisted technological development. Effects similar to the ones we mentioned in connection with the Soviet economy will show up. People will use equipment A to do B where they really should use equipment C. The technologist spends a lot of money on developing machine X, when he would do much better to go for the development of machine Y. And so on.

V PARAPRAXES

This argument shows that a centrally planned technology is incompatible with the ideal. But it is not sufficient to show that it will produce a situation similar to what we would have with an autonomous technology. In order to do that we need a more specific theory of how technology works. What is the structure and dynamics of technology?

The theory that I will base my argument on here does not view technology as a single homogeneous entity. Instead, it takes account of the fact that there are many techniques, and that these techniques often compete with each other. Certain techniques with a wide range of applications constitute what I call a "Paraprax". For good reasons this term alludes to Thomas Kuhn's well-known concept of a paradigm. A paradigm is a set, consisting of a scientific theory, metaphysical theories, scientific ideals and tacit knowledge of how to use the theory in solving scientific problems.

Likewise, a "paraprax" consists of a central technique, auxiliary techniques, practical know-how and technological ideas. Examples of central techniques are computer technology, gene technology, combustion engines and various energy techniques. The auxiliary techniques are there to expand the range of application of the central technique. For example, computer technology may now be used, not merely for purely scientific and military purposes, but for a whole range of tasks. Everything from the care of the handicapped to the management of libraries is computerized nowadays. The computer paraprax has been very successful. The goal of a paraprax is simply to expand, to solve more and more practical problems, and to outrun its competitors.

But to solve practical problems involves more than just to give a proper response to external requirements. A member of a paraprax sees his central technique as a more or less universal remedy for all practical problems. He looks at the world with coloured glasses. His technological ideas are his own paraprax. To solve problems with the help of the central technique is the only rational way to do it. He sees every problem as a prob-

lem within his own paraprax; solvable but perhaps not yet solved. External needs and problems are translated and reformulated in terms of the paraprax. For example, the computer paraprax has now succeeded in transforming my writing needs in terms of computers and programs. When writing this essay for instance, I needed things like a computer with a certain capacity. I needed a suitable wordprocessing program. I had to consider computer problems such as what can be done on the ordinary keyboard, what can be done with the function keys and what can be done by making special additions to the program itself. Besides that a new set of needs is created with respect to the printer. A whole new world of needs has opened up since I decided to regard my writing as something which could be done with computers. Various techniques become part and parcel of our worldview. We say we need a car, a TV and a telephone, when our needs more generally could be formulated as a need for transportation, entertainment and communication respectively.

My claim, then, is that needs in general are impregnated with the very means we use in order to satisfy them. To a large extent, we formulate them in such a way that they suit the existing techniques. Consequently, a main task of a new paraprax is to reformulate our needs in terms of the new technology.

On a free market the existence of parapraxes is not a major problem. For as long as competition is allowed, no paraprax will hold an absolute monopoly. Consumers are certainly under the pressure of technological propaganda. But the propaganda often carries different messages. No paraprax has a complete privilege when it comes to defining our needs and problems. The consumer is free to compare competing formulations and to choose between them. Some writers will still prefer the "pen and paper" paraprax to wordprocessors.

But imagine a society with a "planned" technology. What will happen to our needs, given that technology consists of parapraxes? Well, it should be quite clear that the planners, the technocrats, must be members of parapraxes themselves. But since the technology of this society is centrally planned, consumers of technology are not allowed to be the judges of the competition. No, these conflicts must be settled by internal struggles for power. Those technologists who win this internal fight see to it that their parapraxes are thoroughly established. This is quite rational, given the paraprax logic. The technologist does not try to establish his paraprax for purely egoistic motives, or anything like that. But his very worldview is such that he knows for sure that his favourite technique is the most rational and usable technique there is. He wants to do good, and to plan the technology of the nation in a rational way, and he does so in the best way he knows.

This does not mean that there is only one paraprax in such a society. You cannot open tin cans with cars, or eat computers. But given various domains, say, energy, transportation, nutrition, etc., you have one single type of technology to satisfy the respective needs. All energy problems become, say, nuclear energy problems. All transportation problems are translated into, say, problems of railroad transportation. And problems within farming are always solved with new irrigation methods, like turning rivers around and such.

Anyway, the result is something very similar to autonomous technology. For every problem and need in each domain, there exists one, and only one, best way to solve it. The consumer has no say in the development of technology. He must merely use what he gets. The only way to break up a technological monopoly is to win a political battle among the technocrats. Until then, and by definition, no other technique is better or more rational than the existing one. So much for technocracy.

A centralized economy does not have to be technocratic. It is not technologists and scientists who run the Soviet Union for example. But it seems very likely that in those areas where technologists do have some power, the logic of parapraxes takes hold. As a westerner one is often astonished when observing their use of technology. For example, it is well known that the Soviets for a long time refused to take advantage of the new electronic technology in science, in the hospitals and so forth. Instead they developed better and better mechanical devices. Why was that? Why have the Russians, year after year, chosen to invest huge sums of money in a senseless mechanization of agriculture, when other methods seem to be more appropriate? Why did they build all these canals for transportation in the twentieth century, instead of railroads? And how about the investments in collective transportation in general; is it really a purely ideological phenomenon? Or could this be explained in terms of parapraxes? Indeed, is not the famous remark of Lenin, that communism is socialism plus electrification, simply a part of the propaganda of the electricity paraprax?

Whether we explain certain phenomena within planned economies in purely economic, in ideological or in technological terms, one thing seems clear; the system is a precondition of technological monopolies. And, moreover, such monopolies seem at least to be very likely in Marxist states. Totalitarian political leaders have to make technological decisions. This gives them two possibilities. Either they decide according to their own unprofessional minds, or they ask the technologists they feel that they can trust. In a state where science and technology are a part of the official ideology, as in the Soviet Union, it seems obvious that technologists do take part in the decision process. Hence, the existence of paraprax monopolies in this society is almost inevitable.

VI UTOPIA REVISED

Given these arguments it should be clear that planned technology cannot be ideal, not even from a purely technological point of view. Technology needs a free market in order to work well.

However, this does not imply that technology is unproblematic. A free citizen of a free society is well advised to take great care in his choice of technology. And I do not have only the hazards concerning health in mind. Technology is sometimes tightly interwoven with our lives. For example, to choose to have a car is partly to choose a lifestyle, because you quickly become dependent on it. The existence of a car in the family affects future choices of where to live, where to buy a summerhouse, how much money to spend on other important things, how to spend holidays, and so forth.

Such conspicuous choices are of course of even greater importance to the utopian, who wants to live in a whole society created according to his ideals. For him, the freedom of technological choice is absolutely vital. In most countries technologies like forestry, farming, building, health care, radio and TV are strictly regulated and standardized. What possibilities does the utopian have, on a voluntary basis, to create a truly *different* society?

What the utopian needs, whether he has a social/political or a scientific/technological utopia in mind, is an unfettered technology, constrained only by the laws of liberty. He needs the freedom to abstain from certain techniques and the freedom to develop new variants that are better suited to his own purposes.

The only Good State is the state which *allows* people to build the Good Society.