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Technology and Authenticity

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The problem of authenticity in biotechnology and bioethics sheds some much-needed light on the larger significance of science and technology for our way of life. It is a problem often approached in recent years through the question of biotechnological enhancement, and indeed this is a useful path into the larger problem, even pointing to the essence of it.

Our way of asking the question of authenticity as it relates to biotechnological enhancement has almost become a cliché. Is native or achieved excellence of higher worth than excellence obtained through technology? Would skills and capacities be less ours if they went beyond what we regard as our set of biological capacities? Is biotechnology a form of cheating? We must make an effort to see that these familiar questions in fact gesture toward a still quite unfamiliar way of thinking about science and technology.

Consider the set of practices commonly thought of as human enhancement: cosmetic psychopharmacology, techniques to improve memory and intelligence or perhaps to eliminate unpleasant memories, genetic enhancement of muscles, interventions to vastly extend the human lifespan, and so on. If these interventions could make us stronger and smarter and allow us to live longer without changing anything else about us there would be little reason to be suspicious of them. But how can we even conceive of such a pleasant prospect? How can we expect them not to change anything that we now value in our lives if their explicit goal is to change what we do and how we do it? As Michael Sandel puts it in *The Case Against Perfection*, "it is one thing to hit seventy home runs as a result of disciplined training and effort, and something else, something less, to hit them with the help of steroids or genetically enhanced muscles." Enhancement, he implies, does not work by letting us achieve what we were unable to achieve before. Rather, it changes what we are trying to do.

In Sandel's particular example, the reason for suspecting that the activity is no longer the same seems to be that the performance is now less the performance of the athlete and more the result of biotechnological procedures and mechanisms. It is the outcome of a different process,

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initiated with a different purpose. It is no longer simply what happens on the baseball field (or on the track or in the ring) that matters but what happens in laboratories and clinics. The moment of truth is no longer the moment of truth.

This shifting in time and place comes closer to explaining what might trouble us about performance enhancement than all the talk of fairness or integrity. There is nothing inherently wrong with using steroids, of course, if we can be assured that they preserve the structure of individual performance. We should not be dazzled or terrified by the magical properties of this or that substance. The structure of the human activities for the sake of which they are being used makes all the difference. Enhancement-seekers take steroids in order to stimulate protein synthesis and improve the intensity with which it is possible to train and exercise without muscle breakdown. What one is able to do is no longer the same as before, but this change has not been brought about by any of those activities for the sake of which the steroids are being used. The performance, therefore, is not really enhanced but redefined. One obtains more but not from the same source as before. There is no increase in what the agent has accomplished, only a change in what he has done.

The problem is not that steroids or other enhancement substances are unfair or that they create a wedge between effort and achievement. They do no such thing, or at least no more than differences in native abilities or many other methods to improve performance. The problem is rather that human enhancement risks driving a wedge between human action and the external events to which it corresponds, so that the consciousness of our actions becomes illusory.

In its 2003 report *Beyond Therapy*, the President's Council on Bioethics suggests that by using biology and biotechnology to alter our native endowments, by applying increasingly rational and scientific means to human action, "we paradoxically make improvements to our performance less intelligible." We would be making human activity less intelligible to each individual because these new agents of improvement operate prior to and independently of the activity being improved. The report notes that, even if steroids or stimulants were to become perfectly legal and safe, most athletes would still be embarrassed or ashamed to be seen taking their injections before a competition, demonstrating their chemical dependence. This seems quite right. Such an athlete would surely try to preserve the magic or illusion, but by so doing he becomes an illusionist as much as an athlete. Those observing his performance would become witnesses to a kind of artistic creation, something closer to a movie or

a play than to sport as we know it. It is true that a judgment of athletic beauty or excellence might still be possible, but this will have to be understood to be a matter of opinion or perspective. The true meaning of sport is altogether different.

If someone wants to know how fast he can run the only way to determine this is to actually try running as fast as possible and keep trying until a more or less final answer has been obtained. It is not that different from solving a mathematical problem. Training on the track and working on the problem could well be compared as human activities aimed at revealing some fact about the world. But if we are allowed to use various enhancement techniques, then it seems that there are no limits and, in the final analysis, how fast we *can* run depends on how fast we *want* to run, at least in the sense that significant improvements cannot be expected to stop until we have stopped aiming at them. A determination is made with reference to our preferences and not to things external to them. If one athlete uses steroids and the other does not, we have no way to compare their performances. Dan W. Brock, in his essay "Enhancements of Human Functions: Some Distinctions for Policymakers," gives us a good example of the loss of objectivity that this is bound to entail: If a computer defeats the world chess champion, may the engineer who implemented the code that runs the computer claim that he beat the champion? Why not, after all?

We like sports not only because they showcase human excellence, but also because they offer us a striking image of modern freedom. Each athlete is placed in circumstances concocted so that whatever happens will follow directly from what he has done or failed to do. If a player misses a decisive third pitch or fails to score the winning goal there is nothing else to know; the outcome would have been different if he had done something differently. This is what makes losing so difficult to accept. A game is nothing but a series of unique occurrences, which means that the activity of playing a game is also unique; it does not exist before it happens. It truly is a creation out of nothing, free of all limitations but also of all assistance from the outside. Everything is up for grabs, depending solely on what the agents do, and how well—which is precisely why chemical or genetic enhancement seems to be such a dangerous threat to the authenticity of a sporting competition.

The deed of an enhanced athlete is difficult or impossible to explain by exclusive reference to his athletic activity. It cannot exist on its own. It is the sort of occurrence for which an explanation must be sought in some other event. But if the explanation resides elsewhere we might as well turn the cameras to what happens in the laboratories. We want to be

present at the decisive moment; after all, that is why we watch a game, less for entertainment, at least in the case of a true connoisseur, than to satisfy our curiosity—to find out what happens and to know why. One need only look at the faces of the defeated to understand that in sports there really is an incontrovertible truth, independent of opinion, and such truth is what draws us to the stadium or compels us to watch the television screen. It is part of a larger pattern in modern life, its icy realism, the urge to see things for what they are and free ourselves of every illusion. We no longer trust in appearances, we know that everything is caused and we want to know who caused it and how.

In this sense, the prospect of performance enhancement will make even native abilities suspect. In whatever we do there will lie the possibility that it has already been done or determined in advance and out of sight—that we are missing the *real* action. Why not dispense with the human agent altogether, why not replace it with an observable mechanism that makes clear the explanation for the deed? Why would we want to preserve a particular human practice or activity and work behind the scenes to make it present to us what it cannot on its own? If someone were by means of a brain implant to acquire superhuman memory, it would be foolish to be impressed by his displays. We would be like someone who does not understand, who is ignorant of how such things are done.

This presents us with a rather serious problem. If every human and social practice must be explained with reference to some other event or events producing it, does that not cause us to lose our capacity to understand the world around us? After all, we already live in a world where scientists themselves use various drugs to boost their brain power, so it is not clear that anyone has a genuine understanding of the most fundamental processes, that anyone is in a position to look at biotechnological enhancement from the outside and judge its correctness: no one is in charge. A world of radical human enhancement could potentially be a world where every activity and every event would be out to deceive us. Think of this age as a new age of superstition. The modern rationalization of life would give way to an endless spectrum of appearances produced by other appearances.

This prospect raises the contrast between the objective and subjective perspectives in descriptions of human action—between deeds viewed externally and deeds as intended works of doers. Consider how you would report on a sports competition for a newspaper. In the age of native excellence the story is a straightforward one. What the athletes see themselves as doing and what is in fact happening coincide. One runs, jumps, tries to score and this is exactly what an external observer sees. There is nothing

else going on, and this coincidence undergirds the beauty and appeal of modern sports.

Now imagine that some newly enhanced or invented ability is being tested or employed in the sporting event you are supposed to cover. You will obviously report on the failure or success of this technology or procedure. You may tell the story of how it was developed and by whom. The objective explanation no longer bears much resemblance to what the agent is trying to do, and in this sense he is no longer the crucial agent, or his activity the crucial moment. As Ray Kurzweil, an ardent proponent of radical human enhancement, argues in his book *The Singularity Is Near*, our lives will once again come to be defined by magic, a riveting illusion created by the distance between things as they look from our perspective and what they are in reality. It is the defining mark of magic that we do not see what is really happening and therefore that what we have access to must appear miraculous and incomprehensible.

Authentic Beginnings

In an important respect, the question of whether human life is best understood from the perspective of the agent or the perspective of a disinterested observer arises as soon as life itself begins, and is at stake in the questions we ask about that beginning. Human beings are both a natural creation and their own creators, both objects of nature and artisans of experience. For legal philosopher Ronald Dworkin, the idea that human life is sacred or inviolable seems to be rooted in the combined traditions of nature and art, in the facts of our biological existence and our willed existence. In *Life's Dominion* he explains the idea of the sacred in terms of a process or enterprise requiring long labor and great effort, the sort of investment that is impossible to replicate in an age of technical reproduction.

The human basis for the sanctity of life, he writes, is most immediate and clear "when pregnancy is planned, because a deliberate decision of parents to have and bear a child is of course a creative one. Any surviving child is shaped in character and capacity by the decisions of parents and by the cultural background of community." But of course the natural element of our existence is also inescapable. When Dworkin stops to consider whether human life begins at conception or shortly thereafter he shows no hesitation, as well he should not, for "it seems undeniable that a human embryo is an identifiable living organism at least by the time it is implanted in a womb, which is approximately fourteen days after its conception." The conclusion is inescapable: "From that point on, abortion

means the extinction of a human life that has already begun, and for that reason alone involves a serious moral cost." Human life begins with the emergence of a natural biological organism, even if, in Dworkin's thinking, we are most human when we exercise our will.

The abortion controversy hinges on the conflict between these two perspectives. What you think about abortion depends on how much relative importance you attribute to the natural and the human contributions to nascent life and to the reality of our own existence. Thus, if you think that a human life is created not just by natural forces but more crucially, in Dworkin's terms, "by personal choice, training, commitment, and decision," you are likely to be concerned with those ambitions, talents and hopes that could be wasted because of an unforeseen pregnancy, and less with the extinction of a biological entity.

Dworkin argues that we always in a sense decide in favor of the human perspective—that we think of ourselves in moral rather than biological terms. If we are called upon to decide whether one or the other is more important, it must be the case that the independent value of natural creation is after all to be judged from a human perspective. We have no other perspective for judging. Some people regard life as essentially biological. Others see it above all as a human creation. The disagreement is a matter of opinion, and so itself occurs in the realm of human creation. In the absence of an objective answer to the question of which is the most important element of our humanity, Dworkin concludes the state has no business intervening in individual decisions that bear on this question.

But this cannot be a satisfactory solution. It is no coincidence that the strongest moral and political argument against abortion dates back to the rise of the biological sciences in the late nineteenth century, for the argument becomes more appealing to those who have passed through the discipline of scientific or objective thinking and have been exposed to a sophisticated rhetorical denunciation of the idealist tradition in philosophy and ethics. The case against abortion puts biology before human choice, and is therefore in a sense an argument from the scientific worldview. That worldview suggests that an ideology that elevates the role of human choice is at root a flattering illusion about the human condition. One should instead pursue a fully disenchanted outlook and affirm the essential connectedness of human life to the biology that sustains it and, in the process, accept the affinity between man and animal. Deprived of all reassuring illusions, the scientists argue, we cannot but accept that human life does not rise above biological life, that all supposed moments of transition to mental and conscious existence tread bare upon the biological fact.

If, from a subjective perspective, the decision to have an abortion is meant to reassure us of our powers to shape our own lives, the chosen act does at the same time, and from an objective point of view, take place in a biological world that is alone amenable to interpretation in scientific categories and language. An uncompromising man of science would have to admit that an abortion cannot be described more rigorously than as the extinction of a human life and that all other descriptions are better left to poets and philosophers. Precisely if one believes that thoughts, feelings, and aspirations arise from biochemical processes, he has to deny that our conscious thoughts and plans and hopes should enjoy a superior moral status when they come up against other biochemical processes. In a world from which, thanks to science, every conscious thought and desire has been excluded or explained away, it does not seem that one can draw a significant distinction between the life of the fetus and that of the mother.

Indeed, the scientific rejection of the individual perspective creates an even larger problem for the traditional case for abortion rights. If a right is to be fully justified, if the rights of everyone are to be defended by everyone, then rights need to be based on an objective or impersonal description of the actions they are meant to protect. It really is as simple as this: in a modern liberal society, every person should be free to do what he wants. The complexity arises from the fact that he must be free to do what is the same for everyone and not just what he, whose action it is, thinks is happening. What does not exist in common cannot be protected in common or by a common power. And yet, if we are to think objectively, only facts can be accepted in common; human opinions cannot.

A woman may sometimes want to have an abortion even before she thinks of the plans and aspirations that motherhood would render impossible. She may be acting not from her own subjective perspective, in the realm of thoughts where she alone can know and decide, but from the perspective of the specific situation in which she finds herself and within which an abortion is, all things considered, the best course of action. Examples might range from a situation where the life of the mother is at risk to cases where carrying the pregnancy to the end would put in grave danger the economic subsistence of the whole family. Terminating the pregnancy is exactly what she wants to do, so we may say that the action is objectively wanted and, as a consequence, perhaps warranted, even if the situation making it necessary was not chosen and, in fact, could never be wholly chosen. Abortion would be justified not because of what it makes possible in the future but in light of the circumstances within which it takes place.

The intuition underlying these examples is that an abortion within articulably specific situations can be freely willed. Abortion *generally defined* cannot. This is easy to prove because the moral and political legitimacy of the notion of a right to abortion derives from the fact that, in itself, it is not desired: no woman gets pregnant so that she can have an abortion. Defenders of a general right to abortion claim that a woman should be free to do what she wants in her own life and at the same time they claim that no woman wants to have an abortion. The expression reveals that the action has been split in two. An abortion is objectively unwanted even when subjectively chosen. It is driven, therefore, not by objective circumstances but by subjective judgments of them. It seems that in order to pursue some individual plan one has to bring about an event or an outcome that is not itself wanted or desired.

As the issue is generally debated, we have the impression that one must either argue that abortion should be permitted because it rests on fundamental judgments of value or that it should be criminalized as a violation of innocent human life. But both of these positions are deeply inadequate. Neither provides an accurate description of the underlying reality, which means that neither, insofar as they are ethical theories of human action, can provide an account of what is actually taking place. It is certainly possible to question our actions from an external perspective, independent of human thought. What is this action, apart from the concepts that allow us to refer to it? No judgment of value can eliminate the reality within which it is affirmed, but neither can this reality, by itself, contain a judgment of innocence and a prohibition of harm. All the force of the naturalistic argument would be lost if, after stressing its ability to see events as they really are, independently of our thoughts, it were later to pronounce on whether these events are moral or immoral. The view of human life as an object of nature can therefore offer us no guidance for action, even as it denies the reality of those things we would seek to use as guides to action. We are left, therefore, deprived of the old guides and not provided with new ones.

Authentic Action

From the point of view of action, therefore, modern science in general and biology in particular are perhaps best understood as casting doubt on or even attempting to refute the way we naturally encounter the world, what Wilfrid Sellars called the "manifest image" of human life. They show how many of the things that appear to be real when we think about them have no correspondence in the external world. What biology cannot do

is shed light on what should take the place of these illusions. It is entirely negative, a refutation of choice and free will that does not replace it with anything else. Science puts in doubt every element of human experience and in so doing threatens to destroy it.

Our world is always first discovered from our personal perspective. Science shows us that this world is a projection of the mind, but then leaves us uncertain as to how it will be able to extract from our immediate sensations a core of objective reality. We may attempt to separate illusion from reality, but both were received in the same bundle and it is more or less inevitable that even those things that initially survived the onslaught of critical reason will in the next wave suffer the same fate as the more obvious human constructions we have abandoned as illusions. In order to discover the whole world with the objectivity of science one must experience it without prior assumptions, without using anything received from the world as it was originally experienced and which science still accepted, if only so that it could dissect and explain. If the objective or external perspective is to provide a guiding principle, therefore, it must be introduced when it is a question of how to live and how to experience the world. It can only hope to serve us when the question is *doing*, not *knowing*.

This is a crucial distinction. While *science* offers us an objective view of things that were originally subjective, *technology* is not a mode of seeing what already exists but a mode of acting, and therefore almost always of creating what does not yet exist. This helps us understand the meaning of authenticity. Authenticity is the equivalent of scientific objectivity in the sphere of action: an action or experience is authentic if the contradiction between the action and reality has been eliminated. Of an authentic action it would make no sense to say that it has an effect upon reality or the world, since reality is not conceived as something external to it. There is nothing undesired about it, and it does not rely upon a play of natural causes and effects for which one takes no responsibility on the assumption that they occur in the realm of nature, divorced from our perceptions. Everything happening has to be part of the action. Action, understood this way, is not defined by the person who acts; he does not impose a particular meaning on it. The action creates, makes, produces—but what it creates is something independent of his thoughts and ideas. He acts with the same objectivity of nature, as nature is defined by those who would distinguish it completely from the realm of human action. In a word, the authentic actor acts naturally. He does not put up an "act."

Think about an action you might undertake. Consider it as an event in the world, as something other than an action, consider it as someone

looking at it from the outside rather than from your own standpoint as agent. If your action is no longer the same, if it becomes something entirely different and unrecognizable, then there is something wrong with it, something false or inauthentic. Moral philosophy traditionally requires that an action coincide with its universal idea, unbounded by particular circumstances and, thus, that it can be extended to every agent. We should instead want it to coincide with *itself*, as the movements of an athlete do.

Consider someone who is happy and feels pleasure because things are going his way. He has made the world an extension of himself. Nothing happens which he could really wish to be different and he knows this because he made it happen himself. He has learned the art of mastering human situations. Now compare him to the poor fellow who feels just as happy because he has taken a powerful mood brightener. Whatever happens to him is not a result of his actions. Events would make him very unhappy were it not for the fact that he no longer cares for events. Events are now so absolutely irrelevant that he will be happy no matter what happens. They are part of the external world and operate according to forces that he does not master because he never learned how to master them.

The man who is naturally happy has made the world his own. It is this man, we should remember, who represents the force of modern technology and its original inspiration. Most of what we have come to regard as the promise of biotechnological enhancement is a radical betrayal of the modern technological project. Its means and its ends turn us away from the world and the drive to master it.

Wishful Thinking

The German philosopher Johann Gottlieb Fichte was convinced that nothing could ever come to exist independently of us, because everything is necessarily related to our thinking. But in fact, thinking is a receptive faculty which must presuppose some object and cannot drive itself. We must always think *about* something and when we do not, thinking itself ceases. Of course we may then claim that the object is a product of the thinking mind and this may well be true of the object as thought. The problem is that, together with this object, we must also think of the object as it would be if we were not thinking about it, the object outside the thinking mind.

On the other hand, Fichte is certainly right to affirm that this notion of an object outside human consciousness about which we can nonetheless have an idea is a great absurdity, for we would be thinking about something that, in our own thinking, exists without being thought. An object

which is both an object of thought and something outside the mind is deeply contradictory. But notice that this is the case because in the process of creating the knowledge of an object we have left uncreated the object of this knowledge. Creation makes objective knowledge possible; its result, as it sits in front of us, is proof of that; it is not a figment of our imagination. As the late cultural critic Neil Postman pointed out, whatever else we may come to doubt, even if it is what older generations thought most sacred and indubitable, "it is clear that airplanes do fly, antibiotics do cure, radios do speak, and, as we know now, computers do calculate and never make mistakes." Technology, by dint of its success, makes objective knowledge possible; in that way, technology is a search for truth, not only comfort or happiness.

The progress of modern science is certainly due to its mania for objectivity, but it is precisely this progress that creates a new threat. With new knowledge come new opportunities for human power and human action—which is to say, technology may just as easily isolate us from the world as inspire its conquest and exploration. Technology combines human practice with scientific knowledge, it combines passion and objectivity, by no means an easy task.

In the attempt to understand and even define the structure of modern technology, we must of course always be aware of its close affinity to the objectivity of science. Technology starts as a method to deal with the growing realization that human action as traditionally understood is little more than an illusion, that we are not the ones truly in charge of the events of our lives. There are many things happening to us that we were not responsible for bringing about, and yet these are the things that are most fundamental precisely because they are the ones that cannot be denied. The most important events in our lives are things we did not plan: our births and deaths, our loves and diseases.

That last category—disease—is especially instructive about our notion of technology. We have sought to eliminate the specter of disease from human life; it is, perhaps, the best example of how an event imposed on us frustrates and rules over our freedom of action. A person may feel healthy and happy even as a dangerous disease takes over his body, but sooner or later reality catches up. The project of modern technology is to eliminate this ceiling of harsh reality placed above our heads, always ready to deny the reality of our own efforts.

There is something confusing about this project because it seems to provide no guidance for human life and human action. Get rid of disease and then what? Get rid of disease for the sake of what? But the confusion

is only apparent. Without technology everything we do is in a sense inauthentic or false. Every horseback ride, every sea voyage may be the beginning of the end, the fatal moment when our death becomes certain without our being aware of it—when what we are doing is not the same thing as what is happening to us. The shape or form of an individual life is almost entirely divorced from the consciousness of the person living it. Today a great portion of mankind lives in a world in which most diseases have become extremely improbable—a scandal and an insult. This is a world in which our actions coincide much more perfectly with events than ever before. What we do and what happens to us are not so far apart. But precisely this achievement has introduced a new kind of objectivity, because a technological society is a society organized with a certain shape and social habits that are just as independent of our wishes as the natural phenomena of old, so that the attempt to exclude all natural external influences on our lives has resulted in a way of life which is just as objective as the scientific perspective on nature. This is what authenticity amounts to.

Rightly understood, the power of technology was never a power over human beings but a power over nature, defined by opposition and in contrast to the human. A power over ourselves would not solve the problem in response to which technology was first conceived: the imposition of external factors that frustrate all our activities. We may strive all we want to make *ourselves* conform to our desires, we may even be entirely successful in such an effort, and it will not contribute in the least to subjecting the *world* to our power. It is not truly the conquest of nature we are engaged in if all we care about is redesigning ourselves in obedience to our wishes and desires. And if in our actions we look only to what we want, it is inevitable that we will do it only to realize that we have achieved nothing, since our actions have been an elaborate preparation. To act is to face the challenge of an obstinate world, but here the world within which we act exists within our action. The danger is that our actions will happen within themselves, that no one will be so foolish as to act before he has carefully prepared the stage for the action. We no longer do merely *what* we want but do it in the *world* we want. All we get in return from our actions is what we have already put into them. It is a strange exchange and a strange investment when we receive exactly what we have given. No action takes place because nothing really changes.

The biotechnology instauration seems to be in this crucial respect a return to the world before technology. For what distinguishes modern technology from older technical inventions is the attempt to make action scientific, independent of human perceptions; but most biomedical

procedures which have recently come to public attention are attempts to pursue human wishes and desires, some very old, to their optimal conclusion. Biotechnology is intimately connected to human life not because of the object of its research but because it assumes a human perspective in its own workings: it looks at the world from the perspective of human thought and desire. After surveying the whole history of technology in his 1934 book *Technics and Civilization*, Lewis Mumford could already sense the arrival of a new age, which he fully welcomed, when technology would be assimilated to human needs and desires. He called this new age, "already visible over the edge of the horizon," the "biotechnic period," the period when we will use our machines and energies for the sake of "more vital and humane purposes." The organic was beginning to dominate technology. Mumford saw quite clearly that the "claims of life," as he put it, once expressed solely by social and intellectual movements and groups opposed to technological progress, "are now beginning to be represented at the very heart of technics itself." Biotechnology deserves its name not because it exercises its powers over life, over microbial, animal or plant cells, but because it exercises them in the name of life. "We can now see plainly that power, work, regularity, are adequate principles of action only when they cooperate with a humane scheme of living."

The old technology was a monster of inhumanity, forcing us to discover the world after it had been deprived of every recognizably human trait. Mumford rightly spoke of the ice of the machine. It was sublime in this sense. And as Jacques Monod insistently warned us, objective knowledge, in all its coldness and austerity, is not of a kind to gain a place in our hearts. By contrast, the new biotechnology is human, lovable, and touching, fast in the pursuit of all the desires of our youth and sometimes our lost childhood. The growth in the power of modern technology is a danger because, as always happens with great power, advanced technology creates a strong impulse to forget about the world and follow the dictates of our own minds. It is in this respect profoundly unscientific.

The decisive characteristic of the new biotechnology lies in the fact that it is a form of control over human capacities, desires, and powers. The object of human power seems to have been lost from view and all that is left is power itself—power exercised from a human perspective. What is it a perspective of? We have not been told, because there is nothing there. The human being who has become the object of technology is not different from the human being who uses it. It is no longer the threat of an inhospitable world that we strive to control, a foreign reality that demands to be conquered. This threat will have been done away with, and

with it medicine will have been done away with. The biotechnology of enhancement is a power without counterpoint. It is the opposite of medicine, which always combated what was most foreign and fearsome. Think of death and how it demonstrates that things exist beyond ourselves, that all we may hope for is to live in the world, and for a while only. If death can be conquered, we will be alone, not in the world but without it.

What to Do?

If it is true that the peril of the biotechnology revolution lies in its radical embrace of individual choice over objective reality, then we can hardly recommend the political control of technology—since the democratic process tends to favor policies that leave each person free to pursue goals and desires with mainstream appeal. This would likely have consequences which we would do well to reflect upon as carefully as possible. We are much too sanguine about the necessary conditions for politics and democracy. We assume that a solid agreement between different people can be obtained by appeal to moral intuitions and obligations of all sorts, without attending to the fact that no two people, however well inclined, can reach an agreement if there is nothing to agree on, or if the facts simply look radically different from their personal perspectives. Agreement between people is always dependent on the existence of hard facts, a sphere of objective reality; the rise of the modern state and modern complex societies was a product of the difficult but persistent effort to replace human behavior motivated by a personal interpretation of the world with actions and activities that are guided by objective measures. But to organize a society on the basis of objective knowledge rather than personal opinions and perspectives is a daunting and fragile endeavor.

The question facing us is not the political *control* of technology but the political *defense* of technology against its most perennial threat, our powerful desire to deceive and be deceived. Freedom is the ability to do what we want, but even as we do what we want we cannot expect to be able to pretend that we are not really doing it, or that we are doing something else entirely. Such self-delusion is one thing we are not free to pursue, if we are to be politically free.

If there is any meaning to the promise of increased technological power over our lives it must be that we develop means to control what happens to us and not simply what we happen to desire or what we are capable of doing. When we make use of the law to prevent interference with individual freedom, we do so not because such interference was undesired or

unwelcome, for it may in fact be neither. We regard any event for which we are not responsible and which escapes our control as unacceptable in some measure. If we had to rely on needs and desires, then every political action would be impossible to justify, since people have many different ideas about what should be done.

This gives us a working principle when we turn to the political regulation of new technologies. Do they increase our power over events or do they render us increasingly passive in the face of events we cannot control? The athlete who uses steroids may be capable of greater things than before, but is he in charge of these feats? Are they *his* feats? An athlete may be unaware that he is using steroids without in any way impeding their effects—showing that events take a course of which he is no more than a dependent part. Here lies the decisive contrast between natural ability and biotechnological power. Our natural capacities may pose hard limits on our desires, but with the right training and the right equipment and medical support, they may also be brought under our control and used in our actions and activities. Chemical or genetic enhancements are a way to influence human action from the outside. Precisely because they are the sort of power to which one will gladly submit, enhancement technologies should be regarded as an interference with our freedom, perhaps beneficial and attractive, but an external power nonetheless. They represent, ironically, the return of a repressed nature.

Now contrast that passivity to another technical procedure that has recently garnered attention. If a professional golfer has corrective eye surgery to improve his vision, he does so in order to become even more aware of the external environment within which he acts and in order to attend to every feature of this environment—even such small details as individual blades of grass. Only a top golfer can know the meaning of these details and only a virtuoso will be able to take advantage of such knowledge. If he is able to achieve more it is by virtue of his extraordinary abilities. Here any improvement, when and if it takes place, is brought about by those very abilities for the sake of which we use the procedure, so we may speak of a genuine enhancement. All the eye surgery does is extend the reach of our own faculties and thus raise the stakes for failure or success.

The claim we sometimes hear that technology cannot be controlled or resisted has a great deal of truth to it. Remember, technology is a way of acting independently of personal choices and even of every personal perspective. If we start with what exists independently of us then it should be no surprise that we have little power over it. It is quite true that technology advances without any respect for human choice. The whole

point is to dispense with our views, our opinions, and our desires. In *The Technological Society*, Jacques Ellul famously argues that "the milieu into which a technique penetrates becomes completely, and often at a stroke, a technical milieu." The process is a lot less demonic than Ellul makes it seem, however, for it is the nature of technology to define itself in terms of its milieu. But these considerations are also much less decisive than one might think, for in the end they raise the fundamental question of how technology is to be understood. It does not follow from the fact that modern technology escapes political control that every invention and mechanism tagged as technological is to have these high claims vindicated and recognized. This is simply a corollary of its original independence from every human perspective.

In a way, the political regulation of technology is itself technological. Regulation is a political technology insofar as it strives to increase our control over events. The first duty of technology is to know how it works and what it brings about. The problems of technology are cybernetic, problems of how to master certain situations. But there are vast regions now in biotechnology where there is no agreement between what technology intends to do and the actual situation that it contemplates: the romantic idea of a better athlete becomes the grim reality of doctors and injections. If in the process of using these new means we create a new set of events or a new social reality operating behind our backs, a careful practice of regulation is called for until the things we do no longer depend on something being done *to us*. In the end all we may hope for is that technology will become, like science, and even more than science, the search for truth.