

Do Means Matter? Evaluating Technologies of Human Enhancement

New technology often gives us new ways to do something we have always done, or at least always wished we could do. And new technology is often accepted as good or moral because it helps us achieve established ends more easily or efficiently. In medicine, for instance, new techniques such as noninvasive surgery are quickly accepted because they achieve the same ends as the older techniques, and in fact do so with certain advantages. And in ethics, one sometimes hears an argument of this form: The new technique is acceptable because, after all, we have always achieved the same end through another means.

But what if the end in view is something like improved classroom performance by grade-school children? This end can be achieved through reduced class size (using traditional or established means) or through prescriptions for Ritalin for some of the students (a new means). If the traditional ends and means are good, is the new means also good? Does using Ritalin instead of reducing class size to achieve this end make a moral difference?

Or what if the end is heightened cognitive performance, which can be achieved through classic educational strategies but which some day in the future

might be achievable by genetic techniques, possibly even by human germ-line genetic enhancement? Again we might wonder: If the traditional ends and means are good, is the futuristic means? Would using genetics instead of education to achieve this end make a morally significant difference in the meaning of the end?

ment, or that our philosophical or religious traditions warn us against it, while technology seems to offer a new temptation. It is rather that we in Western culture are enhancement enthusiasts. In Christianity, for example, personal enhancement is the central organizing motif: Human beings are redeemed (some would say "born again") into a new mode of existence. And virtually everyone in the West agrees on the importance of education or on other forms of human effort in pursuit of one's goals. Life for us is one long project of self-improvement.

So it is hardly the case that technology offers enhancement while Western religion or philosophy defends the human status quo. On the contrary, technology is worrisome precisely because it offers a new means to achieve the old ends. For when we ask about the ethics of a new technology of human enhancement, we can readily imagine this argument being made: We have, after all, always sought to achieve these goals through traditional means; the new means seek the same goals, but they achieve them more quickly or efficiently; therefore, the new means are good, perhaps even better than the old means.

The prospect of hearing this argument, especially when applied to psychopharmacology or to human genetic manipulation, immediately gives rise to a worry, at least for some, that we are missing something important—that we are sliding too easily from old means to new, without looking carefully for the moral difference between them. "We have always done this by other means" may be comforting, but is it sound moral reasoning? Or so the worry asks.

Two Arguments and Their Limits

What lies behind this worry? Does it point to an important intuition about new means and their relationship to old means and old ends, or is it merely a form of nostalgia or technophobia? In order to unfold this concern more fully, two arguments have been suggested. First, it is sometimes thought that old means are in some sense natural, while new means are artificial. The objection here is not the naive claim that

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The question of means, though it can arise in relation to therapy or treatment, becomes especially difficult when we turn to the prospect of medical or scientific means of human enhancement. The reason is not that we in Western culture are against enhance-

nature is always good and artifice bad, or that by "nature" we mean "traditional," which is good, while by "artificial" we really mean "nontraditional," which is bad. The objection may be more forcefully stated in this way: It is natural to human beings to nourish and indeed to enhance themselves and their children by means of good diet, education, moral example, or religious activity. Parents who do these things for their children are to be praised for doing what human parents naturally should do. Furthermore (and more important), these activities are not so much means to an end—such as enhancing our children or equipping them to get ahead in a competitive world—as they are the natural expression of parental affection. As such, they are never simply replaceable by other means, which might include anything such as vitamin pills, music lessons, special sports instruction, or psychopharmacology. It is not that any of these other means are necessarily bad or inappropriate in the right situations; they are just not the sorts of things that human parents are naturally expected to do for their children, or that human beings are naturally expected to do for themselves.

While this argument has serious limitations if seen as an argument against unnatural or artificial means, it does point to an important insight, namely, that not everything we do is a means to an end. Some things are done simply out of self-respect, or out of love for another, or out of a sense of what is appropriate in a relationship, such as that between parent and child. A

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mother does not hug her newborn in order to enhance its future emotional and cognitive state, although we now know that this will occur as a result of her action. She hugs her infant for the sake of love and joy, not as a means to an end. So to suggest that some future pill might accomplish the same end is to commit a category mistake. A pill is not therefore bad; it simply occupies a different moral space, and its legitimacy needs to be argued on other grounds than by saying that it achieves the same thing as a mother's hug.

For people of religious conviction and practice, the observance of the rituals of a tradition is not so much a means as an end. Observing one's faith may make one feel "closer to God," or it might even improve one's health by helping relieve stress or by providing systems of social support. But religious people do not follow the practices of their faith *in order to* achieve these ends; rather, they do them because they believe that

they live in such a universe, or in the presence of such a God, that worship is the natural or fitting response. People worship, not because it gets much accomplished, but because if there is a God, it is the right thing to do. Once again, some future pill might accomplish the same effects as religious practice; but to suggest that it achieves the same ends as religion is to

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misunderstand religion, for the practice of religion is not about achieving ends but about a right relationship with that which is ultimate.

Now of course, as culture and technology change, "what parents naturally do for their children" or "what people naturally do for themselves" also changes. We today regard it as a fairly natural thing for parents to read books to their children by incandescent light, something which could not be done before light bulbs, or, for most people, by any light, before the printing press. So again, the argument's value is not in helping us decide whether new means are right or wrong but in confronting us with the instrumentalism that characterizes so much of our thinking.

The second argument is this: Assume that new means are effective in achieving traditional ends, such as athletic or intellectual accomplishment. The new means, such as psychopharmacology and genetic alteration, are perhaps more efficient or easier than the traditional means. But for that reason, they should be opposed, because there is a value in the traditional means themselves, quite independent of the ends they achieve. There is, after all, a glory and a dignity in human accomplishment attained the "old-fashioned way," through sweat and struggle, sometimes against great odds. It is something like the mountain climber who struggles to the top of a great peak, but then on flying home ascends quickly by jet over the top of the mountain and, looking down at the summit, feels cheated of the value of the original climb. Technology, precisely because of its power and efficiency, seems to cheat us of the experience of accomplishment, which is something valued in distinction from the achievement of the end.

The significance of this argument lies in its calling attention to the value that inheres in certain means, over and above the value found in the end considered by itself. The value in climbing the mountain peak—the physical and mental discipline, the experience of the gradually opening vistas, the sense of personal accomplishment—is entirely distinct from the value of

being at the summit. Attaining the summit by a new, technological means might be a good thing under some circumstances, but if the new technical possibility generally discouraged people from attempting the old means, the extra value that lay distinctly in the old means would be lost. Indeed, there may be some areas of human activity in which the value that is distinctive

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to the means far exceeds the value found in achieving the end. Mountain climbers are likely to claim this argument for their sport. If it is correct, then a new means will be a poor trade-off. It is not so much that people would be cheated by technology but that they would be tempted to cheat themselves through technology. This argument, by calling attention to what we might lose, warns us of the cost of cheating.

The argument should not, however, be taken as a categorical objection to the use of new means, for the simple reason that while new means may relocate our human struggle, they do not eliminate it. The fact that I write at a computer makes writing easier by eliminating retyping and other frustrations, but writing itself is an intense struggle, and it will remain so under any technological condition. The technological advance does not eliminate the struggle so much as relocate it; indeed, it makes it possible to eliminate secondary aggravations and focus attention on the core struggle at hand, namely, expressing new insight in just the right words. Even if technology increased our cognitive ability itself—giving us not just faster computers but faster brains, so that we could calculate or write or think more clearly—these activities would still be a struggle in the face of even greater intellectual challenges which we human beings would inevitably set ourselves. Therefore, any concern that new, technological means eliminate human struggle altogether seems ill-founded. At the same time, the argument offers an important warning, namely, that we should consider carefully the value that is distinctive to the old means, value that could be lost if we simply replace old means with new.

Ends and Other Effects

It is worth exploring how our anthropology (or conception of the human) becomes a factor in this discussion. A strong anthropological dualism would permit us to say that there are physical and technological means that affect the body and even the brain, but that

there are also social, psychological, and spiritual means that affect the self or the soul, and that these two categories do not compete or overlap with each other. Any amount of future technological alteration of the brain would leave human beings in roughly the same social and spiritual predicament in which we currently find ourselves.

If we reject such dualism, we will recognize that already with psychopharmacology and in the future with genetics, it is possible to alter the brain in ways that alter the self or soul. If so, then these questions quickly arise: Is the alteration of the self by technical means the same as its alteration by traditional means? Is there a morally significant difference between different means and their effects? If so, can an analysis of this difference offer us any guidance in making decisions about the proper use of new technologies?

I want to consider each of these questions. First, is the alteration of the self by technical means the same as its

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alteration by traditional means? I will argue that it is not. Now if we define what we mean by "alteration" narrowly, as a specific, measurable end, it may be possible to achieve the same end through technology as through traditional means. But if we agree to such a narrow definition, we will have already made an important decision about the relationship between a specific end to be achieved and the full range of effects that result from our use of one means as opposed to another. That decision, to focus on a narrow definition of an end, is consistent with a broad tendency of modern thought toward that which is specific, measurable, abstracted from its full context of meaning, and therefore "thin." This tendency of thought contains a built-in prejudice for technology, for by defining ends narrowly, it allows us to think that technology achieves them.

The alternative to such "thin" description is not dualism but the recognition of the essential "thickness" of human experience, even when it is described strictly at the genetic/neurological level. For instance, in saying that a pill achieves the same effect as prayer, we might mean that the pill makes us feel the same way, or that it raises the level of serotonin or other key neurotransmitters to the same extent as does prayer. We can certainly criticize this claim at its psychological level: Prayer and the pill do not really make us feel the same way, for even if the effects are experienced as the same in some respects (relaxation, confidence, self-assurance), in other respects (an awareness of the



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obligations imposed by God, for example), they are hardly the same. But we can also criticize this claim at the molecular and cellular level: Prayer and the pill do not really achieve the same neurological effects, for even if the serotonin level looks the same, prayer is a robust mental activity with countless other neurological correlates, all occurring in a sequence of neural events markedly different from the effects of a pill. Once we reject a narrow or "thin" account of change, and consider the full array of effects of any human activity, we see that significantly different means can (and often do) have significantly different effects.

So then we ask: Is there a *morally significant* difference between different means and their effects? To which, of course, I would answer yes. The weight of the significance will depend on the person making the decision between alternative means. For example, if we want to be less anxious and more self-confident and we believe this state can be attained either through prayer or through a pill, our choice will depend on whether there are other effects, contingent upon either one of these means, that are either to be desired or avoided. If we simply want to be relieved of anxiety quickly, the pill is the obvious choice. If we believe there are manifold effects of prayer, and we value

them, we might choose prayer. My point here is not that one choice is right and the other wrong; that depends on the broader matrix of values to which a person adheres. My point is simply that different means bring about different effects that may be morally significant.

The Pursuit of Advantage

As a society, we should hope that we will learn from each other how new means mix with old, whether they conflict or complement each other, and where the general warnings or dangers might lie. I will close by describing two areas of potential concern.

The first has to do with the relation between treatment and enhancement. Technologies such as robotics and computers are now being used, with widespread approval, to surmount handicapping conditions. As new developments occur in this area, the approval will likely extend from computers to pharmacology and genetics. But once we agree that any new technological means may be used to surmount some aspects of handicapping conditions, we may find it very hard to know how to define a handicap or to limit the use of technology to those cases. Unless we learn to reflect

**Enhancing Human Traits:
Ethical and Social Implications**

Erik Parens, editor

New biotechnologies—ranging from genetic manipulation to psychopharmacology and new surgical techniques—are rapidly making it possible to enhance an individual's appearance, mood, mental and physical abilities, and even personality in ways previously only imagined. In this volume, scholars from philosophy, sociology, history, theology, women's studies, and law explore the looming ethical and social implications of these new biotechnologies.

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Hastings Center Studies in Ethics

Mark J. Hanson and Daniel Callahan, Series Editors

288 pages
\$49.95 (cloth)

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more openly than we now do on human differences (and to distinguish this topic from racism and other pathologies), we might find ourselves backed into approving a technology for everyone because we want

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to approve it for some. And if we pick up the use of these technologies without a healthy regard for the differences among human beings, we are likely to make serious mistakes in judgment.

The second concern has to do with social justice. There is a growing sense that psychopharmacology is being used, not for therapy or even for enhancement in the sense of self-development, but as a booster to equip us for an increasingly competitive society. One can imagine the temptation to use genetics in the same way, to give our offspring an advantage against their enhanced competitors. When we think honestly about this, we may begin to wonder if we have not already used education for just this purpose, to give a privileged advantage to some of our offspring so that they may outperform those not so advantaged. If in fact we have used traditional means unjustly, we need to be particularly wary that new means will not fall under the familiar patterns of injustice, perhaps augmenting their magnitude. Otherwise, our tendency toward a "thin" description of effects, conjoined with our tendency to ignore differences, could bring about a relentless technological pursuit of advantage.

—Ronald Cole-Turner

Ronald Cole-Turner is the H. Parker Sharp Associate Professor of Theology and Ethics at Pittsburgh Theological Seminary. This essay is an abridgment of a chapter from *Enhancing Human Traits: Ethical and Social Implications*, edited by Erik Parens (Georgetown University Press, 1998). Printed with the permission of Georgetown University Press.