

Man or Machine?

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The third chapter of *Beyond Therapy* takes up the goal of “superior performance.” In attempting to satisfy the perennial human desire “ever to excel,” the chapter tells us, we may increasingly “find help in new technological capacities for directly improving our bodies and minds.” While these enhancements to strength, endurance, precision, concentration, or memory may initially derive from medical efforts “to treat disease and relieve suffering,” they will also be used by those who seek an edge over otherwise unimpaired native abilities.

The promise of superior performance is heady stuff, although long possessed of a certain ambiguity. Already in the *Iliad* the drive “ever to excel,” when ascribed to the wily Odysseus, is not intended entirely as a compliment, even within the framework of that highly aristocratic tale. In our own popular culture, examples abound of our obsession with self-improvement, ranging from space-age exercise equipment and dietary supplements to supermodel surgeries to the vast quantities of spam hoping to capitalize on our performance anxieties. Within this mix one can already discern a theme that becomes central to *Beyond Therapy*: in some cases, excellence is the result of exertion and discipline; in other cases, excellence is an effortless or even unaccountable outcome.

Hinting at the important fact that the quest for excellence has often been something only for a few, *Beyond Therapy* discusses superior performance using the paradigm of sports. The choice of sports proves fruitful for three reasons. First, there is a uniquely broad and public appreciation for excellence in sports, which opens the door to considering the appeal of excellence even among those who do not seek it themselves in a given practice. Second, the activities we admire in sports are not all done best by humans—cheetahs run faster, pitching machines throw harder—which invites consideration of the meaning of specifically *human* excellence. Third, sporting activities are defined by powerful conventions, both legal and ethical, of fair and unfair competition when it comes to performance enhancement. To think seriously about sports, therefore, is to think about some of the most admired and worthy human qualities, along with what might compromise or complicate those qualities.

Beyond sports, the report aims to make sense of what new enhancement technologies will mean for the myriad activities of life—work, art, warfare, education. And while many drug-based and genetic-based routes to enhancement may have therapeutic antecedents, there is no lack of research directed explicitly at the enhancement of normal abilities.

Consider, for example, some of the projects funded by the Defense Advanced Research Projects Agency (DARPA), a Pentagon group tasked with supporting research at the cutting edge. A sampling of current work suggests just how far we hope to go in making men and women into more efficient machines. As DARPA explains: “Human Assisted Neural Devices” would “noninvasively access codes in the brain in real time and integrate them into peripheral device or system operations,” allowing human beings to operate devices in the same manner that we move our limbs, by willing their actions. “Preventing Sleep Deprivation” in soldiers would eliminate “the need for sleep during an operation . . . nominally set at seven days.” “Exoskeletons for Human Performance Augmentation” would produce “self-powered, controlled, and wearable exoskeletal devices and/or machines” to “increase the speed, strength, and endurance of soldiers in combat environments.”

Such enhancements have extraordinary implications. Particularly revealing are the cases that illustrate how the line between person and equipment may be eroding. Speaking of direct brain/machine interface (BMI) of the sort sought by “Human Assisted Neural Devices,” Miguel A.L. Nicolelis of Duke University and Mandayam A. Srinivasan of M.I.T. speculate:

Given the significant degree of plasticity documented even in the adult brain, repeated use of BMIs will likely transform the brain itself, perhaps more rapidly and extensively than what is currently possible with traditional forms of learning. For example, if a robot located locally or remotely is repeatedly activated via a BMI, it is likely that cortical areas specifically devoted to representing the robot will emerge, causing the robot to effectively become an extra limb of the user.

If true, this suggests that a human being so enhanced—say, by adding the ability to operate a remote crane—would experience the disconnection of the remote machine as an amputation. The lack of enhancement would be experienced as a defect. Little wonder that Nicolelis and Srinivasan acknowledge that “the full extent to which BMIs would impact human behavior is vastly unknown.”

What guidance does *Beyond Therapy* provide for navigating our looming encounters with these technological unknowns? What are the moral and social issues at stake? The report suggests that some of the most obvious ethical concerns—inequality of access, undue coercion, negative side effects—do not in themselves get to the heart of the matter.

Worries about unequal access to enhancement technologies often ignore the fact that our natural capacities are unequal by nature. And a narrow focus on distributive justice masks an even deeper question: How much is our admiration of excellence based on appreciation of effort, and how much on the achievement of a result that is in some way absolutely best?

Coercion would most likely arise in America from competitive social and economic pressures—a problem we see already in the use of steroids among professional athletes. But it is also true, as the authors of *Beyond Therapy* point out, that any quest to be the best will be “constraining and pressure-filled by nature.” By seeing all coercion as misplaced, we might fail to distinguish between defensible and indefensible pressures, or between progress and corruption in a given human activity.

The possibility of harmful side effects from enhancement technologies will always be worrisome. But the deeper dilemma is not simply the regulatory question of what is “safe” but more fundamental questions about the proper shape of a human life. Some danger, after all, is central to noble activity. The pursuit of excellence in one area of life will inevitably create distortions in others. The question is how far such distortions can go before the quest for excellence becomes destructive of the very humanity of the one undertaking it.

Having shown us why the most obvious concerns are not the deepest concerns, *Beyond Therapy* strives to offer, in outline, a picture of genuinely *human* excellence, a realistic account of what it means to live a fully *human* life. In doing so, the Council stands against some of the most powerful ideas—new and old—behind enhancement efforts. It dips into very difficult waters—thinking about the relationship between mind, body, and the “dignity of human activity.”

The argument begins with a respect for—but hardly an acquiescence in—the “naturally given.” The point is not that nature has created us the best of all possible beings, or that our circumstances in nature are ideal. Unlike most other animals, we are capable *by nature* of fundamental alterations to our naturally given condition, and much that is valuable in human life stems from just such alteration. But we are also limited by being *embodied* in the way we are, and by the specific qualities of our *individual* bodies, and by the changes to our bodies *over time*. We are not “hardwired” to accomplish our ends, and yet we are not responsible for building what we are from the ground up.

The idea that we should respect some of the limitations of our given humanity, and the belief that our limits might be inextricably linked with our virtues, stands in stark opposition to those who proudly advocate a “post-human future.” These advocates (variously called “extropians,” “transhumanists,” or “extinctionists”) see human life as a temporary stage in an ongoing evolutionary process, by which what is given will inevitably change. Since we have the power to modify the given, there is every reason to use it to direct evolution beyond the given.

Our successors might see us as we see our pre-human ancestors: as primitive cousins. After all, isn't the notion of a "fundamental" limit simply an artifact of the technological capacities of a given moment? Machinery has long allowed us to surpass the limits of human strength; what is the difference between using a crane operated by hand to lift tons of steel, and lifting those same tons with a crane operated as a third hand by BMI?

The difference is that we don't have three hands, and being two-handed creatures may be significant for living fully and truly as human beings. We are embodied in a particular way. Enhancements that seek to make the most of our embodiment are distinguishable from those that seek to alter it in completely novel ways. Enhancements to the body itself are distinguishable from enhanced performance through the use of tools.

This argument will never convince those who see our bodies as machines, as complex assemblages of molecular parts, whose workings become more manipulable the more we understand them. In this view, the history of our interactions with tools is a story of relatively crude interfacing between two different machines. But today, neuroscience, artificial intelligence, and nanotechnology are opening the door to more efficient interfaces. The human mind is making the human machine better.

The error here is thinking of ourselves simply as "inputs that produce outputs," an error that lies at the heart of many of the fantasies of artificial intelligence. In one of its most thought-provoking examples, *Beyond Therapy* distinguishes between chess playing as a human performance and chess playing as a machine output. The machine has "no uncertainty, no nervousness, no sweaty palms, no active mind." It may defeat human beings, but is the machine really "playing chess"? Inventor and visionary Ray Kurzweil has a computer program that can produce representational figure drawings seemingly indistinguishable from human artwork. But is the program an artist? Even if our bodies are, as *Beyond Therapy* sometimes concedes, in some sense *like* complex machines, such biochemical reductionism does not tell the whole story about "being human." The trouble is that the rest of the story—the heart of the story, which is our lived experience of ourselves in the world—is not so easily told, at least not in an age that demands scientific precision about body and psyche.

Perhaps the way we conceptualize our lived experience simply reflects our ignorance about the inner workings of our machines, as Hobbes claimed early on. We still say "the Sun rises," and of course it does in some sense. But what is really happening is a movement of the horizon. Likewise, in reporting that we feel happy or confident, nervous or hopeful, we might be speaking loosely of "machine states" that we are coming to understand with greater precision and less metaphor. We will learn to say not "I feel good" but "I am experiencing increased serotonin production." The status of the "I" doing this reporting is a

much vexed question in philosophy—one that is explored but of course not settled in this report.

In exploring the mystery of human agency, *Beyond Therapy* argues that there is a distinction between bulking up by taking a pill and bulking up by lifting weights. In the first case, the changes are like magic, unintelligible to the lived experience of an acting self. In the second case, the changes are intelligible, the result of self-directed activity. But at some level, in both cases, what is going on “under the hood” is equally mysterious and outside of my control. To speak of human performance as “intelligible” and “self-directed” could simply be old-fashioned language based on our long ignorance of biochemical realities, language that may not survive increasingly detailed knowledge of our mechanisms and the corrosive skepticism of modern materialism.

Still, there are good reasons to defend the dignity of our lived experience, if only because there are as yet no definitive answers to questions about the nature of mind and its relationship to the body. Some reasons are philosophical, others are practical. I’ll put forward five such reasons drawn from the report; surely there are many others.

First, by seeking a conception of superior performance that is grounded in a proper understanding of human excellence, one that takes seriously the richness and significance of our limitations, the report suggests a way to avoid the treadmill of technological hedonism. In so doing, it quietly confronts the Baconian understanding of technology as “the effecting of all things possible.” This grand promise, as the report notes, is really coming into its own. Nanotechnology founder K. Eric Drexler believes that nanotechnology will one day allow our capacities to reach the limits of the physically possible. Kurzweil speculates that the nearly inconceivable artificial intelligences that will be our evolutionary successors may find ways of pushing beyond natural laws. But *Beyond Therapy* understands how self-defeating such promises are. There is something tragically self-contradictory about enhancing our performance by fundamentally altering our embodied state. As human beings we possess a strong drive towards perfection. But when, as the report says, we use “technological means to transcend the limits of our natures,” and seek to overcome any imaginable limit on our given bodies, we really express a desire “to transcend our embodiment altogether, to become as gods, to become something more than human.” The “transhumanists” may celebrate just this result: the fact that we are no longer talking about superior human performance at all. But absent limits, we are engaged in a restless quest for power after power that may not be limited even by death, and that will surely turn back upon man himself.

Second, the key to understanding what constitutes a genuine enhancement is the proper education of the soul, not taking any desire, real or imagined, as

simply given. Such a call for proper education is not a new thing or small thing, nor can success be taken for granted. But the stakes are rising along with our capacities. Otherwise, particularly in relation to possibilities opened by technological innovations, we are left with the attitude that if we can do it we must do it—an argument sometimes deployed by libertarian technophiles in the cruder form: If we don't do *x*, somebody else will do it anyway. But blind progress is not really progress at all.

Third, to decide and act as if we were nothing more than complex and vastly improvable machines has another troubling consequence. Compared to the imaginable possibilities of enhancement, unenhanced human life appears a poor thing. Bacon already seems to have foreseen such a possibility; he has a fellow of his great scientific think tank in the “New Atlantis” appear in public with “an aspect as if he pitied men.” Such pity is already evident among the more aggressive advocates of human displacement and extinction; it is the sort of pity that can be hard to distinguish from contempt.

Fourth, the promise of superior performance is not made to atomistic individuals, but to real people in real social and political milieus. Just as *Beyond Therapy* is strong in reminding us of the complex characteristics of individual human performance, so it is also careful to place such performance within a wider social and political context. Human excellence is beautiful and exemplary for those who observe it and support it, even if they do not achieve or embody it themselves. A regime is defined to a large extent by how and what kind of excellence it encourages. While broad freedom and choice will inevitably be the key to the pursuit of superior performance in America, that should not be taken to mean that these private choices have no public consequences, or that the shape of public life ought to be nothing other than the vector resulting from private “lifestyle” choices. Precisely because of our interdependence, it matters, as the report says, that we aim at “our best performance as human beings, not animals or machines.”

Finally, a purely mechanistic account of human life and experience denies from the very start any possibility of transcendence properly speaking. To be sure, “transhumanists” could be said to believe that our “immortal longings” do in fact point to something: our replacement by machine progeny with effective immortality. But this is the transcendence of becoming obsolete; and ironically, one becomes obsolete by attempting to be the author of one's own immortality. The “transhumanist” project ultimately falls apart. In contrast, while it may not satisfy any particular religious orthodoxy, it is quite remarkable for a government report to conclude the following: we need to see “the human being as a creature ‘in-between,’ neither god nor beast, neither dumb body nor disembodied soul, but as a puzzling, upward-pointing unity of psyche and soma whose precise limitations are the source of its—our—loftiest aspirations.”

There is always a danger, in a philosophical inquiry written for public consumption, of smoothing out complexities to make an edifying defense of human nature. *Beyond Therapy*, by contrast, is measured, thorough, and discursive. It is exemplary of a moral realism that attempts to do justice to our desires, imaginations, and ideals—however contradictory—but also to the imperfections and limits of the real. It lifts up our eyes to the hills while keeping our feet on the ground. If it has a weakness, it is the weakness of its strength. By starting from sports, and by taking the primary aspiration behind superior performance to be the desire for human excellence, it is perhaps too generous to the impulses behind being stronger and living longer. While illuminating what we seek at our best, it has rather less to say about the acquisitive and pleasure-seeking inclinations that for most people, most of the time, likely define the horizon of enhancement.

Still, superior performance is an aristocratic ideal; to do justice to thinking about being better is of necessity to elevate our view. If modernity is going to lead us to the point where we are tempted with the powers of gods, it is not so clear that its own “low but solid” assumptions about human motivation will remain adequate to the tasks both of comfortable self-preservation and democratically understood individual freedom. Those powers have such potential for destructive use that it is easy to imagine the attractions of gentle, if radically dehumanizing, control. *Beyond Therapy* suggests that a different future might be possible if we understand the full richness and dignity of who we are as beings dissatisfied with our own limits and imperfections, seeking “ever to excel.”

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