

Humanity at the Turning Point: Philosophical Anthropology and the Posthuman

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This essay aims to demonstrate that the philosophical anthropology of Michael Landmann provides important critical tools and resources for intervening in the debate over the posthuman and the turning point that humanity faces due to the advancing powers of technologies such as genetic engineering, artificial intelligence, and cybernetics. Landmann's view of the human being, which emphasizes the correlative conditions of creativity and culturality, freedom and determinacy, and malleability and fixity, provides the grounds on which to critique the current structure of the debate over the posthuman and resituate it in terms of our historicity and self-images. The rhetorically charged trope of the posthuman, with its emphasis on a break or turning point, risks cutting us off from significant resources for understanding human nature, including the resources of philosophical anthropology, and does not advance our understanding of our current situation and the current dilemmas human beings face in light of our advancing technological powers.

The February, 2000 issue of *Wired* magazine, the magazine of and for the digerati, features on its cover a photo of “cybernetics pioneer” Kevin Warwick, his shirt sleeve rolled up, as if ready for a fix. But in this case “the fix” is a superimposed x-ray image that discloses a glass-enclosed microchip surgically implanted in Warwick’s left arm. Warwick, the cover announces, is upgrading the human body—starting with himself. “Cyborg 1.0,” the accompanying article penned by Warwick, outlines his plan to become one with his computer. Writes Warwick: “I was born human. But this was an accident of fate—a condition merely of time and place. I believe it’s something we have the power to change. I will tell you why” (2000, 145). Warwick intends to implant a chip in

his arm that will send signals back and forth between his nervous system and a computer. For Warwick, being human is merely an accident of time and place, an accident that given the right computing power and the right cybernetics, we might well be able to fix.

Two months later, *Wired* has had a change of heart—speaking only figuratively at this point in time. The cover of the April, 2000 edition features a crumpled page torn perhaps from a dictionary, maybe *Webster's Twenty-first Century Unabridged*. On this discarded page we read: “**human** adj. 1. of, belonging to, or typical of the extinct species *Homo sapiens* <the human race> 2. what consisted of or was produced by *Homo sapiens* <human society> n. an extinct biped, *Homo Sapiens*, characterized by carbon-based anatomy; also HUMAN BEING.” Bill Joy, cofounder and Chief Scientist of Sun Microsystems, has been having second thoughts about the computer revolution and in his article “Why the Future Doesn't Need Us” explores how it is that “our most powerful twenty-first-century technologies—robotics, genetic engineering, and nanotech—are threatening to make humans an endangered species” (2000, 238). It's time, Joy thinks, to wake up and smell the Terminator.

Warwick versus Joy. Human versus Post-human. It would seem from this battle being played out on the cover of *Wired* that humanity has indeed arrived at a turning point. We have reached a point where we are poised to take control of our evolutionary future, transforming ourselves and our progeny from the accident of our humanity into well-designed posthumanity. Or, in our hubris, we have reached the point where we are poised to eliminate the human being once and for all. This narrative, of the end of the human and the coming of the posthuman, is a fairly common one today, played out not only on the covers of magazines such as *Wired* but in movies, television talk shows, and academic tomes. It is this narrative regarding the turning point at which humanity has arrived that I wish to interrogate in this essay. For all the attention that our posthuman future receives today, much of the narrative surrounding this currently popular trope is ill-conceived. The claim that we have arrived at a turning point, represented either by the promise or the threat of the posthuman, is mistaken. Furthermore, it

is a mistake premised upon an inadequate understanding of what we human beings are in the first place. Before we embrace the posthuman or run in fear from it, it would be worthwhile for us to think a little more clearly about what it means to be human. There is a long tradition of anthropological thought in Western philosophy that provides the grounding for such a task. For the purposes of this essay, I will draw on the work of the twentieth-century German philosophical anthropologist Michael Landmann and his discussion of the fundamental characteristics of the human being in order to lay the groundwork for a rethinking of the posthuman and humanity's turning point.

I begin by briefly mapping the terms in which debates over humanity's turning point occur, discussing the popularity of the trope of the posthuman and the widespread assumption that humanity has indeed arrived at a turning point. I catalog the two typical responses to this notion of a turning point, an optimistic embrace of the posthuman and a pessimistic dread of its coming. Following this, I turn to Landmann's philosophical anthropology, a rich and holistic account of the human being that draws on some of the best elements of the tradition of philosophical anthropology. From this more complete account of the human being, I will suggest that the posthuman is still-born: humanity is not facing a turning point represented by the loss of our humanity. We do, though, face some difficult choices and decisions in the coming years, made especially urgent by the rapid development and spread of bio- and cybernetic-technologies. But the image of the posthuman, with its attendant dread or delirium, is not going to help us make those decisions. Proponents and opponents of the posthuman alike have it wrong in that respect. Landmann's philosophical anthropology provides us with the critical tools and insights for resituating the debate away from the rhetorically charged figure of the posthuman, and paying closer attention to the historical, cultural, and social context of the human being. While Landmann's philosophical anthropology is largely silent on normative issues, his framework provides a better context in which to debate the future of humanity than one driven by concerns over the apparent coming of the posthuman.

I

In setting out to describe our current situation, it is clear that there is a widespread presumption that humanity is indeed at a turning point. Issuing from a variety of perspectives and motivated by a cross-section of theoretical concerns, comes the claim that especially owing to technological developments human beings are on the cusp of profound change. Consider, for instance, two diametrically opposed figures in the current debate regarding the future of humanity, Gregory Stock and Francis Fukuyama. Stock begins his largely approving discussion of human germline engineering, *Redesigning Humans: Our Inevitable Genetic Future*, by noting,

We know that *Homo sapiens* is not the final word in primate evolution, but few have yet grasped that we are on the cusp of profound biological change, poised to transcend our current form and character on a journey to destinations of new imagination. (2002, 1)

While Fukuyama is best known for his critique of the posthuman, he agrees with Stock that we are on the cusp of profound change: “we appear to be poised at the cusp of one of the most momentous periods of technological advance in history” (2002a, 5). The President’s Council on Bioethics voices a similar claim, quoting the National Science Foundation: “at this unique moment in the history of technical achievement, improvement of human performance becomes possible,” and such improvement, if pursued with vigor, “could achieve a golden age that would be a turning point for human productivity and quality of life” (2003, 6–7).

Leon Kass, Chairman of the President’s Council, has often taken the lead in articulating similar claims that we are the verge of a profound transformation. As he writes in *Life, Liberty and the Defense of Dignity*,

Human nature itself lies on the operating table, ready for alteration, for eugenic and psychic “enhancement,” for wholesale re-design. In leading laboratories, academic and industrial, new creators are confidently amassing their powers and quietly honing their skills, while on the street their evangelists are zealously prophesying a posthuman future. (2002, 4)

In his Foreword to *Beyond Therapy*, Kass suggests that what is at stake

in these discussions of our posthuman future is “the kind of human being and the sort of society we will be creating in the coming age of biotechnology” (2003, xvi). Indeed, this claim has now become quite commonplace, even more so if we take into consideration the many ways in which technology seems to be impacting our understanding of human nature, from biotechnology to digital technologies such as artificial intelligence, virtual reality, cybernetics, and robotics. In *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—and What It Means to Be Human*, Joel Garreau focuses on “the future of human nature” and explores the “biggest change in tens of thousands of years in what it means to be human” (2005, 3). Garreau’s discussion focuses on robotics, information science, nanotechnology, and genetics and ponders the question “will human nature itself change? Will we soon pass some point where we are so altered by our imaginations and inventions as to be unrecognizable to Shakespeare or the writers of the ancient Greek plays?” (2005, 21).

As with many of these accounts of the coming turning point, Garreau’s work draws on the notion of a coming Singularity, first popularized by Vernor Vinge and most recently the focus of Raymond Kurzweil’s book *The Singularity is Near: When Humans Transcend Biology* (2005). In “The Coming Technological Singularity: How to Survive in the Post-Human Era,” (1993), Vinge argues that “we are on the edge of change comparable to the rise of human life on Earth. The precise cause of this change is the imminent creation by technology of entities with greater than human intelligence.” His claim has been taken up by technoenthusiasts such as Kurzweil, Hans Moravec (1988, 1998), and the transhumanists. Indeed, the increasing integration of digital technologies in our lives has led many to argue that the once clear boundaries separating human beings from machines are disappearing and we are on the verge of a fundamental transformation in our understanding of what it means to be human. In *The Mode of Information*, Mark Poster suggests that “[a] symbiotic merger between human and machine might literally be occurring, one that threatens the stability of our sense of the boundary of the human body in the world. What may be happening is that human beings create computers and then com-

puters create a new species of humans” (1990, 4). In *The War of Desire and Technology at the Close of the Mechanical Age*, Allucquere Rosanne Stone suggests that we are in the midst of a paradigm shift from the mechanical age to the virtual age and we now inhabit the cyborg habitat of the technosocial, in which technology is viewed as natural and human nature becomes a cultural construct. The ubiquity of technology, Stone suggests, rearranges our thinking apparatus and calls into question “the structure of meaning production by which we recognize each other as human” (1995, 173). In *The Age of Spiritual Machines*, Ray Kurzweil argues, “the primary political and philosophical issue of the next century will be the definition of who we are” (1999, 2). Ed Regis explores our “transhuman, postbiological” future in *Great Mambo Chicken and the Transhuman Condition*, suggesting that perhaps the human condition is a condition “to be gotten out of” (1990, 175). O.B. Hardison too suggests that the human being is flawed and that the relation between carbon “man” and our silicon devices is “like the relation between the caterpillar and the iridescent, winged creature that the caterpillar unconsciously prepares to become” (1989, 335).

There is widespread agreement, then, on the idea that human beings are fast approaching a turning point where we may cease to exist owing to the impact of technology on human nature. There is less agreement, however, regarding how we ought to respond to these technological developments. Returning briefly to our opening contrast between Warwick and Joy, we can read them as fairly paradigmatic of two contrasting, diametric responses to these issues raised by technology and the posthuman. Warwick approaches these issues with a sense of optimism and willing involvement. As he notes:

Since childhood I’ve been captivated by the study of robots and cyborgs. Now I’m in a position where I can actually become one. Each morning, I wake up champing at the bit, eager to set alight the 21st century—to change what it means to be human. (2000, 151)

Warwick argues that it is completely natural for human beings to explore and change, that cybernetic technologies represent a natural development in our co-evolution with machines, and that our failure to advance along with our machines risks our survival.

Linking people via chip implants directly to those machines seems a natural progression, a potential way of harnessing machine intelligence by essentially creating superhumans. Otherwise, we're doomed to a future in which intelligent machines rule and humans become second-class citizens. My project explores a middle ground that gives humans a chance to hang in there a bit longer. Right now, we're moving toward a world where machines and humans remain distinct, but instead of just handing everything over to them, I offer a more gradual coevolution with computers. (2000, 151)

The Australian performance artist Stelarc, whose creations have long questioned the nature and limits of the human body, argues that we must adopt a posthuman philosophy of erasure in which we reconfigure notions of the body, evolution, and gender distinction as hybridities of human-machine. The body, Selarc writes, is obsolete in the current technological environment. Stelarc envisions a future in which technology "invades" the body, giving us the freedom to transcend the limitations of our DNA.

It's time to question whether a bipedal, breathing body with binocular vision and a 1,400 cc brain is an adequate biological form. It cannot cope with the quantity, complexity, and quality of information it has accumulated; it is intimidated by the precision, speed, and power of technology and it is biologically ill-equipped to cope with its new extraterrestrial environment. (1998, 117)

Similar claims embracing and promoting the turning point made possible by technology are made by a number of enthusiasts for the posthuman, including Stock, the roboticist Hans Moravec, new age techno-enthusiasts such as the Extropians, and many others.

Lest we get caught up in this wave of posthuman euphoria, however, we need only recall the (paradoxical?) sight of proto-cyborgs, their cell phones, palm pilots, pagers and other personal internet devices strapped to their sides, queuing up to see *The Matrix*, one in a long line of Hollywood films that pit humans against machines and imagine a future in which human beings become little more than battery packs for computers, who hold us hostage by generating a virtual reality twentieth century to preoccupy us and keep us busy while they feed off of our bodies' electromagnetic energy. This is the concern given voice by Bill

Joy, who worries that “our most powerful 21st-century technologies—robotics, genetic engineering, and nanotech—are threatening to make humans an endangered species” (2000, 238). Joy worries about the dehumanizing influences of this advancing technology.

But if we are downloaded into our technology, what are the chances that we will thereafter be ourselves or even human? It seems to me far more likely that a robotic existence would not be like a human one in any sense that we understand, that the robots would in no sense be our children, that on this path our humanity may well be lost. (2000, 244)

Joy’s perspective is shared by Joseph Weizenbaum who, in *Computer Power and Human Reason*, labels obscene any projects that propose to substitute a computer system for a human function that involves interpersonal respect, understanding, and love (1976, 269). Weizenbaum argues that there are important differences between humans and computers and we dehumanize human beings by adopting computers as a metaphor for understanding ourselves. Sven Birkerts agrees that we may be on the verge of species mutation but argues that this mutation pits technology against soul.

My use of soul is secular. I mean it to stand for inwardness, for that awareness we carry of ourselves as mysterious creatures at large in the universe. The soul is that part of us that smelts meaning and tries to derive a sense of purpose from experience. (1994, 212)

Others, such as Stephen Talbott in *The Future Does Not Compute*, Alan Wolfe in *The Human Difference*, Bill McKibben in *Enough: Staying Human in an Engineered Age*, and Hubert and Stuart Dreyfus in *Mind Over Machine*, agree with Birkerts and Weizenbaum that the computer threatens what is most distinctive about humanity. Reflecting on genetic technology, Leon Kass similarly declares:

Here in consequence is the most pernicious result of our technological progress—more dehumanizing than any actual manipulation or technique, present or future: the erosion, perhaps the final erosion, of the idea of man as noble, dignified, precious, or godlike, and its replacement with a view of man, no less than of nature, as mere raw material for manipulation and homogenization. (2000, 86–87)

Technologies from genetic engineering to artificial intelligence have wrought fundamental changes in our understanding of human nature. Indeed, technological developments have challenged much of our taken-for-granted knowledge about human nature and the future of the human species. At the close of the twentieth century, there is, as Scott Bukatman notes, “an uneasy but consistent sense of human obsolescence, and at stake is the very definition of the human....[O]ur ontology is adrift” (1993, 20).

II

We have seen that there is widespread agreement that owing to the developments of modern technology, humanity appears to be at a turning point. There is less agreement, though, on responses to that supposed turning point. The reflections in the previous section raise a number of important questions. Is the human being soon to be obsolete? Are we entering a posthuman or postbiological age? If so, ought we to be fearful of these developments or should we embrace them as the next logical step in human evolution? The challenge of addressing these questions today is complicated by the fact that for the past several decades at least, it is precisely discussions of human nature that have been most absent from the contemporary scene. While technological developments have been such that our very humanity is seemingly placed in the balance, scholars and theoreticians have been dismissive of accounts of human nature. As Charles Taylor notes, we’ve become very nervous and squeamish about “human nature.” “The very words ring bells. We fear that we may be setting up some reified image, in face of the changing forms of human life in history, that we may be prisoners of some insidious ethnocentrism” (1985, vii). Calvin Schrag concurs, noting, “Even a casual observer of the current state of the arts and sciences is able to discern that humanism, both as a philosophical position and as a cultural attitude, is under suspicion. The project and language of humanism alike have fallen into disfavor and have become fashionable targets of critique” (1986, 197). But failing to reflect on human nature at precisely this point in time seems especially paradoxical. As Ronald Cole observes:

To me, at least, it is distressing that precisely at the moment in human history when we are poised on the threshold of the possibility of the technological manipulation of human nature, we have very little consensus on what we mean by human nature. In fact, we have very few candidate theories of human nature, philosophical or theological, and so it is quite likely we will proceed to alter what we do not even pretend to understand. (1998, 156)

Indeed, it is perhaps owing to these technological developments that more recently there has been a growing recognition of the need for more comprehensive accounts of human nature. The important work of the British philosopher Mary Midgley (1995) has been attracting increasing attention for similar reasons. Even in the Anglo-Analytic tradition, Owen Flanagan (2002), in his recent work on a naturalized ethics, characterizes his account of ethics as human ecology as a variety of philosophical anthropology. Feminist theory, where for very legitimate reasons theories of human nature have been dismissed, has recently seen the reemergence of human nature as a viable concept, as in the work of Martha Nussbaum (2000) and her Aristotelian capabilities approach to human nature. This recent work is suggestive of the need to address more squarely questions about our nature as human beings. We fail to adequately address the question of humanity's turning point if we cannot address the more fundamental issue of humanity's nature. In order to do that, I turn to the tradition of philosophical anthropology.

Philosophical anthropology has been most closely associated with a series of German philosophers writing between the two world wars. It is generally thought to have begun with Max Scheler's *Man's Place in Nature*. In that book, which was first published in 1928, Scheler begins by recognizing the human being's problematic nature. Scheler writes, "Man is more of a problem to himself at the present time than ever before in all recorded history" (1961, 4). It is the precariousness revealed by the human being's self-reflection that leads Scheler to address the twin questions, "What is man?" and "What is man's place in the nature of things?" These two questions set the tone for the development of philosophical anthropology over the next several decades, in works by such leading figures as Helmuth Plessner (1981), Arnold Gehlen

(1988), Ernst Cassirer (1944), Martin Buber (1965), and Erich Rothacker (1965), among others. A rather diverse lot, these thinkers were in agreement that one of the fundamental questions facing human beings was the matter of their nature and place in the cosmos. While mostly forgotten today, the philosophical anthropologists produced some of the most perceptive analyses of human nature in the history of philosophy, reason enough perhaps to warrant a second look. Additionally, philosophical anthropology emerged at a time analogous to our own in which there was a widespread recognition of our crisis of self-knowledge. As Paul Pfeutze voiced it, "Modern man has become a problem to himself, and all over the world men are inquiring with fresh zeal into the nature of man. What is man? What is the meaning of human existence?" Similar points were made by Gehlen (1988), Cassirer (1944), and others. This sense of crisis was driven in part, both then and now, by the rapidly developing sciences and the growing power of technology. As Pfeutze continues,

On all sides one finds moral disaster, political confusion, spiritual discontent, mental breakdown, and a growing suspicion, now amounting to a certainty, that during the last few centuries man has so far misinterpreted his own nature as to make tragic and catastrophic use of his powers and technics. (1954, 19)

A number of philosophical anthropologists, including Gehlen, Buber, and Plessner, wrote explicitly about technology and its relation to human nature. A strength of philosophical anthropology was its insistence that reflections on human nature must be equally informed by the scientific, technical, and empirical as well as the cultural and philosophical. As Plessner notes, "there can be no philosophy of man without study of nature" (quoted in Dallmayr 1974, 72). Indeed, the most interesting discussions of human nature found in philosophical anthropology draw on and illuminate diverse disciplines and perspectives, a still further warrant for looking to this tradition.

For the purposes of this essay, and in order to push further this examination of humanity's turning point, I shall focus on the philosophical anthropology of Michael Landmann. There are several reasons why Landmann specifically is worthwhile in this context. First, Landmann

was as much a commentator on the tradition of philosophical anthropology as he was a practitioner of the discipline. His philosophical anthropology is one of the most developed and comprehensive, incorporating his own reflections on the western historical tradition from the Greeks and Hebrews to the very best insights of his fellow philosophical anthropologists. Secondly, Landmann's work remains widely available today, since it has been translated into English and is still available in print, while the same is unfortunately not true for many of the key works in philosophical anthropology, many of which have yet to be translated into English and many of those that have, have been allowed to fall out of print. While Landmann's work remains available, however, it is less well known than that of some of the other philosophical anthropologists and remains a neglected resource. Jos de Mul's work (see references in de Mul 2003) on digitally mediated embodiment has brought renewed and deserved attention to Plessner's philosophical anthropology and its implications for a better understanding of information and communication technologies. Much of the oeuvre of this philosophical discipline remains unknown, however, and a third reason for turning specifically to the work of Landmann is to make some small effort towards bringing his philosophical anthropology some of the attention it deserves.

In his key texts, *Philosophical Anthropology* (1974) and *Fundamental Anthropology* (1985), Landmann seeks to develop a view of human nature that is adequate to our complete being and understands the human being as an original totality (1974, 178). Landmann argues that philosophical anthropology ought to examine the underlying human structure while remaining cognizant of the contextual anthropology of particular images of man.

As man is forming culture, he makes history. Philosophical anthropology can, therefore, be only a formal anthropology: it, so-to-speak, draws the geometric curve on which cultures lie, but their content of concrete particularity results not from binding universal ideas but from life, which institutes them. (1985, 118)

Philosophical anthropology studies the permanent preconditions and forces that underlie all images of man (1985, 57).

Landmann organizes his account of human nature around what he refers to as the “anthropine gap” and what he identifies as “anthropina,” unchanging fixed, timeless basic structures of human existence (1985, 125). By the anthropine gap, Landmann means the lack of specialization of the human being in comparison to animals. A key insight in many philosophical anthropologies is the world openness of the human being, which is meant to capture the peculiarly human characteristic of being existentially liberated from the vital and instinctual sphere of animals. This characteristic has been widely remarked on in the history of philosophy and has been the bedrock of every major philosophical anthropology. As Landmann points out, a recognition of the human being’s openness to the world extends from Protagoras to the Renaissance and the Goethe Period (1974, 177).

According to Landmann, the “anthropine gap” is filled by two fundamental “anthropina”—culture and creativity—and his discussion of this point provides clues into the primary features of his philosophical anthropology:

Creativity and culturality, shaping the future and depending on the past, being open to the new and shaped by tradition, freedom and determinacy: these are the two fundamental anthropina. All others are just specifications or derivatives.... They not only coexist, they cooperate. Their relation is not just aporetic, but dialectical. ... Man is the mediation of this thesis and antithesis But man’s mediation is not given once and for all but must constantly be reproduced. (1985, 129)

Human beings are such that they come into the world unfinished, so to speak, and they are completed in a cultural context. Human beings are cultural, social, and traditional beings completed by their participation in specific cultures. But human beings are also creative beings, the very same beings who create the culture that completes them. Landmann sees creativity and culturality, freedom and determinacy, malleability and fixity as correlative conditions of the human being. We cannot understand either in isolation from the others. Man, he argues, lives from these polar forces and “faces the task of mastering their interplay and interrelating them in each respective situation” (1985, 120).

Significantly, Landmann warns us against seeing these forces as du-

alistic. “Receptivity corresponds to productivity. The productive being is also the receptive one. That is no contradiction. The two things are mutually conditioned” (1985, 132). Landmann draws on the work of Adolf Portmann (1990) and Clifford Geertz (1973) in support of his claim that biological and cultural development go hand in hand, in what he often refers to as a “mighty system of circular causality” (1985, 60). “No sharp distinction can be made in man between the natural creature and the cultural being, nor between the cultural and the historical being” (1985, 92).

More precisely, as man creates culture, it floods back to him and in turn creates him. He is both cause and effect, retro-shaped product of his own product. The human mind is not a transcendental point, which itself standing outside becoming, constitutes everything else and therefore has a comparatively higher, pre-mundane, more original existential dignity. Man and culture ... form a bipolar system in constant flux caused by dynamic feedback. (1985, 94)

While this brief sketch of Landmann’s philosophical anthropology only hints at the outlines of his approach to human nature, it does suggest several important insights relevant to our discussion. First Landmann recognizes that inquiring about existence is a fundamental feature of the human condition:

The concept of man implies anthropology. This is not mere optional, theoretical speculation; it springs from the deepest necessity of a being that must shape itself and therefore needs an orientational model or *Leitbild* to go by. (1974, 23)

Given that the human being is unfinished, unspecialized, and must be completed by culture, we face the perennial task of our self-creation. This characteristic of the human condition was often remarked upon by philosophical anthropologists. As Cassirer pointed out in *An Essay on Man*, man “is that creature who is constantly in search of himself—a creature who in every moment of his existence must examine and scrutinize the conditions of his existence” (1944, 6).

In addressing this anthropological question, however, Landmann is clear that there are avenues not open to the human being. Landmann is critical, for instance, of both ahistorical views of human nature and

naturalistic views. Indeed, Landmann rejects any kind of essentialism in accounts of human nature. References to an unchanging and timeless core of human being or to a natural state ignore one of the fundamental “anthropina” of human nature, our malleability and plasticity, our very historicity.

Every appearance of naturalness is deceptive....What is innate in man and could be called our *a priori* is not a preexistent norm of culture, but a functional energy: only the undifferentiated capacity to design culture and to work toward it. But in content we remain unbound.

(1974, 222)

Landmann repeatedly refers to the insights of Goethe and Herder that the human being is an historical being and as such has no timeless or unchanging essence.

A timeless unchanging core of man is an illusion which historical consciousness must destroy. This illusion is shared by naturalism, which seeks to interpret this specific core-reality of man from below, from the bio-psychological substratum, and by supernaturalism, which seeks to interpret it from above, from reason or the God-given soul. It is the current conviction, however, that the influence of the changing cultures extends down into the innermost being of self-changing man.

(1985, 57)

A third point worth remarking upon is Landmann’s recognition that our historicity extends to the issue of norms as well. There is no single cultural norm desired by nature or reason, he suggests (1985, 58).

If our creativity is a genuine creativity, it cannot be limited by pre-existing norms. Again and again attempts have been made to find cultural norms that result necessarily out of man’s nature ... In reality this idea of a natural culture is self-contradictory. In man’s nature, only the fact of culture and not its modality is predesignated. “Artificiality is man’s nature.”...The only thing mapped out for us in advance is the necessary tendency to completion in general. (1985, 56)

Finally, Landmann suggests that we not read the previous points to suggest that individual human beings are capable of radical acts of freedom in relation to their own culturality and historicity.

The man whom we encounter physically as an individual is nonetheless not self-sufficient as an individual and cannot be understood just in his singularity... Man's placement in a community is a constitutive anthropinon. (1985, 48)

Human beings, Landmann suggests, are embedded in culture somewhat like a fish in water (1985, 53). Indeed, Landmann is explicitly critical of existentialism for over-emphasizing creativity as a radical, free act of the individual. While pointing out that tradition's compulsion is not absolute, Landmann also argues that we become complete only by growing up in tradition-carrying groups (1985, 62).

III

How does Landmann's philosophical anthropology help us to make some progress towards addressing humanity's turning point? It is my contention that philosophical anthropology does indeed provide important critical tools and resources for addressing those questions raised by the posthuman and posed at the opening of section two. It is to this claim that I turn in this section.

On the surface, one might be forgiven for thinking that Landmann's philosophical anthropology is not adequate to the task of discussing our current situation and the dilemma of humanity at the turning point. Here is an account of human nature whose origins predate many of the technological and scientific developments forcing these questions upon us. It is a view of human nature that is largely silent on the role of technology, though Landmann does take note of the cybernetic revolution in *Fundamental Anthropology*. And yet it is here precisely that Landmann might insist that we begin not from an account of the technology and its impact on the human condition but with the fact that we are inevitably led to raise once again the question of what it means to be human. Landmann's philosophical anthropology begins with the recognition that the human being "inquisitively asks about and interprets himself" (1974, 3) and that our self-interpretations or self-images are not static but have a "formative effect" (1974, 20). Philosophical anthropology is, for Landmann, not simply an academic discourse, but a universally felt need. We are problematic and we need a self-image.

“Our human self-knowledge is ... of the most drastic significance for us; work at self-knowledge is our greatest responsibility” (1985, 27). Indeed, most philosophical anthropologists, including Landmann, recognize that philosophical anthropology becomes most insistent in times of crisis and change. So it is the essence of our humanity that we remain an open question, that we seek self-interpretations, and that in especially difficult times of crisis and transition, these questions become most insistent.

Recognizing this as an aspect of the human condition and in light of such technological developments as the Human Genome Project, artificial intelligence, and the growing interface between human and machine, we are bound to renew these questions about what it means to be human. It would be in some sense in-human not to raise these questions at precisely this time. But that suggests that rather than seeking some discontinuity or break between the human and the post-human, rather than suggesting that we are entering some posthuman condition, the questions and issues that human beings are now facing are continuous with the ones that they have always faced. The posthuman does not represent the emergence of some radically new state of humanity but rather highlights one ineluctable fact of our very humanity: we face openly its question. As Landmann suggests, “To be human includes a constant tension and caution” (1985, 152). Furthermore, the recognition of this continuity suggests that we find and draw on critical resources in our cultural and historical traditions for addressing our current situation. The call to embrace the posthuman as a rupture or break from the past risks cutting us off from significant resources for understanding human nature. If in fact we have made a turning point, if we are now posthuman, this might lead us to think that resources available in the past are no longer worth consulting. Landmann’s insistence that as a cultural being the human being is a historical and traditional being underscores the importance of these traditional resources as part of a full understanding of our humanity. The notion of a turning point undermines critical reflection on how we arrived at this point and what the elements of tradition and history are that may help us understand where we are, how we got here, and how

we might move forward. And the question of how we got here is not an insignificant question to raise given our current situation.

In further re-examining accounts of the posthuman through the lens of philosophical anthropology, it is apparent that these accounts are premised upon rather thin and under-developed accounts of human nature, especially in light of the more robust and thick descriptions typically offered in philosophical anthropology. In fact, while opponents and proponents alike agree that the fundamental issue in these debates is what it means to be human (Stock, for instance, suggests that at a fundamental level, the current discussion about human enhancement is about philosophy and religion: “it is about what it means to be human, about our vision of the human future” [2002, 155]), there is surprisingly little attention paid to this issue in discussions of humanity’s turning point and our posthuman future. This is remarkable in light of the fact that in key respects, the posthuman is parasitic upon our notion of the human. Our attitudes towards our posthuman future are going to be conditioned by our attitudes towards our human present. Is humanity something to be preserved, or enhanced, or a condition to be gotten over? How we answer that question depends heavily on what we take humanity to be. And what we take humanity to be, who *we* are and what *we* are to become, is precisely what is seldom fully addressed in these discussions. Consider, for instance, two paradigmatic responses to this debate.

The first can be seen in the work of critics of posthuman biotechnology such as Francis Fukuyama and Leon Kass. In *Our Posthuman Future*, Fukuyama argues that human beings have deeply rooted instincts and a human nature which ought to have a special role in defining for us what is right and wrong (2002, 7). Nature, Fukuyama suggests, imposes limits (2002b, 38) and can serve as a ground for morality (2002b, 115). His account of human nature draws on a sociobiological framework which locates human nature in specific genes. By human nature he means the “sum of the behavior and characteristics that are typical of the human species, arising from genetic rather than environmental factors” (2002b, 130). Fukuyama is in essence a sociobiologist but one who wants to preserve the human genome. While his argument is de-

tailed and spelled out over several chapters of *Our Posthuman Future*, the basic outlines of Fukuyama's position do not differ substantially from rather standardized notions of human nature in liberal political thought. Stripping away the historically and culturally contingent, we are left with some human essence, the basic meaning of what it means to be human, which is unique, distinctive, and universal to all human beings, gives us a dignity and moral status higher than any other living creature, and defines a set of characteristics and behaviors, including emotions and feelings, fundamental to our humanness and which serve as a foundation for human values. Central to this account of the posthuman is a fixed, trans-historical human nature that serves as the foundation for modern humanist values. Embracing the posthuman risks that foundation.

In *Life, Liberty, and the Defense of Dignity*, Kass offers a similar though more nuanced view. Avoiding Fukuyama's sociobiological framework, Kass argues that we need a new approach to biology, indeed a new philosophical anthropology, premised upon the psycho-physical unity of the embodied human person. As Kass notes, "I believe that one cannot give a true account even of animals without notions of forms, wholeness, awareness, appetite, and goal-directed action—none of them reducible to matter-in-motion or even to DNA" (2002, 138). Kass argues that "the dignity of real life" (2002, 18) demands that we respect the full human being, including those sentiments, aversions, and intuitions that "belong intimately to the human experience of our own humanity" (2002, 198). Respect demands that we approach human nature with awe and reverence and a sense of mystery, things threatened by the technological project. As Kass writes: "Enchanted and enslaved by the glamour of technology, we have lost our awe and wonder before the deep mysteries of nature and of life" (2002, 144). Intent upon denying our rootedness to nature and tradition, we pursue our narcissistic projects of self-re-creation in a vain attempt to control our futures and transcend our biology. Our repugnance in response to these projects is, as Kass puts it, "the emotional expression of deep wisdom, beyond reason's power fully to articulate it" (2002, 150). Kass suggests that we intuit and feel, immediately and without argument,

the violation of things that we rightfully hold dear. Like Fukuyama, Kass ultimately has recourse to a fixed notion of human nature that serves as a moral standard on which to reject the posthuman: "If... we can no longer look to our previously unalterable human nature for a standard or norm of what is good or better, how will anyone know what constitutes an improvement?" (2002, 132).

This fixed, ahistorical view of human nature is at odds with the typical account of human nature found in those that embrace and celebrate the posthuman, the second paradigmatic response in the debate over humanity's turning point. This is the approach taken by Stock in *Redesigning Humans*; indeed, Stock elevates it to the very essence of human nature. As he notes,

A key aspect of human nature is our ability to manipulate the world We are now reaching the point at which we may be able to transform ourselves into something "other." To turn away from germline selection and modification without even exploring them would be to deny our essential nature and perhaps our destiny. (2002, 170)

While Stock doesn't address how precisely we could have a destiny given that malleability is our essential nature, the important point he fixes on, if not fixates on, is our capacity to remake ourselves. "Remaking ourselves is the ultimate expression and realization of our humanity" (2002, 197). Biology, Stock argues, is malleable and bio-technology, more specifically germinal choice technology, is ultimately continuous with all the other forms of human self-modification we have pursued; it's a short step, he reasons, from popping expensive vitamin boosters to undergoing cosmetic surgery to opting for germinal choice technology. As he notes: "if biological manipulation is indeed a slippery slope, then we are already sliding down that slope now and may as well enjoy the ride" (2002, 151). Furthermore, Stock suggests that in the face of this human malleability, philosophy and ethics are largely impotent. Our projects of self-fashioning, he suggests, are completely self-directed: "We and our children increasingly will be reflections of our personal philosophies and values" (2002, 195). But what goes into one's personal philosophies and values? What few guidelines Stock offers revolve solely around cost, risk, and other market-driven factors:

“Whatever people’s philosophies of human enhancement, their decisions about using specific procedures often hinge on cost, safety, and efficacy rather than political or social consequences” (2002, 159).

Stock’s acceptance of and Kass and Fukuyama’s rejection of the post-human are premised upon and conditioned by accounts of human nature that are little more than mirror images of one another. For Kass and Fukuyama and other critics of the posthuman, there is a substantive human nature which exists independently of its cultural manifestations and is the source of a uniquely human dignity that serves as a limit to technological development. For the proponents of the posthuman, such as Stock, Stelarc, the Extropians and transhumanists and their like, there is no stable, constant human nature. Rather the human being is fundamentally malleable, with a flawed and obsolete biology that we are now in a better position to control, manipulate, and re-engineer. Both camps portray nature/culture, biology/technology as at odds with one another. Either the human being is completely collapsed into the technological which becomes itself synonymous with nature, or the human being is preserved as something completely apart from the technological/cultural. Embracing the posthuman is often defined as negating materiality in the name of technology, while resisting the posthuman is portrayed as negating the technological in the name of the natural. The debate over the posthuman, as it is represented here, remains mired in a series of false dichotomies over nature versus culture, freedom versus determinism, self versus society, that are not productive, don’t help in addressing the difficult issues we face, and dramatically misrepresent human nature.

Landmann’s philosophical anthropology helps us appreciate the limits of these discussions of human nature. Drawing on the work of anthropologists such as Samuel Washburn (1959) and Clifford Geertz (1973), on the ethology of Adolf Portmann (1990), and previous philosophical anthropologies, Landmann articulates a view of the human being in which no sharp distinction can be made between the natural creature and the cultural being (1985, 92). We are, he writes, the already-formed and the yet-to-be-formed, the at once determined and determining form (1985, 78). Landmann rejects any form of natural-

ism or essentialism that fails to adequately attend to the cultural creativity of the human being but he equally rejects attempts to collapse the human being into mere malleability and plasticity. These are two correlative basic conditions in human life. They define the possibility of human existence, cannot be addressed independently of each other, and Landmann warns that any attempt to separate these two intermeshing parts from this unity must necessarily be artificial (1974, 218–29).

We see clearly then that Landmann would reject the ahistorical naturalism of Kass and Fukuyama, arguing that it fails to consider the role of culture and history in defining human nature. And indeed the kind of universal and ahistorical view of human nature underlying Kass' and Fukuyama's frameworks has come under what from some quarters is withering critique for embodying an implicit and illegitimate normative dimension, often reflective of a particular time and locale. We see this clearly in Fukuyama's defense of liberal capitalist democracies, whose success he attributes to grounding in "assumptions about human nature that are far more realistic than those of their competitors" (2002, 106). While aspiring to strip away the contingent and focus on the essential, these views of human nature often reflect instead the cultural and political biases of their proponents.

While Kass recognizes the role that institutions, education, and habitual practice play in shaping character, and ultimately moral life, he too has recourse to a realm of human nature which remains untouched by culture and so serves as an ahistorical and essentialized foundation for our moral intuitions. Kass' many references to the deep mysteries of human nature or the deep truths of the human condition, the manner in which the silent body speaks, the natural and proper and unambiguous and ontological meaning of sexuality, his references to our given, traditional self-understanding and to our natural desires and passions, all seem to point to a realm of human nature that lies beyond culture and historicity. His references to our common conception of our own humanity (2002, 85), the central core of our humanity (2002, 150), and the core of our culture's wisdom, raise troubling questions about just whose culture, whose humanity he is referencing. Kass' notion of

the “dignified journey of a truly human life” (2002, 18) ultimately stands for something essential beyond the realm of culture and history. The philosophical anthropologist rejects these references to a realm of human nature set apart from culture. As Landmann notes, “Nature itself forces us to have culture. It is our nature that even on the animal level we freely acquire the forms our life will take by cultural creativity. Even this level is in man a cultural level” (1974, 215). From a similar perspective, Marjorie Grene notes:

Even our perception, our direct way of being with things and events around us, is always already mediated by the pervasive nexus of human contrivance into which at birth we are cast and within which we develop. (1976, 192)

From the perspective of Landmann’s philosophical anthropology, we might also question the manner in which Kass and Fukuyama and conservative critics of bio-technology foreclose upon human creativity and innovation. Self-fashioning, Landmann might observe, is central to what it means to be human. After all, we’ve been making ourselves over for centuries, from Renaissance self-fashioning to Nietzsche’s *Übermensch* (1954, 124–6) to Foucault’s more recent celebration of Baudelaire’s dandy (Foucault 1984, 41–2). Recall Pico della Mirandola’s *Oration on the Dignity of Man*, in which he imagines God speaking to man, that creature of indeterminate image: “We have made you a creature neither of heaven nor of earth, neither mortal nor immortal, in order that you may, as the free and proud shaper of your own being, fashion yourself in the form you may prefer” (1956, 7). Now it’s true that God suggests we might descend to the lower, brutish forms of life, just as easily as we might rise to the superior orders whose life is divine. Nonetheless, it’s human nature to fashion one’s nature and this is a point Kass and Fukuyama remain oblivious to. Somewhat inconsistently, Kass himself recognizes that technologies are not neutral and bring out changes in our norms, beliefs, and self-conceptions (2002, 121–22). But he characterizes these changes as challenges to our humanity and our given self-conception, rather than recognizing that our “given” self-conception(s) are no doubt the product of still earlier influences and are a reflection of our cultural and historical location.

We shouldn't read this, however, as an endorsement of our absolute Protean nature, as many proponents of technological change do. Landmann would be equally critical of Stock's emphasis on malleability in the absence of any discussion of culture and tradition. By focusing on this one dimension of human nature, our plasticity and malleability, Stock denies us any basis on which to make decisions regarding how we ought to change. Indeed, having described the human being as little more than pure potentiality, the individual agent is left with little to fall back on other than popular stereotypes and cultural norms. Landmann is critical of views of the human being that carry the idea of creativity to the extreme of mere creative arbitrariness. While recognizing that creativity is "rooted as a necessity in the existential structure of man as such" (1974, 204), Landmann also warns us against carrying the idea of creativity to the extreme of mere creative arbitrariness. He is critical of Sartre's existentialism for precisely this reason: "Sartre's Promethean creationism runs into error by its very exaggeration" (1974, 213). As Robert Bellah (*et al.*) notes in a slightly different context, views of the human being such as Stock's leave us with a completely unencumbered self with no basis on which to act other than what it is popular.

"Values" turn out to be the incomprehensible, rationally indefensible thing that the individual chooses when he or she has thrown off the last vestige of external influence and reached pure, contentless freedom. The ideal self in its absolute freedom is completely "unencumbered" . . . (1985, 80)

But the human being, Landmann argues, is never unencumbered. Creativity always goes hand-in-hand with history: "history is the storehouse of man's former creativity; it shows how he always chiseled away at himself formatively" (1985, 23). Human creativity does not happen in a vacuum and the individual human being does not begin from a blank slate from which values are created out of whole cloth. "We must first internalize prior culture: even the greatest genius is to a far greater extent caused by his culture than its causer" (1985, 50).

Drawing together these points, it seems clear that the rhetoric of the turning point and the posthuman is not significantly advancing our understanding of our current situation and the current dilemmas

that the human being faces. Discussions of humanity's turning point and the posthuman seem to function most as a call to arms. They are "fighting words," so to speak, motivating us perhaps to take action and embrace a posthuman existence that moves beyond tired and old-fashioned ways of being human or act as a rallying cry to safeguard and preserve the dignity and value of what it means to be human. Implied by either route is the belief that we have an adequate account of human nature. And yet, as I have suggested, this is precisely what is most lacking in discussions of the posthuman. If we are to accept claims that humanity is facing a turning point and that we are witnessing the emergence (for good or for ill) of the posthuman, we ought to insist on a clear and persuasive account of that human nature we will soon be leaving behind. Accounts of the posthuman foreclose upon such reflection by suggesting that we already know what human nature is and that we need not trouble with it any further. The debate is structured around ideal images of the human being that never existed and that function to impel us to take a particular stance on the posthuman, but there is no defense of these ideal images of the human being. Discussions of the posthuman take place as if we have already decided what it means to be human and yet, as Landmann suggests, that is a question that always remains open. These discussions displace onto the question of the posthuman the difficult question of what it means to be human and, in so doing, they attempt to make that discussion seem easy and straightforward. The response to the posthuman is made obvious by reliance on simplistic but ultimately inadequate accounts of the human that only serve to obscure the more important issue we ought to be concerned with namely, what is the human being.

Ultimately, then, the notions of a turning point and of our posthuman future are being used primarily as rhetorical devices to motivate the troops. What is needed, though, is not motivation but careful critical attention to the choices that humanity faces. We get little out of the notion of a turning point or the posthuman when it comes to making these difficult choices. Here too it might seem that Landmann's philosophical anthropology offers little or no guidance. After all, he explicitly rejects any connection between philosophical anthropology and

ethics and disavows reaching normative conclusions on the basis of descriptive accounts of human nature. Philosophical anthropology, he writes, “is not interested in making metaphysical or ethical statements” (1974, 19). As we have seen, he emphasizes our creative and malleable nature, suggests that artificiality is our nature, and rejects any essential or natural or ideal model of human nature. “If our creativity is a genuine creativity, it cannot be limited by pre-existing norms” (1985, 56). He recognizes that our freedom to shape our form historically contains a danger but notes as great a danger from the imposition of norms.

Man can cling to poor and base forms; he can strike upon false and destructive forms. Ethics fears that he could violate the norms; philosophical anthropology has the deeper fear that the norm itself could be disastrous. (1985, 118)

Landmann is, moreover, explicitly critical of philosophical and political systems that limit human freedom out of fear that human beings will misuse freedom.

To avoid risk, these systems try to bring the historical process to a halt. But the loss of freedom is a deadly handicap. For man learns by trial and error from his sufferings. His mistakes can lead antithetically to improvement. (1985, 119)

This apparently suggests that we will find few resources in philosophical anthropology for coming to terms with the difficult choices that humanity faces in light of developments with bio-technology and cyber-technology. And yet I think so sweeping a generalization as this is unwarranted. While it is true that Landmann warns against drawing normative conclusions on the basis of a formal and descriptive philosophical anthropology, his account of human nature better structures the debate we ought to have than does a discussion of the posthuman. There are several reasons for thinking so. First, Landmann’s philosophical anthropology discloses precisely why these debates are so fraught. At their core, they are debates over our self-image. We must already understand that our self-image is an open question, that our self-images are not static, and that they have a formative effect (in Landmann’s terms, “man’s knowledge of man is not without effect on man’s being” [1974, 20]), in order to fully appreciate the dilemmas we cur-

rently face. The conflicting responses we have to the potential impacts of technology on human nature remind us most directly and urgently that our self-image is an open question. Landmann's philosophical anthropology serves to remind us that these questions are as unavoidable as they are risky. We are always in process, so to speak, and cannot foreclose upon that question. "We can always give only a temporary clarification for the 'open question' that we always remain for ourself at the heart of our being" (1974, 226).

Landmann argues that the human being "may and must again and again give himself his features from his ultimate amorphousness, this intermixture of unstructuredness, plasticity, and the mission of self-education" (1974, 226). But that of course is not the whole story. For the human being is also a historical and social and traditional being. While our self-image is always an open question, it is a question that is answered in particular concrete historical situations. As we have seen, culture is correlative to creativity and Landmann reminds us:

There is no such thing as a general man with timelessly permanent structures or an invariable human nature. Theory must therefore begin with society and history. These are primary; man must be understood in terms of them, and not vice versa. (1974, 269)

That we are an open question means that we can find no final, definitive, and fixed answer to the questions that technology currently poses. It also means that the answers that we might give can only come from our cultural, social, and historical traditions. Rather than cut us off from these traditions by emphasizing the coming turning point and the transformation of the human into the posthuman, Landmann's philosophical anthropology suggests that the only resources we have for addressing these questions is in those traditions. From such a social and historical perspective on human nature, one cannot characterize the human being in terms of some single, isolable property which serves to define our essence or our dignity. Rather, one must have a recourse to what Midgley refers to as a "rich and complex arrangement of powers and qualities" (1995, 207). This of course means that there can be no easy answer to the questions posed by the development of new technologies. But why should we ever expect otherwise? We human beings

are a complex lot. It is only from false and simplifying perspectives that these choices would ever seem easy. And while norms and values cannot be read off our nature directly and transparently, it doesn't mean that our nature cannot provide some indirect and practical guidance. It suggests that we should be wary of claims such as Kass's or Fukuyama's that a previously unalterable human nature can supply a standard or norm for human self-improvement. It suggests as well, contra Stock, that human beings are not simply malleable stuff to be engineered and remade at will. It further suggests that as social and historical beings, we must remain sensitive to the ways we are multiply constructed in and by culture and cognizant of the concrete social and political context of our schemes for self-fashioning. It suggests, too, that we reject an overly instrumentalist and atomistic approach to these questions. As Landmann observes, we become human only in the context of other humans. Our choices, our plans for self-modification, our ways of responding to technology, only make sense in a broader cultural and social context. Landmann suggests that there is no paradigmatic norm hovering over the human being, no germ that he need merely develop. "His mission," he writes, "is to design and form himself responsibly" (1985, 267). That of course is not an easy task. Nor is it a posthuman task. It is the task of human beings facing directly each day the difficult task of determining the meaning of what it is to be human.

References

Bellah, Robert, Richard Madsen, William M. Sullivan, Ann Swidler and Steven M. Tipton

1985 *Habits of the Heart: Individualism and Commitment in American Life*. Berkeley, CA: University of California Press.

President's Council on Bioethics

2003 *Beyond Therapy: Biotechnology and the Pursuit of Happiness*. New York, NY: Regan Books.

Birkerts, Sven

1994 *The Gutenberg Elegies*. New York, NY: Fawcett Columbine.

Buber, Martin

1965 *Between Man and Man*. Trans. R.G. Smith. New York, NY: MacMillan.

Bukatman, Scott

1993 *Terminal Identity*. Durham, NC: Duke University Press.

Cassirer, Ernst

1944 *An Essay on Man*. New Haven, CT: Yale University Press.

Cole, Ronald

1998 Do Means Matter? In *Enhancing Human Traits: Ethical and Social Implications*, ed. Erik Parens, 151–61. Washington, DC: Georgetown University Press.

Dallmayr, Fred

1974 Plessner's Philosophical Anthropology. *Inquiry* 17: 49–77.

de Mul, Jos

2003 Digitally Mediated (Dis)Embodiment. *Information, Communication, and Society* 6(2): 247–66. doi:10.1080/1369118032000093914 <http://dx.doi.org/10.1080/1369118032000093914>

della Mirandola, Pico

1956 *Oration on the Dignity of Man*. Trans. A. Robert Caponigri. Washington, DC: Regnery Gateway.

Dreyfus, Hubert and Stuart Dreyfus

1986 *Mind Over Machine*. New York, NY: Free Press.

Flanagan, Owen

2002 *The Problem of the Soul*. New York, NY: Basic Books.

Fukuyama, Francis

2002a Biotechnology and the Threat of a Posthuman Future. *Chronicle of Higher Education: The Review*, March 22, 5–7.

2002b *Our Posthuman Future*. New York, NY: Farrar, Straus, and Giroux.

Garreau, Joel

2005 *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—and What it Means to Be Human*. New York, NY: Doubleday.

Geertz, Clifford

1973 *The Interpretation of Cultures*. New York, NY: Basic Books.

Gehlen, Arnold

1988 *Man*. Trans. Clare McMillan and Karl Pillemer. New York, NY: Columbia University Press.

Grene, Marjorie

1976 To Have a Mind... *The Journal of Medicine and Philosophy* 1(2): 177–99.

Hardison, O.B.

1989 *Disappearing Through the Skylight*. New York, NY: Viking.

Joy, Bill

2000 Why the Future Doesn't Need Us. *Wired*, April.

Kass, Leon

1997 The Wisdom of Repugnance. *The Human Life Review* 23(3): 63–88.

2000 The Moral Meaning of Genetic Technology. *The Human Life Review* 26(1): 76–87.

2001 Preventing a Brave New World. *The Human Life Review* 27(3): 14–35.

2002 *Life, Liberty, and the Defense of Dignity*. San Francisco, CA: Encounter Books.

2003 Foreword. In *Beyond Therapy*, President's Council on Bioethics, xv–xvii. New York, NY: Regan Books.

Kurzweil, Ray

1999 *The Age of Spiritual Machines*. New York: Viking.

2005 *The Singularity is Near: When Humans Transcend Biology*. New York, NY: Viking.

Landmann, Michael

1974 *Philosophical Anthropology*. Trans. David Parent. Philadelphia, PA: The Westminster Press.

1985 *Fundamental Anthropology*. Trans. David Parent. Washington, DC: Center for Advanced Research in Phenomenology.

The Matrix (motion picture)

1999 Dir. Larry and Andy Wachowski. Warner Brothers.

McKibben, Bill

2003 *Enough: Staying Human in an Engineered Age*. New York, NY: Henry Holt and Co.

Midgley, Mary

1995 *Beast and Man: The Roots of Human Nature*. rev. ed. London: Routledge.

Moravec, Hans

1988 *Mind Children*. Cambridge, Mass: Harvard University Press.

1998 *Robot*. Oxford: Oxford University Press.

Nussbaum, Martha

2000 *Women and Human Development: The Capabilities Approach*. Cambridge: Cambridge University Press.

Pfeutze, Paul

1954 *Self, Society, and Existence*. Westport, CN: Greenwood.

Plessner, Helmuth

1981 *Die Stufen des Organischen und der Mensch*. Frankfurt Am Main: Suhrkamp.

Poster, Mark

1990 *The Mode of Information*. Chicago, IL: The University of Chicago Press.

Regis, Ed

1990 *Great Mambo Chicken and the Transhuman Condition*. Reading, MA: Addison-Wesley, 1990.

Rothacker, Erich

1965 *Philosophische Anthropologie*. Bonn: H. Bouvier.

Scheler, Max

1961 *Man's Place in Nature*. Trans. Hans Meyerhof. New York, NY: Farrar, Straus, and Giroux [1928].

Schrag, Calvin

1986 *Communicative Praxis and the Space of Subjectivity*. Bloomington, IN: Indiana University Press.

Stelarc

1998 From Psycho-Body to Cyber-Systems: Images as Post-human Entities. In *Virtual Futures*, ed. Joan Broadhurst Dixon and Eric J. Cassidy, 116–23. London: Routledge.

Stock, Gregory

2002 *Redesigning Humans: Our Inevitable Genetic Future*. New York, NY: Houghton Mifflin.

Stone, Allucquere Rosanne

1995 *The War of Desire and Technology at the Close of the Mechanical Age*. Cambridge, MA: The MIT Press.

Talbott, Stephen

1995 *The Future Does Not Compute*. Sebastopol, CA: O'Reilly and Associates, Inc.

Taylor, Charles

- 1985 Foreward. *Social Action and Human Nature*. By Axel Honneth and Hans Joas. Trans. Raymond Meyer. Cambridge: Cambridge University Press.

Vinge, Vernor

- The Coming Technological Singularity: How to Survive in the Post-human Era. <http://www-rohan.sdsu.edu/faculty/vinge/misc/singularity.html>

Warwick, Kevin

- 2000 Cyborg 1.0. *Wired* 8.02: 145–51.

Washburn, S. L.

- 1959 Speculations on the Interrelations of the History of Tools and Biological Evolution. In *The Evolution of Man's Capacity for Culture*, ed. J. N. Spuhler, 21–31. Detroit, MI: Wayne State University Press.

Weizenbaum, Joseph

- 1976 *Computer Power and Human Reason*. New York, NY: W. H. Freeman and Co.

Wolfe, Alan

- 1993 *The Human Difference*. Berkeley, CA: University of California Press.