

THE SINGULARITY: A CRUCIAL PHASE IN DIVINE SELF-ACTUALIZATION?

Michael E. Zimmerman

ABSTRACT: Ray Kurzweil and others have posited that the confluence of nanotechnology, artificial intelligence, robotics, and genetic engineering will soon produce posthuman beings that will far surpass us in power and intelligence. Just as black holes constitute a “singularity” from which no information can escape, posthumans will constitute a “singularity:” whose aims and capacities lie beyond our ken. I argue that technological posthumanists, whether wittingly or unwittingly, draw upon the long-standing Christian discourse of “theosis,” according to which humans are capable of being God or god-like. From St. Paul and Luther to Hegel and Kurzweil, the idea of human self-deification plays a prominent role. Hegel in particular emphasizes that God becomes wholly actualized only in the process by which humanity achieves absolute consciousness. Kurzweil agrees that God becomes fully actual only through historical processes that illuminate and thus transform the entire universe. The difference is that for Kurzweil and many other posthumanists, our offspring—the posthumans—will carry out this extraordinary process. What will happen to *Home sapiens* in the meantime is a daunting question.

KEYWORDS: Kurzweil; Vinge; Singularity; Posthumanism; Transhumanism; Extropians; Theosis; Luther, Hegel, Nietzsche, St. Paul

For the anxious longing of the creation waits eagerly for the revealing of the sons of God. For the creation was subjected to futility, not willingly, but because of Him who subjected it, in hope that the creation itself also will be set free from its slavery to corruption into the freedom of the glory of the children of God. For we know that the whole creation groans and suffers the pains of childbirth together until now.

St. Paul, Letter to the Romans, 8: 19-23

Universal history is the exhibition of Spirit in the process of working out the knowledge of what it [Spirit] potentially is. Just as the seed bears in itself the whole nature of the tree, including the taste and form of its fruit, so do the first traces of Spirit virtually contain the whole of its own history.

Hegel, Lectures on the Philosophy of History¹

1. G.W.F. Hegel, *The Philosophy of History*, trans. J. Sibree (New York: Dover, 1956), 17.

This is the ultimate destiny of the Singularity and of the universe. [...] Our civilization will ... expand outward, turning all the dumb matter and energy we encounter into sublimely intelligent—transcendent—matter and energy. So in a sense, we can say that the Singularity will ultimately infuse the universe with spirit....

Ray Kurzweil, *The Singularity is Near*²

Ever since Donna Haraway published her “Cyborg Manifesto” two decades ago, there has been an outpouring of literature—fiction, non-fiction, and informed speculation—about the extraordinary human transformation that purportedly will begin in the next few decades, after the development of computers with millions of times the processing power of the human brain. Encouraging and accompanying such literature have been spectacular scientific accomplishments on many fronts, some of the ethical and political implications of which have sparked sharp controversy. Public scrutiny has focused mainly on stem-cell research, cloning, and other kinds of bioengineering, but—according to trans- and posthumanists—these achievements will pale in comparison with the consequences of the confluence of genetic engineering, nanotechnology, robotics, and artificial intelligence.³ We are told that in coming decades, as innovation rates in these domains become exponential and are represented nearly vertically on graphs, there will occur a developmental “Singularity” or “Spike,” when there will emerge post-human beings with whose power and intelligence will so far surpass our own that they will seem God-like.

In this essay, I examine the extent to which post-humanism draws upon and extends a long-standing theme in Western philosophy and theology, according to which humans have the capacity to become virtually divine. After introducing trans- and post-humanism, I discuss briefly how technological innovation allows their proponents to believe they are helping to bring forth extraordinary beings, akin to Nietzsche’s Overman, but with powers bordering on the divine. Dramatically re-interpreting Martin Luther’s theology, G.W.F. Hegel depicted humankind as the instrument through which absolute *Geist* (spirit) achieves total self-consciousness. Jesus Christ was the man who became God, as much as the God who became human. Similarly, leading post- and trans-humanist, Ray Kurzweil revises the customary conception of God to accommodate the possibility that humans are taking part in a process by which post-human beings (*creatures*, according to traditional theism) will attain powers equivalent to those usually attributed to God. Some may construe post-humanism as an appalling instance of *hubris*, in which individ-

2. Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology* (New York: Penguin Books, 2005), 389, 21

3. Douglas Mulhall, *Our Molecular Future: How Nanotechnology, Robotics, Genetics and Artificial Intelligence Will Transform Our World* (Amherst, NY: Prometheus Books, 2002). See also the NSF/DOC-sponsored report, *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science* (June, 2002), <http://www.wtec.org/ConvergingTechnologies/>

uals propose taking enormous risks both with themselves and with the human species, in order to pursue an impossible goal. Others, however may construe post-humanism as calling for alignment of personal energy with a cosmic evolutionary imperative: to preserve self-conscious organic life—currently threatened by anthropogenic environmental disaster—long enough to transfer it to a more enduring substrate needed to support an evolutionary process that culminates when the entire universe is made conscious. If this astonishing goal ever begins to bear fruit, future theologians would presumably rethink traditional conceptions of cosmos and history, humankind and God.

PART ONE: AN INTRODUCTION TO TRANS- AND POST-HUMANISM

Futurist, novelist, scientist, and post-humanist Vernor Vinge borrowed the term “singularity” from astrophysics, which uses it to describe the event horizon around a black hole, the gravitational pull of which is so enormous that nothing—not even light—can escape. We can know nothing about occurs beyond the horizon at which the pull of gravity takes over.⁴ Vinge uses the term to refer to the event horizon that will arise once post-human intelligence emerges that is far greater than anything humans can now imagine. According to post-humanist Max Born,

the Singularity includes the notion of a “wall” or “prediction horizon”—a time horizon beyond which we can no longer say anything useful about the future. The pace of change is so rapid and deep that our human minds cannot sensibly conceive of life post-Singularity. Many regard this as a specific point in time in the future, sometimes estimated at around 2035 when AI and nanotechnology are projected to be in full force.⁵

Born adds that as humankind itself undergoes extraordinary development in coming decades, the “wall” will recede a bit, allowing highly enhanced humans to gain a glimpse of what might be possible for beings of even greater intelligence.

Before going further, we should ask: What, exactly, is meant by “intelligence” here? Those promoting highly enhanced humans and post-humans do not have a common definition of it, although they often speak of intelligence in terms of the brain’s computational power, which is linked to human cognition. Such cognitive activity is clearly prized among the many scientists and technical experts attracted to the enhancement process. Some people promoting human enhancements, however, take seriously the theory of “multiple intelligence”, insofar as they seek to enhance themselves (or others) in domains such as aesthetic appreciation, artistic creativity, athletic ability, emotional intelligence, and so on.⁶ Major mysteries still surround (various kinds of) human intel-

4. Vernor Vinge, “The Coming Technological Singularity” (1993). <http://www.accelerating.org/articles/comingtechsingularity.html>. Accessed on January 15, 2008. People speculate about what post-humans will do, of course, despite the “fact” that such speculation is presumably groundless!

5. Max Born, from “Max More and Ray Kurzweil on the Singularity,” <http://www.kurzweilai.net/articles/arto408.html?printable=1>. Accessed on January 8, 2008. See also Kurzweil, *The Singularity is Near*.

6. See Howard Gardner, *Frames of Mind: The Theory of Multiple Intelligences* (New York: Basic Books, 1993 [1983]); and Daniel Goleman, *Emotional Intelligence: Why It Can Matter More than IQ* (New York: Bantam

ligence, not to mention consciousness, however. Hence, not only does much work remain to be done (not to mention risks that must be taken) to enable significant artificial augmentation of human capacities.⁷

Leading support to the post-human Singularity, according to the increasingly visible, international transhumanist movement, will be a surge of “new sciences and technologies [designed] to enhance human mental and physical abilities and aptitudes, and [to] ameliorate what it regards as undesirable and unnecessary aspects of the human condition, such as stupidity, suffering, disease, ageing and involuntary death.”⁸ Transhumanism opens the way for post-humanism, in which super-intelligent robots will abandon the biological body for a far more permanent substrate, and may end up reshaping the entire universe.⁹ Explicating such views in *The Age of Spiritual Machines: When Computers Exceed Human Intelligence* (2000) and in *The Singularity Is Near: When Humans Transcend Biology* (2006), inventor Ray Kurzweil describes how genetic engineering, robotics, information technology, and nanotechnology (GRIN) will join forces to transform and later to transcend the human species.

It is easy to feel giddy at the prospect that human life will be profoundly enhanced by bio- and nano-technological interventions that will ostensibly increase life span, intelligence, sensory capacity, athletic achievement, personal appearance, aesthetic appreciation, artistic talent, and so on. Given the long-standing human desire for such improvements, and the extent to which people are already purchasing them as they come onto the market, one can expect that early adopters will voluntarily take significant risks by buying enhancements that promise huge benefits.¹⁰ Despite the undeniable attraction of living longer, people may well be concerned about the personal, social, and cultural consequences of living fifty or even one hundred years longer than we do today. Average life spans approaching eighty years are already playing havoc with Social Security and other social programs designed with much shorter life spans in mind. If people eventually live to be 150, will they have to work until they are 110 to provide for their retirement? Will people be expected to remain married to the same spouse for 125 years or more? How will rising generations find meaningful work if there is no compulsory retirement

Books, 1997).

7. Typically missing from discussions of intelligence and consciousness is the extent to which finitude is crucial for both. Consciousness purportedly arose as an adaptive strategy for optimizing survival and reproductive success. Life matters to itself; it wants to continue. Consciousness enhances the fact that my life matters to me. But life is bound up with death, and—arguably—consciousness is bound up with finitude. Hence, a profound understanding of intelligence and consciousness will require insight into death, finitude, and mortality. The issues I bring up here are informed by the work of Martin Heidegger.

8. “Transhumanism,” *Wikipedia*, <http://en.wikipedia.org/wiki/Transhumanism>. Accessed on May 29, 2007. See also “The Transhumanist Declaration,” World Humanist Association website: <http://transhumanism.org/index.php/WTA/declaration/>, accessed on January 16, 2008; Nick Bostrom, “A History of Transhumanist Thought,” *Journal of Evolution and Technology*, 2005, Vol.14, No. 1. Available on Bostrom’s home page: <http://www.nickbostrom.com/>.

9. See Hans Moravec, *Robot: Mere Machine to Transcendent Mind* (New York: Oxford University Press, 2000).

10. See Gregory Stock, *Redesigning Humans: Choosing Our Genes, Changing Our Future* (New York: Mariner Books, 2003).

age and people are living well into their 100's?

In reply, transhumanists argue that the same exponential rate of innovation that makes possible increased longevity will also put an end to the need for work. Nanotechnology will allow people to produce almost anything in their counter-top fabricators. As products become vanishingly inexpensive, people will find far more interesting and challenging things to do than to earn a paycheck. By ending polluting and wasteful forms of production, transhumanists say, we will avoid creating new environmental problems, while we use astonishing new technologies to mitigate existing environmental problems.

Critics doubt, however, that promised enhancements will be equally distributed. Presumably, only those who can afford enhancements will be able to purchase them. Hence, liberal democracy may be replaced by a kind of enhancement-based caste system.¹¹ Transhumanists reply that forthcoming increases in wealth will make enhancements available to just about anyone who chooses to receive them, thereby avoiding the purported emergence of a new caste system. Striving to perfect humankind, so we are told, ought not to be restrained by debates about political, moral, or religious implications of technologically aided human enhancements. Transhumanists are libertarians who say, in effect: "We don't ask others to opt for the enhancements that are coming, but we do ask others not to interfere with our right to take advantage of such enhancements." One can certainly envision the prospect, however, of at least some humans attaining such exalted status that they will inspire awe, fear, and jealousy on the part of "naturals," that is, the un-enhanced.¹²

Some posthumanists, including Kurzweil, represent the Singularity as a turning point in the evolutionary process that will give rise to extraordinary beings capable of awaking the entire material universe. Such an awakening may be viewed as actualizing a potential present from the very beginning. By capitalizing "Singularity", posthumanists suggest that the event is not merely important, but numinous, that is, possessing what amounts to a sacred dimension. Posthumanists such as Kurzweil represent the future in ways consistent with at least some conceptions of God. Many trans- and posthumanists, however, deny that there is any religious content to their predictions about enhanced humans, or about the Singularity, which will purportedly allow post-human intelligence to reconstruct the laws of nature and thus reorder the entire universe! Yet, scientists currently engaged in the research needed to make transhumans and subsequently posthumans possible, frequently use religious imagery. Consider the following

11. See Jürgen Habermas, *The Future of Human Nature*, trans. Hella Beister and William Rehg (Polity Press, 2003). For a critique of Habermas and other secular humanists opposing human enhancement, see K. Mark Smith, "Saving Humanity? Counter-arguing Posthuman Enhancement?" *Journal of Evolution and Technology*, Vol. 14 (April, 2005), <http://jetpress.org/volume14/smith.html>. Accessed on January 14, 2008.

12. The film *Gattaca* provides an insightful treatment of issues faced in the future by a young "natural" struggling to become an astronaut, a position restricted to the technologically enhanced. See David A. Kirby, "The New Eugenics in Cinema: Genetic Determinism and Gene Therapy in GATTACA." *Science Fiction Studies*, #81, Volume 27, Part (July, 2000), <http://www.depauw.edu/sfs/essays/gattaca.htm>. Accessed on January 16, 2008.

2007 newspaper article, the headline of which reads: “Tail cells to stem cells: Break-through electrifies.” The story continues:

Scientists have reprogrammed ordinary cells and rewound their developmental clocks to make them virtually indistinguishable from embryonic stem cells.... “*This is truly the Holy Grail*—to be able to take a few cells from a patient, say a cheek swab or some skin cells, and turn them into stem cells in the laboratory,” said Dr. Robert Lanza, an embryonic stem-cell researcher at Advanced Cell Technology Inc. in Worcester, Mass., who was not involved in the research. “It would be like *turning lead into gold*.”¹³

Even when explicitly opposed to theistic religion, trans- and posthumanists usually represent coming developments in terms of modified progressive narratives that arguably derive from early modern thought, according to which humankind could regain one aspect of its prelapsarian status by acquiring the scientific knowledge and technological capability needed to control Creation. Trans- and posthumanism follow the trajectory of modernity’s project of overcoming finitude, death, violence, and oppression by redesigning and pacifying human nature, on the one hand, and by controlling external nature, on the other.

The optimism currently discernible in trans-humanists and posthumanists has long been a potent influence in Western civilization. During the last century in particular, natural science, technology, engineering and industry have made possible truly remarkable achievements, which have altered the social fabric. In *Future Shock* (1970), sociologist Alvin Toffler insightfully predicted that exponential scientific-technological growth would overwhelm individuals and shake socio-cultural foundations, but even he could not anticipate the mind-blowing changes that are ostensibly on the way.

Social dislocations accompanying rapid technological change were one reason that until only recently many people were skeptical and even cynical about the promises associated with modern technology. After all, in addition to making such notable contributions as developing penicillin, inventing the airplane, and promoting constitutional democracy, moderns have also created poisonous gas for concentration camps, nuclear-tipped ICBMs capable of rendering humankind extinct, industrial pollution threatening the integrity of the biosphere, and the enormous institutions designed by social engineers following the modern Gospel of ever greater efficiency. A central goal of all modern economy—capitalist or communist—has been to attain ever-greater efficiency in production, which in turn requires ever-greater mastery of natural processes and ever-greater pacification of human society.

For many years, efforts at such pacification were limited to altering behavior through ideology and institution. In coming decades, however, techniques capable of massively altering or even re-inventing non-human organisms will be brought to bear on the human genome at the molecular level. This unprecedented development has implications that are only starting to dawn on some people. For one thing, it will presumably

13. *Denver Post*, Thursday, June 7, 2007, 3A. Emphasis mine.

erase the distinction between the human and the natural. Control at the molecular level over nature means control over the very “nature” of humankind as well as over the rest of nature. Who—or what—will exercise such control, and to what ends, remain undetermined.

The social, cultural, personal, and environmental costs of technological innovation have led many people to arrive at totalizing critiques of modernity, while ignoring its *noble* aspects, including political liberation, personal autonomy, increased life spans, better health, and a host of other positive developments. Would anyone *really* want to be transported back many centuries ago, when life spans were short, politics were hierarchical and exclusionary, and personal freedoms limited or non-existent? Only a few decades ago, however, some people believed that technological determinism was leading either to literal destruction of humankind and the biosphere, or at least to indirect destruction of humankind through processes of objectification. In 1979 one of the nuclear reactors at the Three Mile Island power plant in Pennsylvania suffered a partial meltdown. The nuclear arms race between the USA and USSR had been brought to the hair-trigger stage, by the introduction of MIRVed missiles, which could destroy enemy missiles in their silos. Gloom about eco-apocalypse was widespread, even on the part of many industrial and governmental elites.

In that same year, however, Jean-François Lyotard published *The Postmodern Condition*, according to which the supposedly monolithic techno-industrial society—as conceived either by systems-theorist such as Talcott Parsons and Niklaus Luhmann, or by socialist theorists such as Herbert Marcuse—was gradually being undermined by the increasing availability of information, which had become central to science, technology, and economic production. Players in information-rich social networks, so Lyotard predicted, would develop a multiplicity of language games that would erode the status of “grand narratives,” whether religious or secular. Instead of being at the mercy of all-embracing ideologies and objectifying socio-industrial systems, then, computer-networked individuals would define themselves, their values, and their futures in novel ways. A little more than a decade later, the information revolution helped to bring down the USSR.

Around this time, noted technology critic Jacques Ellul conceded that the public had largely abandoned its suspicion of technological innovation, and had embraced the digital revolution and other dramatic technological developments. Ellul used the term “technological bluff” to refer to how modern technology showcases its extraordinary promises, while concealing its negative consequences. Like ideology, according to Ellul, modern technology reveals as much as it conceals. Today, the cascade of technological innovations is incorporated into everyday life with little resistance or questioning. The growing tempo of innovation is taken to be “normal,” rather than threatening. Bucking this trend, Ellul regarded as “myth pure and simple” the claim that the digital revolution would bring about greater personal freedom and self-expression.¹⁴

14. (TB, 276-277, quoted in Wha-Chul Son, “Reading Jacques Ellul’s *The technological bluff* in context,” *Bulletin of Science, Technology, and Society*, 24, 2004, p. 526.) See Jacques Ellul, *The Technological Bluff*, trans.

Trans- and posthumanists would reply that the promise of technology is neither a “myth” nor a “bluff,” but rather a morally legitimate and technically plausible attempt to improve the human condition, not only by adding longer life spans and greater material well-being, but also by in fact augmenting human freedom and the capacity for self-expression. Renouncing talk of limits and discounting warnings about *hubris*, trans- and posthumanists insist that they are paving the way for a potentially glorious future. Posthumanists often cite the following passage from the prologue to Nietzsche’s *Thus Spoke Zarathustra*:

I teach you the Overman! Mankind is something to be overcome. What have you done to overcome mankind?

All beings so far have created something beyond themselves. Do you want to be the ebb of that great tide, and revert back to the beast rather than overcome mankind? What is the ape to a man? A laughing-stock, a thing of shame. And just so shall a man be to the Overman: a laughing-stock, a thing of shame. You have evolved from worm to man, but much within you is still worm. Once you were apes, yet even now man is more of an ape than any of the apes.¹⁵

Just as humans would be a laughing stock for the Overman, so too un-enhanced humans will be a laughing stock for post-humans, who will be millions or even billions of times more intelligent than are humans. Mitchell Porter opines:

[W]e’re midway in the chain of being from microbe to megamind, a turning point but not an endpoint. We are a turning point, among other reasons, because of our technology: we are the first organisms to leave the planet, to discover fundamental laws, to tinker with our brains and genes. But this is surely only the start of the auto evolutionary process. I would not expect it to stabilize until we arrived at, say, a galaxy full of Jupiter-brains, all bent on projects that would mostly be incomprehensible to us.¹⁶

Jaron Lanier uses the term “extropians” to describe today’s trans- and post-humanistic utopians. A combination of the terms extrapolate and utopian, extropian means someone who supports not a static utopia, but rather an open-ended domain subject to ever increasing improvement.

The new divide is between what I’ll call Extropians and Stewards. A Steward is somebody who wants to manage the world as a precious resource, and an Extropian is someone who wants to let some big, impartial evolution-like process run wild with it. Extropians differ about which process this should be, though it certainly can be the more traditional libertarian capitalism combined with the self-propelled onslaught of new technologies. Extropians don’t worry about natural resources running out, or about poverty, or any of the other problems that frighten Stewards, because they are convinced that new technologies will

Geoffrey Bromiley (Grand Rapids, Michigan: Eerdmans Publishing Company, 1990).

15. Friedrich Nietzsche, *Thus Spoke Zarathustra*, in *The Portable Nietzsche*, trans. Walter Kaufmann (New York: Viking Press, 1977), 124.

16. Mitchell Porter, “Transhumanism and the Singularity,” <http://members.tripod.com/Transtopia/semper.html>. Accessed on January 8, 2008.

solve the problems if we just give capitalism and science an unfettered chance. Stewards speak a language of what's already here, like human beings and rocks, while Extropians believe that everything here is going to be replaced by new, evolving things anyway.¹⁷

Understandably, many critics on trans- and posthumanism have reservations about gambling the future of humankind on risky innovation. Even if such critics persuade the federal government to limit research in certain areas, however, private corporations will conduct such research on their own. Corporations weigh financial (and ethical) risk against untold profits that would be generated by successful enhancements that slow the aging process while conferring extraordinary powers. But, critics also warn that application of emerging technology—developed outside the scrutiny of government supervision or public discussion—will lead to disasters, ranging from anthropogenic environmental apocalypse to human enslavement/annihilation imposed by creatures of our own making. The popular film trilogies, *The Terminator* and *The Matrix*, were based on the premise that technological innovation will generate unanticipated and possibly devastating consequences.¹⁸

Extropians sometimes acknowledge that they have mixed feelings about the new technologies. For instance, Lanier admires extropianism “because it is creative and unbounded, yet is also gives me the creeps.”¹⁹ Why? Because “Evolution is nothing more than the victor’s word for genocide.” Would post-humans ignore humans, tolerate them, cultivate them as aboriginal curiosities, or simply eliminate them? Extropian Damien Broderick, author of *The Spike: How Our Lives Are Being Transformed by Rapidly Advancing Technologies*, concedes that things may go awry, as would be the case if self-replicating nanobots were to ceaselessly replicate themselves, thereby enveloping Earth in a life exterminating “gray goo.”²⁰ Most posthumanists agree that it would be ironic if humankind were surpassed by beings that humans made possible, and tragic if such post-humans did away with humankind altogether. Still, more than a few posthumanists assert without nostalgia that evolutionary development is indifferent to the fate of what came before. For them, the prospect of dramatically improving ourselves in the process of giving birth to something far greater than humankind more than justifies taking risks.

Only time will tell which of the following three possibilities will be realized: 1) The

17. Jaron Lanier, “The Future,” <http://www.jaronlanier.com/topspintx.html>. Accessed on January 8, 2008

18. Fears about a technologically supported Big Brother regime were exploited by the (in)famous Apple Computer ad, which aired only once, during the 1984 Super Bowl. In the ad, a young female athlete, chased by police thugs, hurls a sledgehammer that smashes the huge TV image of a glowering tyrant, propagandizing zombie-like people enslaved to the totalizing regime... of modernity? At the end of the ad, we are told: “On January 24th Apple will introduce Macintosh. So that 1984 won’t be like ‘1984.’” The right design and use of modern technology, so the ad indicated, could liberate people from monolithic social practices and corporate hegemony. Lyotard’s surmise was becoming popularized: Information in the hands of the many could undo the machinations of the powerful few.

19. Jaron Lanier, “The Future,” <http://www.jaronlanier.com/topspintx.html>.

20. Damien Broderick, *The Spike: How Our Lives Are Being Transformed by Rapidly Advancing Technologies* (New York: Forge, 2001), 79-80. This is a very informative work.

extropian drive to total mastery and perfection will succeed, possibly at the cost of the viability of our own species; 2) the extropian drive will end in dystopia; or 3) the drive will make possible dramatic, but limited changes in humankind.²¹ Between the extropians and dystopians are appreciative critics of trans- and post-humanism.

Nikolas Rose, for instance, warns against assuming that the present epoch is pivotal, revolutionary, and unprecedented. Coming decades will indeed bring significant changes, but there will be important continuities as well. That is, the Singularity is unlikely to occur, although aspects of trans-humanism may be realized. N. Katherine Hayles is intrigued by possibilities opened up technological innovation, but also cautions against conceiving of the future in terms of an initiating Idea that grounds and guides subsequent development. Moreover, echoing decades of feminist suspicion about the body-despising tendencies of modern “man,” she cautions against the desire to replace the organic human body with a more enduring and reliable silicon “substrate.” Donna Haraway, in her “Cyborg Manifesto,” proposed an alternative to Western myths of origin and return.

The cyborg incarnation is outside salvation history. In a sense, the cyborg has no origin story in the Western sense - a ‘final’ irony since the cyborg is also the awful apocalyptic telos of the ‘West’s’ escalating dominations of abstract individuation, an ultimate self untied at last from all dependency, a man in space. An origin story in the ‘Western,’ humanist sense depends on the myth of original unity, fullness, bliss and terror, represented by the phallic mother from whom all humans must separate, the task of individual development and of history.... The cyborg skips the step of original unity, of identification with nature in the Western sense. This is its illegitimate promise that might lead to subversion of its teleology as star wars.²²

Writing at the peak of the nuclear arms race in the mid-1980s, Haraway feared that the Western teleological narrative of reunification, in which all otherness is overcome, would lead to human self-annihilation. Haraway proposes to replace this narrative with one of open-ended and risky reinvention by engaging with the possibilities of modern technology. Post-humanist discourse, including Ray Kurzweil’s, represents at least in some respects the Western salvation narrative. Kurzweil’s book, *The Singularity Is Near*, for instance, makes predictions with a decidedly eschatological flavor. If super-luminary speeds can be attained, Kurzweil predicts, post-humans will eventually transform the entire universe into an all-powerful intelligence resembling in important respects the monotheistic God. Kurzweil’s God does not transcend nature, but instead brings nature to the zenith of its intrinsic possibilities. Humankind will supposedly give birth to godlike post-humans who radiate intelligence, creativity, power, and compassion. Post-

21. See Vernor Vinge, “What If the Singularity Does Not Happen?” (2007), *KurzweilAI.net*, <http://www.kurzweilai.net/meme/frame.html?main=/articles/arto696.html>. Accessed on January 15, 2008. See also “Singularity Chat with Vernor Vinge and Ray Kurzweil,” (2002), *KurzweilAI.net*, <http://www.kurzweilai.net/meme/frame.html?main=/articles/arto476.html>. Accessed on January 15, 2008.

22. Donna Haraway, “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century,” in *Simians, Cyborgs and Women: The Reinvention of Nature* (New York; Routledge, 1991), 150-151.

humans, then, are the vehicles through which the intra-worldly God comes to full self-actualization.

PART TWO: HUMANS-AS-GOD IN CHRISTIAN THEOLOGY AND METAPHYSICS

Although two millennia separate St. Paul and Ray Kurzweil, they share two important convictions. First, humankind is not destined forever to remain in bondage to mortal flesh. Second, either redeeming (St. Paul) or forsaking (Kurzweil) the human body would eventually deliver the entire cosmos from its current condition of suffering and limitation. For St. Paul, Christ's sacrifice on the cross redeems the human body from the corruption and mortality imposed by the Fall. The salvation-body of reborn humans will be akin to the transfigured body of Christ revealed on Mount Tabor. In the New Testament, we read: "[T]hus are we transfigured into His [Jesus Christ's] likeness, from splendor to splendor." (2 Corinthians 3:18) In Eastern Orthodoxy, the feast of the Transfiguration is second in importance only to Easter. Christ's transfiguration prefigures *theosis*, according to which God's becoming human in the form of Jesus Christ will enable humans to become God-like. A transfigured and resurrected body, however, can occur only in the context of a cosmos that has itself been transfigured. Hence, the New Jerusalem will be a glorious cosmos fit for glorified, God-like humankind.²³

Genesis states that humans were created in God's image, but the subsequent Fall prevented humans from bringing to fruition their God-like status. In freeing humankind from sin, Christ's sacrifice liberates people to realize their endowment as co-creators with God. John's Gospel emphasizes the cosmic dimension of the man-God, Jesus Christ:

In the beginning was the Word, and the Word was with God, and the Word was God. He was with God in the beginning.

Through him all things were made; without him nothing was made that has been made. In him was life, and that life was the light of men. The light shines in the darkness, but the darkness has not understood it....

He was in the world, and though the world was made through him, the world did not recognize him. He came to that which was his own, but his own did not receive him. Yet to all who received him, to those who believed in his name, he gave the right to become children of God— children born not of natural descent, nor of human decision or a husband's will, but born of God. (John, 1: 1-5, 10-13)

When the doctrine of *theosis* is combined with John's Gospel, the result is a view

23. See Kurt E. Marquart, "Luther and Theosis," *Concordia Theological Review*, Vol. 64, No. 3 (July, 2000), 182-205. I mention here only in passing the remarkable correlation between the three bodies of Jesus and the three bodies of the Buddha. Jesus incarnated as a human body, revealed himself to his disciples in his transfigured body, and is most fundamentally the cosmic *Logos*, source of all bodies whatsoever. Analogously, Buddhism speaks of the *Nirmanakaya* (ordinary body of Buddha), the *Sambhogakaya* (bliss-body or transfigured body of Buddha), and the *Dharmakaya* (Buddha understood as ultimate cosmological principle).

with potentially far-reaching implications for later centuries. Jesus Christ was incarnate cosmic *Logos*, which created and sustains all creatures and which infuses them with intelligibility. By becoming human, and redeeming humans from sin, the incarnate *Logos* demonstrated that human beings are capable of attaining a limited equality with *Logos*. In short, a fully redeemed and transformed humanity will be endowed with divine glory and energies, divine intelligence and creativity, divine love and responsibility for all Creation.²⁴

In a premodern context, *theosis* was understood as a gift from the supernatural Creator. Humans, through penitence and prayer, might prepare themselves to receive God's redeeming grace, but could not by their own efforts overcome the consequences of the Fall. Even in their fallen condition, however, humans can apprehend the objective structures of the Creation, because God designed mind to be capable of becoming those structures in a certain sense. Hence, Thomas Aquinas maintained that the pre-Christian Aristotle was capable of comprehending fundamental features of Creation.

Despite affirming that human intelligence can operate even in a fallen condition, few early Christians supposed that such intelligence would enable people to invent the technology needed to overcome the material consequences of the fall. Many medievals identified technology with labor, which was regarded as inferior to contemplation and learning. As William Leiss, David Noble, Lynn White, Jr., and others have pointed out, however, about a thousand years ago Europeans began to develop technological innovations capable of dramatically improving the human estate. Soon, theologians began interpreting such innovations not as the work of the devil, but rather as evidence that humans could restore their lost power over Creation, even if moral-spiritual redemption still had to await God's intercession.

The Protestant Reformation tended to encourage such efforts to gain control of Creation as compatible with the Biblical parable that people should develop and invest their talents wisely. One leading Reformation figure, however, Martin Luther had reason to be suspicious of such this-worldly ambitions. Luther described fallen humans as virtually nothing—lower than worms—when compared with almighty God.²⁵ For Luther, unredeemed humans could not, through their own efforts, heal the consequences of the Fall. Despite emphasizing that faith alone—not works—brings salvation, Luther claimed that humanity is fundamentally significant to and intertwined with divine history. A saved humanity will enjoy the fruits associated with being children of God.²⁶ God

24. The environmental stewardship implications of *theosis* have not been lost on Orthodox theologians, including Patriarch Bartholomew. See "Address of his All Holiness Ecumenical Patriarch Bartholomew to the Summit of Religions and Conservation Religion and Nature, 'The Abrahamic Faith's Concepts of Creation'" (Atama, Japan, April 5, 1995). <http://www.ec-patr.org/docdisplay.php?lang=en&id=449&tla=en>. Accessed on May 29, 2007

25. Here, we call to mind the remarks of Nietzsche's Zarathustra, according to whom humans will be like apes when compared with the Overman. The son of a Lutheran minister, Nietzsche was well aware of and even adopted some of Luther's caustic attitudes toward (unredeemed) humankind. Zarathustra's vision of the Overman, overtly pagan though that vision may be, draws upon the Christian vision of the transfigured Christ, the glorious God-Man.

26. See Alison Bird " 'Good to Think': Martin Luther's Conservative Iconoclasm (with Apologies to Lévi-

became incarnate to save humankind, but the fact of incarnation underscores God's profound love for and relationship with humankind. According to Luther's theology of the cross, when Christ died, God Himself died. Hence, the resurrection of the God-man foreshadows the future resurrection of God-like humans. In 1515, Luther wrote:

As the Word became flesh, so it is certainly necessary that the flesh should also become Word. For just for this reason does the Word become flesh, in order that the flesh might become Word. In other words: *God becomes man, in order that man should become God.*²⁷

Luther emphasized that for *theosis* to occur, God must reach down to humans via the grace needed for faith, rather than humans reaching up to God in the form of works. The Lutheran idea that human and divine destiny were deeply interwoven became a central to the idealism of Hegel, a Lutheran who graduated with a degree in theology from Tübingen in the late 18th century. Alison Bird argues that Luther, having applied to political reformation his insights about the importance of human individuals in relation to God, "released Christian faith from its previously cloistered confinement within traditional realms of religious devotion."²⁸ By raising the status of the person in relation to his savior,

[Luther] had initiated an evolutionary progression, from a self-consciousness which acknowledged its inferiority in relation to an omnipotent God, towards a secular self-consciousness which would in time claim the right to determine for itself, through reason and empirical experience, its own form of truth. . . . For, in Hegel's view, Luther had, unwittingly and *in total contradiction to his original aim*, facilitated the initiation of the Enlightenment epistemological project which sought to establish the autonomy of reason and dispose of faith.²⁹

In the late 1700s, while a theology student at Tübingen, Hegel began to radicalize Luther's notion that Jesus Christ is man become God.³⁰ In philosophical concepts, Hegel claims to have brought to fulfillment the implications what Jesus had articulated in terms of religion. According to Hegel, God actualizes Himself through a dialectical process that works itself out through human history. For Hegel, then, history is the process by which *Geist* (spirit, mind, God) actualizes its original potential by becoming wholly free, self-conscious, and self-identical. Such self-conscious freedom, according to Hegel, is not abstract, but rather actualizes itself within the living modern community, which has replaced faith with reason.

According to Hegel, God requires Creation in order to become fully God, not only

Strauss)," *Studies in Social and Political Thought*, Issue 7 (September, 2002), <http://www.sussex.ac.uk/spt/1-4-6-2-7.html>. Accessed on January 16, 2008.

It is no accident that in *The Birth of Tragedy*, Nietzsche discusses Raphael's painting of Christ's Transfiguration, which subsequently appears—*mutatis mutandi*—in Nietzsche's idea of the Overman.

27. Cited by Marquart in "Luther and Theosis," *op cit.*, 186.

28. Bird, "Good to Think," *op cit.*

29. *Ibid.* Emphasis mine.

30. See Gary D. Badcock, "Hegel, Lutheranism and Contemporary Theology," *Animus* (2000, Vol. 5). <http://www2.swgc.mun.ca/animus/2000vol5/badcock5.htm>. Accessed February 26, 2008.

because Creation constitutes the Otherness needed to generate self-consciousness on God's part, but also because only through humankind can such divine self-consciousness occur. After positing an Other to itself in the form of nature, which is *Geist* extended in space, *Geist* subsequently manifests itself as conscious humankind, which then sets about to know and thus to assimilate Otherness constituted by extended nature. Material things are "petrified intelligence" extended in space, whereas consciousness is liquefied intelligence unfolding through time (history).

Estranged from the idea, nature is only the corpse of the understanding. Nature is, however, only implicitly the idea, and Schelling therefore called her a petrified intelligence, others even a frozen intelligence, but God does not remain petrified and dead, the very stones cry out and raise themselves to spirit [*Geist*].³¹

Natural science, by discerning the rational laws of nature, allows *Geist* to discover itself hidden in what at first seemed wholly Other, thereby overcoming a basic dualism. Yet, *Geist* at work in humankind must overcome other obstacles in the quest for its true identity. History is a painful dialectical process, a veritable "highway of despair," in which *Geist* attempts to discover its ultimate identity by adopting first one guise, which is then both surmounted and yet preserved (*aufgehoben*) by another guise, and so on, as exemplified in the history of art, religion, and science. For Hegel, substance becomes subject when nature becomes self-consciousness in the form of humankind. The true subject of world history is not humankind, but rather *Geist* at work in and through humankind.³² Elsewhere, Hegel writes: "Universal History is the exhibition of *Geist* in the process of working out the knowledge of that which it is potentially."³³ Nevertheless, *Geist* cannot be understood as radically transcendent, apart from the world. Instead, *Geist* emptied itself into Creation, and then undertook the immense journey required to attain absolute self-consciousness and self-identity. In a move central to defining modern political freedom, Hegel de-emphasized the transcendent aspect of God, while emphasizing divine immanence in human history.³⁴

In his compelling although controversial analysis, Robert C. Tucker uses the term "epistemological aggrandizement" to describe the virtual war in which *Geist* engages to comprehend and to control nature, thereby vanquishing the Otherness obstructing the way to unrestricted divine/human self-identity. It was *Geist*—dissatisfied, alienated, and homesick—which imparted to humankind the passionate yearning to overcome all Otherness, in order to achieve absolute freedom and self-consciousness. The human urge toward self-aggrandizement, which leads to nearly constant warfare, is an

31. G.W.F. Hegel, *The Philosophy of Nature*, trans. A.V. Miller (Oxford: Oxford University Press, 1970); cited in *Hegel: The Essential Writings*, ed. Frederick G. Weiss (New York: Harper and Row, 1974), 211. See Alison Stone, *Petrified Intelligence: Nature in Hegel's Philosophy* (Albany: SUNY Press, 2004).

32. Hegel did not devise an evolutionary view of natural history, but tended to regard only the domains of consciousness and history as capable of dialectical development. Nevertheless, by emphasizing the concept of development. They contributed significantly to the growing notion that even life itself evolved.

33. G.W.F. Hegel, *The Philosophy of History*, trans. J. Sibree (New York: Dover, 1956), 17.

34. For an illuminating treatment of this issue, see Lisabaeth During, "Hegel's Critique of Transcendence," *Man and World*, 21 (1988), 287-305.

expression of *Geist's* desire to actualize its own potential, yet humankind's potential as well. World history, then, as Tucker puts it, is the autobiography of God-in-the-making. *Geist's* recognition of its own infinite freedom, however, is simultaneously humankind's recognition of itself as *Geist*. Hence, Hegel's thought may be understood as a justification for modernity, in which humankind recognizes within itself the freedom and knowledge once associated with divinity.³⁵ Arguing that Hegel's philosophy amounts to "an *apologia* for pride," Tucker writes:

Hegel gives us a picture of a self-glorifying humanity striving compulsively, and at the end successfully, to rise to divinity. If man as knower is inspired by the Faustian urge towards omniscience, man as historical doer pursues the absolute in more mundane ways. The generic tendency of man is megalomania. Hegel clearly sees and stresses that he [man becomes its victim. The demonic force in man that leads him to reach out for the absolute and unlimited in his own person or nation is one that also divides him against himself, deprives him of happiness, and ultimately encompasses his ruin. Hence Hegel's self-deifying humanity is likewise a suffering humanity. . . . History is the 'slaughter-bench' at which the happiness of peoples is sacrificed.³⁶

Given the stakes involved in *Geist's* use of humans to achieve its own ends, Hegel maintains that ordinary morality is not binding on world-historical acts and agents. As Tucker notes, moral reflection, allegiances to formal rectitude, and indulgence in "sentimentalism" have no place in assessing the gruesome spectacle of world history, which holds a morally higher ground than personal character. In this way, according to Tucker, Hegel justifies

'those whose crimes have been turned into the means—under the direction of a superior principle [*Geist*, the Idea]—of realizing the purposes of that principle.' Of world-historical individuals obsessed with the passion for glory, [Hegel] writes that 'such men may treat other great and even sacred interests inconsiderately—a conduct which indeed subjects them to moral reprehension. But so might a figure must trample down many an innocent flower, crush to pieces many an object in its path.'³⁷

Tucker interprets Hegel's thought as both interpreting and justifying *Geist* as Will that strives after absolute power, and as arguing for "the historical beneficence of moral evil. Moreover, Hegel verges on the complete and explicit 'transvaluation of values' that Nietzsche later carried through."³⁸ For Nietzsche, of course, great individuals—pointing the way to the Overman—inevitably destroy pre-existing values and institutions, just

35. Much of post-Hegelian philosophy has been "deflationary," that is, emphasizing the limits of human understanding and thus heavily discounting the possibility that humans can attain anything like absolute knowledge. Recently, however, in his "Prolegomena to Any Future Philosophy," Mark Alan Walker has argued that re-inflated philosophical aspirations may be fulfilled by post-humans whose intelligence vastly exceeds our own. See *Journal of Evolution and Technology*, Vol. 10 (March, 2002). <http://jetpress.org/volume10/prolegomena.html> Accessed on January 23, 2008.

36. Robert C. Tucker, *Philosophy and Myth in Karl Marx* (Cambridge: Cambridge University Press, 1972). This is an extraordinarily rich and insightful work.

37. *Ibid.*, 68-69.

38. *Ibid.*, 69.

as strong new races vanquish those in decline. Nietzsche's morality of self-glorification differentiated itself sharply from resentment-activated slave morality, based on Christian selflessness. All this is food for thought in contemplating Zarathustra's proclamation, so often cited by trans- and posthumanists, that "Man is something that must be overcome."

Tucker's reading of Hegel was influenced in part by how much Hegel's thought influenced Marx, of whose thought Tucker was very critical. Marx made Hegel "walk on his head" by insisting that world history is not about the self-actualization of God, but instead the self-actualization of human potential. Hegel's thought, however, remains crucial for defining modernity as the period in which humankind transformed its understanding of itself, history, nature, and divinity in ways that promoted human freedom and self-transcendence.

Ralph Waldo Emerson, the great American transcendentalist, was influenced by the trends developed by German idealism and romanticism. Emerson, too, depicted humankind as endowed with divine capacities. No sentimentalist, he maintained in 1844 that old practices would inevitably give way before the creative spirit at work through humankind.

[Spirit] does not build up nature around us, but puts it forth through us, as the life of the tree puts forth new branches and leaves through the pores of the old. As a plant upon the earth, so a man rests upon the bosom of God; he is nourished by unfailling fountains, and draws, at his need, inexhaustible power. Who can set bounds to the possibilities of man? Once inhale the upper air, being admitted to behold the absolute natures of justice and truth, and we learn that man has access to the entire mind of the Creator, is himself the creator in the finite.³⁹

At the end of the twentieth century, a noted American scientist—Richard Seed—espoused a version of Emerson's theme: "God intended for man to become one with God. We are going to become one with God. We are going to have almost as much knowledge and almost as much power as God."⁴⁰

In the next section, we will see that trans- and posthumanism continue to draw upon the idea of human self-divinization, in a new guise.

PART THREE: THE SINGULARITY AS GOD'S SELF-ACTUALIZATION?

An updated reading of Hegel's view of world history may help to illuminate aspects of the Singularitarian/post-humanist vision of the future. The updating is needed because post-humanism: a) emphasizes much more so than did Hegel the role played by technological innovation in bringing about the post-human future; and b) posits that humankind itself will be eclipsed by beings endowed with far more God-like power and

39. Emerson, *Nature*, Chapter VII, Spirit.

40. PBS, *Morning Edition*, January 7, 1998. Cited by David F. Noble, *The Religion of Technology* [New York: Penguin, 1999], vii.

intelligence than envisioned by Hegel. Despite such differences, however, neo-Hegelian theological and eschatological themes abound in post-humanist discourse, even though many posthumanists profess to be atheists. In his influential version of the Singularity, however, Ray Kurzweil does not hesitate to represent humankind as a crucial phase in the evolutionary process that will bring forth God-like beings.

According to Kurzweil, the cosmos has brought itself to self-awareness through humankind. Eventually, humans will evolve beyond themselves by generating modes of consciousness and technology that will make possible a cosmic self-realization that has something in common with St. Paul's hope "that the Creation itself also will be set free from its slavery to corruption into the freedom of the glory of the children of God." In Kurzweil's universe story, the cosmos is not only life-friendly and even consciousness-friendly, but also God-friendly. Post-human divinity will take charge of its own destiny and "spiritualize" everything in the universe, including supposedly "dumb" matter/energy.

Posthumanists often regard humans as relay runners about to pass the baton to oncoming Others, who in turn will race toward a summit that surpasses all ordinary human understanding. Likewise, St. Paul used the metaphor of athletes training for a race to depict the rigorous practice undertaken by Christians to prepare for receiving the grace needed for salvation. Nowhere, however, did St. Paul envision humankind using its *own* intelligence either to save itself or to transform the suffering Creation into a self-conscious cosmos. Divine intervention was to make possible these extraordinary transformations. Hence, many traditional Christians regard trans- and post-humanism as dangerous and illegitimate efforts to redesign humankind, which was created in the image of God.⁴¹ Moreover, particularly in regard to Kurzweil's notion that post-humans will in effect become God (see below), traditional Christians see something quite different from what they mean by *theosis*, the transfiguration of the human being into the glorified body of the God-man Christ. Instead, the God-like post-human amounts to a creature that has become divine, and that has thereby attained the status of cosmic *Logos*. Seeking after such an astonishing "reaching up" is clearly impossible to square with orthodox Christianity.⁴²

Yet, as we noted earlier, Christianity has long been read in ways that legitimate the full development of human creative potential. Beginning with medieval thinkers such as Joachim de Fiore, theologians differentiated saving the fallen soul from renewing the fallen Creation, the latter of which might be achieved by human intelligence and inge-

41. See "Communion and Stewardship: Human Persons Created in the Image of God," International Theological Commission of the Vatican. http://www.vatican.va/roman_curia/congregations/cfaith/cti_documents/rc_con_cfaith_doc_20040723_communion-stewardship_en.html. See also C.S. Lewis's classic essay, "The Abolition of Man" (1943). <http://www.columbia.edu/cu/augustine/arch/lewis/abolition1.htm>. See also William Sims Bainbridge, "The Transhuman Heresy," *Journal of Evolution and Technology*, Vol. 14, Issue 2 (August 2005), 1-10.

<http://jetpress.org/volume14/bainbridge.html>. Accessed on January 8, 2008.

42. But see Frank Tipler, Jr., *The Physics of Immortality: Modern Cosmology, God and the Resurrection of the Dead* (New York: Anchor Books, 1995).

nunity. In modern times, Western people began speaking not of Creation, but of a disenchanting nature, which is inert, mute, and without value of its own. St. Paul, in contrast, had written that even non-human Creation “groans and suffers the pains of childbirth,” thereby suggesting that *all* creatures long to become something freer and more intelligible. The idea that the universe is the manifestation of a superior, hidden intelligence is common to pre-modern religion and philosophy.

Although seeking ever-greater understanding of and control over natural processes, many trans- and posthumanists also promote the idea that intelligence is at work in nature. As a corollary, they suggest that “control” over nature be redefined as cooperation with its creative impulses, so that they can be harnessed to save humankind from eco-calamity, to enhance humankind in extraordinary ways, and eventually to generate posthumans whose powers and aims will be far beyond our own. Many scientists now regard *information* and even *intelligence*—the cosmic code—as the most important factor in universe, more important even than matter-energy. With the full realization of the Singularity, so we are told, a glorious cosmic self-consciousness will arise. Kurzweil writes: “Once we saturate the matter and energy in the universe with intelligence, it will ‘wake up,’ be conscious, and sublimely intelligent. That’s about as close to God as I can imagine.”⁴³

In *Genesis*, we are told that God punished the people of Babel for building a tower that was to reach into Heaven. God forced people to speak different languages, rather than one language, which had allowed them to build their audacious structure. Today, one language has once again been forged: the language of science. Theists warn that humans are erecting yet another blasphemous tower, this time, the tower of post-humanity. Kurzweil responds, however, that traditional views about God need to be revisited in light of the growth of human knowledge and technical power. Instead, he maintains that the universe itself is giving rise to the beings who will ultimately transform lifeless atoms “into a vast, transcendent mind.” The ultimate goal of the Singularity (God) is for the emerging post-human civilization to engineer the universe it wants.⁴⁴

[E]volution moves toward greater complexity, greater elegance, greater knowledge, greater intelligence, greater beauty, greater creativity, greater love. And God has been called all these things, only without any limitations [...] Evolution does not achieve an infinite level, but as it explodes exponentially it certainly moves in this direction.⁴⁵

Moderns accuse Christianity and other premodern religions as being guilty of an unjustifiable anthropocentrism, but Kurzweil demurs at rejecting all versions of anthropocentrism, just as he is disinclined to forego all God-talk. At the end of *The Singularity is Near*, for instance, he quotes Stephen Jay Gould as saying that scientific revolutions dethrone “human arrogance from one pedestal after another of previous convictions

43. Kurzweil, *The Singularity is Near*, *op cit.*, 375. See also 361, 362, 364, 387, and 476.

44. *Ibid.*, 362-364.

45. *Ibid.*, 476.

about our centrality in the cosmos.”⁴⁶ Kurzweil replies:

But it turns out that we are central, after all. Our ability to create models—virtual realities—in our brains, combined with our modest-looking thumbs, has been sufficient to usher in another form of evolution: technology. That development enabled the persistence of the accelerating pace that started with biological evolution. It will continue until the entire universe is at our fingertips.⁴⁷

Hegel once wrote: “God does not remain petrified and dead, the stones cry out and raise themselves to mind.” Today, scientists would give this explanation for how the stones cry out. Billions of years after the Big Bang, stars cooked within themselves the heavy elements needed for forming planets. On one of presumably billions of planets, those elements gave rise to life by a process that is still not understood. After countless eons, sentient life arose, followed by self-conscious life. In effect, then, humans are stones that have evolved into animate and self-aware beings. Life did emerge on Earth, but the odds against life emerging *anywhere* else *again* are said to be staggering. The cosmic conditions needed for life evolve are so “finely-tuned” that the idea of cosmic purpose has come back into vogue in some circles. NASA scientists suppose that anywhere the “cosmic soup” (water, amino acids, right temperature, etc.) is in place, life will emerge. According to physicist Paul Davies, however, this supposition conflicts with the prevailing scientific view that life on Earth resulted from processes so accidental and implausible that they would never be repeated, if we rewound the clock on terrestrial evolution. According to Davies, if we were to discover life on a planet other than Earth—a planet that, unlike Mars, could not have been “seeded” by terrestrial life—this would be proof that

the laws of nature encode a hidden subtext, a cosmic imperative, which tells them: “Make life!” This is a breathtaking vision of nature, magnificent and uplifting in its majestic sweep. It would be wonderful if it were correct. But if it is, it represents a shift in the scientific world-view as profound as that initiated by Copernicus and Darwin put together.⁴⁸

Until recently most twentieth century scientists agreed with the nihilistic views of Jacques Monod and Stephen Gould, according to whom the universe is meaningless, life is accidental, and cosmic development absent. Davies and a number of other contemporary scientists, however, now conclude not only that cosmic development (from atoms to life) has occurred, but also that the universe is somehow “rigged” in favor of life and even of self-conscious life. Discovery of life elsewhere would be proof of cosmic pur-

46. *Ibid.*, 487.

47. *Ibid.* In modern cosmology, the terms “Copernican principle” and “mediocrity principle” are used to mean that there is no center to the universe, and thus nothing special about any part of it, including planet Earth, supposedly just another planet in the middle of nowhere. Recently, however, some scientists have challenged this view. See for example Guillermo Gonzalez and Jay Richards, *The Privileged Planet: How Our Place in the Cosmos is Designed for Discovery* (Chicago: Henry Regnery, 2004). See also Peter Ward and Donald Brownlee, *Rare Earth: Why Complex Life is Uncommon in the Universe* (New York: Springer, 2003).

48. Paul Davies, *The Fifth Miracle: The Search for the Origin and Meaning of Life* (New York: Simon and Schuster, 1999), 246.

positiveness: “Only if there is more to it than chance, if nature has an ingeniously built-in bias toward life and mind, would we expect to see anything like the developmental thrust that has occurred on Earth repeated on other planets.”⁴⁹

PART FOUR: CONCLUSION.

According to posthumanists such as Kurzweil, humans are in effect the organic brain that will eventually make possible the emergence of truly God-like beings. The engine of history, at work “behind the backs” of historical agents, is the imperative of the universe to make itself fully self-conscious. For Kurzweil, Hegel was right in many ways, but wrong in this respect: Alpha has not become Omega, the ultimate end has not been achieved, and *Geist* has not yet become fully self-conscious. Vast Otherness remains to be awakened by being assimilated to divine intelligence. If a profound cosmic *telos* helped to generate self-conscious humankind in the first place, that same *telos* may be animating those who today envision and call for a post-human future.

According to posthumanists, humankind cannot evolve in the ways required to reconstruct the universe, because the organic body is too frail for the task. Just as humankind has exterminated many species, quite possibly including other higher primates, in the process of achieving planetary dominance, post-humans may exterminate humankind to achieve galactic and even cosmic dominance, all in the quest for total self-consciousness of a sort that we are incapable of imagining. Impending global climate change—along with a number of other “existential” threats—may exterminate humankind, thereby destroying what may be the *only* opportunity in cosmic history for self-conscious beings to move toward the Singularity.⁵⁰ The stakes would seem to be very high indeed. Considering themselves to be serving a higher cosmic purpose, some trans- and posthumanists might feel justified in taking whatever steps are necessary to “download” consciousness into post-biological modes that can survive bio-disaster.⁵¹ Would many an innocent flower, we might ask here, have to be trampled for *Geist* to take the leap to immortal superconsciousness?

In *The Religion of Technology*, David F. Noble argues that a millennium of Christian longing to regain mastery over Creation now serves increasingly “escapist fantasies,” including trans- and post-humanism, which display contempt for the body and the human condition in general. According to Noble, technological innovation has so often failed to meet human and social needs not merely because such innovations are driven by greed and lust for power, but also and more importantly because *they do not aim not at meeting human needs at all*, despite protestations to the contrary. Instead, those innovations aim at “the loftier goal of transcending such mortal concerns altogether. In such an ideological

49. *Ibid.*, 272.

50. On the looming possibility of human extinction in the near future, see Martin Rees, *Our Final Hour: A Scientist's Warning: How Terror, Error, and Environmental Disaster Threaten Humankind's Future in This Century—On Earth and Beyond* (New York: Basic Books, 2004).

51. On the topic of uploading consciousness, see Anders Sandberg excellent on-line resource, *Uploading*, <http://www.aleph.se/Trans/Global/Uploading/>. Accessed on January 16, 2008.

context, inspired by prophets rather than by profits, the needs neither of mortals nor of the earth they inhabit are of any enduring consequence. And it is here that the religion of technology can rightly be considered a menace.”⁵² If Noble were party to our earlier discussion, he might say that whereas Hegel’s conception of the self-actualization of God in self-conscious humankind helped both to articulate and to justify the modern constitutional state, the transhumanist idea of self-actualization would seem to benefit only some people, thereby failing to provide an adequate social philosophy.

Noble would also agree with concerns raised by Haraway, Hayles, and other techno-feminists who resist the call to abandon the human body. For such feminists, trans- and posthumanists all too often display a familiar masculinist contempt for the mortal and “corruptible” body, which stands in sharp contrast to the immortal and stainless substrate of post-humankind. Likewise, many Christian theologians maintain that trans- and post-humanism is the most recent reprise of Gnosticism, which represents Creation (and thus the human body) as the corrupt Creation of an evil Deity.⁵³ David Pauls writes:

Like the earlier Gnostics, knowledge and insight are the keys to overcome the deficiencies of the physical. With the accumulation of research in genetic engineering, nanotechnology, artificial intelligence, and neural network interfacing, man will be able to overwhelm the frailty and deficiency inherent in the human condition and transform that which was weak into strength. The ability to repair, replace or enhance the various biological systems in the body allows one to overcome the limits of finitude.⁵⁴

One transhumanist replies to this critique by claiming that its author is not so much against transhumanism as he is against *modernity in general*.⁵⁵ Humans have been modifying themselves for centuries, not only by intensive spiritual practices, but also by technological means, including most recently artificial implants and genetic manipulation. In effect, humans are already well along in the process of remaking their original image, not from *contempt* for the body, but rather from the desire for a body that suffers less, lives longer, has greater vitality, and is capable of more enjoyment.

There are religious transhumanists who see no insurmountable barriers to reconciling their faith with transhumanist aims.⁵⁶ James J. Hughes writes:

52. Noble, *The Religion of Technology*, 207.

53. See David B. Hart, “The Anti-Theology of the Body,” *The New Atlantis* (Summer, 20005), <http://www.thenewatlantis.com/archive/9/hartprint.htm>

54. David Pauls, “Transhumanism: 2000 Years in the Making,” The Center for Bioethics and Culture Network. http://www.thecbc.org/redesigned/research_display.php?id=189. Accessed on January 8, 2008.

55. Maahaadave, “Transhumanism and Gnosticism: The Antithesis of Christianity?” Posted on the World Transhumanist Association website. <http://www.transhumanism.org/index.php/th/print/655/> Accessed on January 8, 2008.

56. See the Mormon Transhumanist Association website at: <http://transfigurism.org/community/content/FAQ.aspx>. Accessed on January 8, 2008. In certain respects, Mormon theology—more so than mainstream Christian theology—lends itself to reconciliation with important aspects of transhumanism, although perhaps not with post-humanism.

As transhuman possibilities increasingly develop, the compatibilities of metaphysics, theodicy, soteriology and eschatology between the transhumanist and religious worldviews will be built upon to create new “trans-spiritualities.” In this future religious landscape there will be bioconservative and transhumanist wings within all the world’s faiths.... We will create new religious rituals and meanings around biotechnological and cybernetic capacities, just as we did around fire, the wheel, healing plants and the book.⁵⁷

In his famous essay, “The Future Doesn’t Need Us,” however, Bill Joy—co-founder and chief scientist of Sun Microsystems—emphasizes the potentially devastating consequences of emerging technologies, including robots that may regard humans as little better than vermin.⁵⁸ Given that the aims of post-Singularity beings would be well beyond our ken, why should we assume either that they would be benevolently inclined toward us, or interested in the kinds of things that Kurzweil speculates that they would be? Joy’s friend, Ray Kurzweil, is much more optimistic that post-humans will grow not only in intelligence and power, but in aesthetic and moral capacity as well. Arguably, however, there is no *necessary* correlation between cognitive and moral development.⁵⁹ Frequently cited examples of such lack of coordination were the German doctors who conducted gruesome scientific experiments on Jews and other people enslaved by the Nazi regime. National Socialism helped to develop and justify its murderous policies by appealing to eugenics U.S. research, which some Americans had used to justify sterilization of the mentally “feeble” and otherwise unfit members of society.

Critics who regard transhumanism as the latest reprise of eugenics cite as evidence how frequently transhumanists cite the proclamation of Nietzsche’s Zarathustra, that

57. James J. Hughes, “The Compatibility of Religious and Transhumanist Views of Metaphysics, Suffering, Virtue and Transcendence in an Enhanced Future,” Institute for Ethics and Emerging Technologies (2007). ieet.org/archive/20070326-Hughes-ASU-H+Religion.pdf. Accessed on January 8, 2008. See also Gregory Jordan, “Apologia for Transhumanist Religion,” *Journal of Evolution and Technology*, Vol. 15, Issue 1 (February, 2006), 55-72. <http://jetpress.org/volume15/jordan2.html> See also Heidi Campbell and Mark Walker, “Religion and Transhumanism: Introducing a Conversation,” in the special issue of *Journal of Evolution and Technology* devoted to this topic, Vol. 14, No. 2 (April, 2005), <http://jetpress.org/volume14/specialissueintro.html>. Accessed on January 18, 2008.

58. Bill Joy, “Why the Future Doesn’t Need Us,” *Wired*, issue 8.04 (April, 2000), <http://www.wired.com/wired/archive/8.04/joy.html>. Accessed on January 14, 2008. For a critique, see John Seely Brown and Paul Duguid, “A Response to Bill Joy and the Doom-and-Gloom Technofuturists,” www.aaas.org/spp/rd/ch4.pdf. Accessed on January 14, 2008.

59. I have not yet read a transhumanist discussion of what many spiritual traditions describe as “heart-opening,” the stage that must be achieved in order to generate enduring compassion. The heart-opening stage lies beyond the mental-egoic stage, which is concerned primarily about using intelligence to promote survival and power. If such an opening is related to and even dependent on *organic* human embodiment, then such an opening could not occur in post-humans, unless such beings were designed (or designed themselves) in ways that allowed for an analogous opening in bodies made of silicon (or whatever the preferable substrate turns out to be). If discourse about heart-opening and other such spiritual developments does not enter into contemporary discourse about trans- and post-humanism, however, there is little reason to expect that “enhanced” beings will seek anything but finding new ways of using intelligence to attain greater power. This is the surmise of those who write dystopian literature and screenplays, such as *The Terminator*.

that “man” is something that must be overcome. Nietzsche’s own discourses on racial breeding, as well as his idea of the Overman, made aspects of his work appealing to Nazi visions of a “master race”, even though Nietzsche himself might have disagreed with Nazi ideology, had he lived long enough to confront it. Transhumanists insist, however, that their goals are very different from government-sponsored eugenics, which wrongly sought to impose—without consent—major genetic changes on whole populations. As libertarians, transhumanists call for private, non-governmental, voluntary enhancements of individuals.⁶⁰ Despite such emphasis on individual enhancement, however, critics envision the likely return of a more collectivist eugenics program, which justifies questionable practices because they serve a higher goal than individual well-being.

A final criticism, one that we can merely mention here, would come from those who believe that speculation about post-Singularity demi-gods “awakening” the entire universe has ignored the Second Law of Thermodynamics. Stanley N. Salthe, for instance, has argued vigorously that the universe is striving to return itself to equilibrium after the Big Bang, which—because of the velocity attained by the matter-energy blown apart—generated gravity, galaxies, planets, and even living beings that are very far from equilibrium. Instead of positing that a kind of supreme cosmic Intelligence has been at work since the Big Bang (Alpha) to bring about the cosmic culmination of such Intelligence (Omega), Salthe argues that the “final cause” of the activity of our universe is to bring things to a state of entropy or equilibrium. Instead of evolution being the way in which cosmic Intelligence attains its hidden and unimaginably grand ambitions, “Evolution... is the Universe’s devious route to its own negation.”⁶¹ In a later essay, I plan on examining in greater detail the implications of Salthe’s work for the re-emerging field of “natural philosophy.”

I close with a few questions: Many centuries from now, will intelligent beings look back upon human history as an episode in the biography of cosmic *Geist*? If so, what means are justifiable in pursuit of this extraordinary end? Because people have so often committed terrible atrocities when convinced that they were carrying out God’s will, should we not keep in mind the possibility that trans- and posthumanists are themselves deluded in what is behind their visions for the future? Does the drive to leave behind mortal flesh divert human energy that might otherwise go to restoring the life- and human-friendly features of a planet that has been ravaged by the very science and industry

60. Philosopher Robert Berman suggests that Hegel’s distinction between civil society and the state is important here. Civil society refers to the private domain in which individuals engage in economic exchange, and contend with one another for status, influence, and other kinds of power. Given that both National Socialism and Soviet Marxism called for the subordination of private interests to those of the state, these regimes attempted either to eliminate civil society or else to drastically curtail its independence. It is not surprising that in liberal democracy, a new “eugenics” would emphasize the development of *individuals* outside the context of the state and its aims. Robert Berman, personal communication.

61. Stanley N. Salthe, “The Spontaneous Origin of New Levels in a Scalar Hierarchy,” *Entropy*, 2004, 6, 327-343. See also Salthe and Fuhrman, “The Cosmic Bellows: The Big Bang and the Second Law,” *Cosmos and History: The Journal of Natural and Social Philosophy*, Vol. I, No. 2 (2005), 295-318. For many other insightful essays, consult Salthe’s website: <http://www.nbi.dk/~natphil/salthe/>

that unwittingly paved the way for trans- and posthumanists? Ought there be international forums in which these portentous questions can receive serious and lengthy hearings? Or will technological innovations develop so rapidly that little time will remain for inquiry into the potential implications of trans- and posthumanism? Will the future envelop us before we even have the chance to think whether we ought to embrace it? Or will environmental problems bring about a grimmer future, one that precludes the possibilities—both grand and terrifying—that we have been discussing here?

Michael E. Zimmerman
Department of Philosophy
University of Colorado at Boulder
michaelz@colorado.edu