



The New Hot Topic

Transhumanism is in the news...the faith/science news, that is. For folks who study CRISPR, being able to replace select genes on chromosomes, and encourage the use of mind-altering drugs, the question becomes “Should we do it? Why? Why not? And who is guiding *when* and *how*?” The usual meaning of transhumanism refers to a medical or technological alteration of the human being, the “trans” meaning a visioned *improvement* of the present state of the human being.

Many writers have concluded that technology or science cannot alter the character of the person, as you will read in some of the reviews in this issue of the *ITEST Bulletin*. Others, such as theologian Ted Peters, will push the discussion in the wider direction of *theosis*, or the *spiritual* advancement of the person. Most importantly, some are suggesting that the scientific/technological future of these proposed advancements come under the wise watchful eyes of a group that sets forth principles and guidelines for the medical and technological communities.

Keep this in mind as you read what is offered in this issue. But I suggest you note something else. My concern takes a little different turn. I propose that we cannot propose sound guidelines until we revisit and agree upon a holistic view of the human person. We are not just talking about the physical human component. The human being is a psycho-somatic and psycho-spiritual composite. Each of those components has empirical functions. Those functions can be named and experienced.

The physical organism and its functions are best known to us: there are the digestive, respiratory, circulatory systems. We know when they are out of kilter because we become physically ill. The human psyche is another matter. The science of psychology and the medical area of psychiatry are rather new among disciplines, but they have empirical functions which we are learning to name and heal. We can now identify mental (sic) illness which really is concerned with emotional scarring. We are learning how powerful guided imagery can be to influence physical function.

But the spiritual functions of the human being are barely addressed. We have long confused these empirical functions with “religion” and so avoid dealing with their reality. The result is that the understanding of our humanness is hopelessly fragmented. The functions of the human spirit are the functions of the *intentionality* of a *self-reflexive human consciousness*, and these functions can be empirically experienced, charted, and evaluated. Intentionality empirically experienced, observed, and reported in the human consciousness is 1.) Attending to data; 2.) Understanding the meaning of that data through questioning; 3.) Reasonably judging the correctness of that understanding by a judgment of fact; 4.) Responsibly evaluating, deciding, and acting on that judgment. (See Bernard Lonergan, S.J., *Method in Theology*, Chapter One.) These are transcendent functions. They deal with realities that do not succumb to microscope or telescope.

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The New Hot Topic - Continued

Yes, and you have guessed it: these spiritual functions deal with *scientific* hunches as well as *religious* data from the world's religious traditions. No longer can we use religion as an excuse for avoiding a thorough understanding of the full transcendent functions of the human being. It is time to name those empirical functions, claim them as authentically human, critique their irresponsible use, and identify the power that cognitive and volitional powers have in the forward progress of human culture.

In the quest to deal responsibly with the possibilities offered the human family in transhumanism, we need to consider the total human being, not merely its physicality. We need critical thinkers who refuse to be imprisoned in only one dimension of human reality. The operating principles and guidance we need must address the total human being. We challenge our readers to keep this in mind as we explore this exciting new area. Hopefully, you will find an honest attempt at this critical probing in the exploration of the writers in this Issue. Evolution will continue to move forward, drawn into the future, we believe, by the mystery of a divine plan. Our role is to answer a call for sensitive compassion and responsible hope to take its place behind the wheel moving us into this future.

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Announcements

Transhumanism in 2020

We decided to devote this issue to the topic of Transhumanism since that is the topic the ITEST Board has chosen for our 2020 fall conference. Sister Carla Mae Streeter, OP, in delivering the opening message, notes that "Transhumanism is in the news." She then goes on to preview the essays in the issue, alerting us to the wide range of understanding of the topic Transhumanism. Is there a Christian Humanism? What is Transhumanism? Should we be concerned? She further notes, "...we cannot propose sound guidelines until we revisit and agree upon a holistic view of the human person." Read more on page one.

Our New ITEST Web Site

For those who may have missed our recent message announcing the launching our "new and improved" web site, we invite you to click on the link www.faiithscience.org and enjoy the new landscape of ITEST. You will be amazed. It is inviting, easy to use, interactive, colorful, and designed to encourage your curiosity with the icons on the home page. Also on that page, is the Go Fund Me link showing how much we have raised and how much

we need to reach our goal of \$5,000. Please donate, even the widow's (or widower's) mite? We thank those who have already responded so generously. It is not too late; every penny will be used wisely to advance the faith/science ministry in its 51st year at ITEST.

Good News from WCAT Radio

Sebastian Mahfood, ITEST Treasurer and Social Media manager, announced recently the debut of a link www.wcatradio.com/faiithscience/ to the latest WCAT internet Radio show "Faith & Science in Catholic Schools." This site will introduce a new series of interviews with high school science and theology teachers speaking about how they incorporate the notion of science and faith compatibility into their teaching. This series should spread through the St. Louis Archdiocese and beyond since WCAT has listeners across the country. Dr. Mahfood notes, "It's possible as well that we'll end up with presentations from non-Catholic Christians over time, but the main thrust of our efforts will be to focus on the Catholic school teachers in these interviews." ITEST highly recommends the premiere interview with Biology teacher, Mariette Baxendale at DeSmet Jesuit High School in St. Louis. Mariette is one of our Star Teacher members at ITEST.



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“Introducing Transhumanism”

At the ITEST conference of 2012, dealing with “Early Life Issues,” Fr. Ron Mercier, SJ, in an oral presentation examined the signs leading to the possible transformation of humanity. Presented here in synopsis form by Dr. Thomas Sheahan is the summary of the longer essay published in the proceedings of the conference.

Evolution in a New Frame?

by Ronald A. Mercier, S.J., St. Louis University

That paper dealt with the topic of Transhumanism. Mercier reviewed a variety of contemporary expressions of what Transhumanism means, and cited the work of many authors about how and why it should be pursued. There were 35 references cited. Mercier’s entire paper is archived on the ITEST website at ITEST Bulletin Vol. 44 - #1 (winter 2013). That paper is worth re-reading in its entirety, because it contains so much valuable background about Transhumanism. However, space limitations here allow only a synopsis of Mercier’s major points.

As will be clear from several of the book reviews in this issue, there is a school-of-thought about Transhumanism which is entirely devoid of any religious thought, placing man’s future entirely in the hands of mankind. It’s no surprise that the Christian perspective is quite different. Mercier quotes from several of those secular (or atheist) authors, and points out some necessary limitations to their one-sided enthusiasm. He writes:

“My concern, however, focuses on a two-fold heuristic structure which shapes much of the discussion and which represents an odd – and partial – appropriation of traditional Christian perspectives. The difference between the two visions, however, puts into sharp relief the very possibility of setting limits to contemporary experimentation.⁶ Boldly put, the understanding of evolution within this school of thought not only makes possible but necessitates the transhumanist embrace of any and all means of ‘human enhancement.’ I will put that assumption in dialogue with the work of Teilhard de Chardin for a very different conception of how and to what extent humans should proceed down the path of ‘enhancement’.”

Mercier goes on to establish the contrast between the humanist position and his:

“Put bluntly, the course of evolution has consistently progressed along the path of reason; while they would deny that evolution in itself has any directing force, notably given the strong atheism usually linked to this position, the wonder of the moment lies in the fact that evolution has reached the transition point from random development to a focused and directed future, one placed in human, rational hands. Rationality itself provides the transition point.”

Continuing to describe others’ ideas:

“We see the age of ‘natural evolution’ passing away, and with it, necessarily, the age of ‘Homo sapiens’ having a particular and peculiarly determinative status. Practical reason (*techne* as Heidegger might put it), becomes the fruit of evolution and the departure point for the future.”

“With it comes, though, the end of humanity as the pyramid of sentient, rational and creative being on earth, if not in the universe; the phase of human horizontal transcendence, toward the trans- and post-human begins with a powerful moral duty attendant upon it. In theological terms, this ‘eschatology’, like most, exerts a strong and in this case categorical imperative, even in a consequential analysis.”

Were this merely a nice exercise of philosophical speculation, one could view it rather benignly; after all, as Sparrow and others note, it is merely the latest form of the eugenic dimension. Yet, the link to a technological determinism demands attention; we must act upon this vision, and such a demand provides a theoretical foundation for the ‘freedom of technology to pursue its ends’. When linked to the economic dynamic which accompanies the power of technology, one faces an extraordinary inertia toward use of all the technologies at our disposal.¹⁵

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Mercier states where he intends to go:

“This paper will argue that the two fundamental assertions upon which transhumanism builds find notable and important alternative visions within the tradition, especially as it develops responses to a wide range of issues within the contemporary technological context.¹⁶ First, using the work of Teilhard, notably as developed by others ... Second, it will use the recent works of Benedict XVI, building on a long tradition, to question the understanding of the distinctiveness of the ‘human moment’ in evolution as presented, ‘judgment sensitive attitudes’ or ‘practical rationality’. This alternative vision would ask for a significantly different understanding of our relationship to the human being and to the evolving world as a whole.”

Again, space limitations force a tight condensation:

“Teilhard’s vision represented a first attempt to reconcile the realities of Christian faith with the emerging scientific perception of the world, notably as captured by evolutionary theory and the parallel developments within genetics.¹⁷ Far from setting himself in opposition to these movements, however, he saw them as compatible with Christian faith ...”

“For Teilhard, the lack of discourse between science and metaphysics leads precisely to the emphasis on a kind of randomness to the world which seems to underlie the evolutionary vision of transhumanism. His vision does not arise, however, simply from the application of some kind of imposition of a religious vision or philosophical metaphysic, but rather from pursuing the metaphysical questions which arise for him in the very relationship between reason and evolution.”

“Teilhard notes ‘a single pattern [that] runs through the whole of the universe, and that the dominant orientation of this pattern is toward [the human person].’¹⁹ ... this vision arises from an affirmation of the radical presence of God in the world, not simply as a ‘prime mover’ or a ‘final end’ but rather as a continually dynamic principle of unity.²⁰ One does not have mere ‘materiality’ and randomness on the one hand and a realm of ‘the spirit’ on the other, but a more dramatic interweaving of the two with important consequences.”

Mercier goes on to describe several of Teilhard’s ideas pertaining to the increase of consciousness and complexity. Then he continues

“Granted, Teilhard’s vision goes far beyond this. He has a clear teleological aim, with all of creation ultimately moving toward the Omega Point in the Christ whose Spirit is the motivating force behind all creation. That Christological dimension remains the foundation of the whole structure, but not in a way which prevents his vision of a single, purposive dynamic to evolution from engaging science or raising significant questions. At the same time, the way in which his theory challenges the Second Law of Thermodynamics has prompted a certain skepticism among scientific readers as well as a concern among many Christians scholars about the overly optimistic vision of the Omega Point as distinct from the Reign of God.²⁵

“If the human person does constitute an important advance within evolution, a self-conscious, ethically reflective presence, concern for the good of the whole, not simply a radical dominance over nature and the humanity, becomes the normative ethical principle.”

Mercier then turns his attention to the writings of Pope Benedict XVI:

“That touches on one part of the equation, of course, yet leaves aside the second dimension, namely the separation of the human from the rest of the cosmos. Still, the second aspect of the vision deserves some consideration, namely the vision of the human within transhumanism, the focus on whether ‘practical reason’ provides the distinctive, even if not sufficient leap into ‘the human’, and the springboard for the next evolutionary movement. In his reflection upon human social, economic and technological life, Benedict XVI engages the tradition in a new and distinctive way using the ‘logic of the gift’.”

“He speaks of the logic of development within the contemporary world, one that echoes the principal themes of transhumanism, the sense of oneness with the dynamism of technology as an extension of practical reason, the new era in evolution. For him, Paul VI’s warning deserves close attention.

Paul VI had already warned against the technocratic

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ideology so prevalent today, fully aware of the great danger of entrusting the entire process of development to technology alone, because in that way it would lack direction. Technology, viewed in itself, is ambivalent.²⁸

“The question of the appropriate use of technology occupies central place within this reflection.”... Echoing much of Teilhard’s work, Benedict XVI turns the perspective dominant in contemporary life on its head, and with it the need for human re-tooling as distinct from humane transformation.³⁰

Very much along the lines of Teilhard’s thought, the fullness of human life and in some ways the trajectory of the human lie not in the ability to achieve mastery, which assumes a ‘master perspective’, so much as in a foundational sense of engagement with the other and ultimately with all of nature.³²

“While the reality of evolution may well tend toward significant adaptations of the human within nature, still one finds a foundational call to value and safeguard the human person and species. This would produce a nonconsequential ethical model, and with it limits to the ‘progress’ one would wish to make.

“*Dignitatis personae* does set stringent limits on the use of genetic technologies.³³ With respect to somatic cell gene therapy for disease, for example, it opens the door to significant experimentation, provided that sufficient safeguards are met and that no illicit means are used (cloning ...). Similarly even for germline therapy, while one finds a much higher degree of caution involved, a foundationally similar principle emerges, namely one placed at the service of the person and the human community in terms of the progeny of the person. Given the risks, one would have to meet a far higher threshold.³⁴

Having blended together the notions of Teilhard with Benedict XVI, Mercier concludes:

“When one crosses the line to the ‘trans-’ or ‘post-human’, however, two barriers arise. The first, already mentioned, pertains to the stance one adopts to the human, i.e. one of mastery not service. The second, of equal importance, touches upon the foundational sense of justice, ... given the costs of such ‘enhancement therapies’, injustices already existing within the human community would multiply and

find genetic validation.³⁵

“We began this journey with two perspectives which seemed to authorize a massive project of re-engineering the human, first a sense of the ‘end of random evolution’ and second the call to ‘take charge of our genome’ to transcend the human as we know it. Yet, on both sides, this exploration asks about the necessity of such visions. Rather than the ‘end of evolution’, much of the Christian tradition (and certainly Teilhard), sees the human as deeply embedded in a rich evolution ordered toward complexity and consciousness. We find ourselves placed *with* rather than *beyond* the mystery of evolution. Similarly, far from the critical perspective rooted in a vision of evolution having found its apex in ‘practical reason’, a variety of other positions ask about the relationality of humans, the mode of compassion, as foundational to what marks such an apex and frame for the future.”

This outlook set forth by Fr. Ron Mercier provides us with a guidepost as we examine a variety of others works on the topic of Transhumanism.

See below associated “endnotes” from Mercier’s paper; original numbers retained for clarity.

- 6 As DeMarco notes, of course, the work of Karl Rahner in “Experiment: Man” raises similar issues, though from a different context and exploring the range of possibilities within a Catholic perspective, a point to which we will return.
- 15 Cf. C. Ben Mitchell, Edmund D. Pellegrino, Jean Bethke Elshtain, John F. Kilner, and Scott B. Rae, *Biotechnology and the Human Good* (Washington, D.C.: Georgetown University Press, 2007), 17- 21, for a sense of the intense pressure inherent in a ‘Second Creation’ narrative which grants significant power to technology virtually as an end in itself.
- 16 John Haight, *God and the New Atheism: A Critical Response to Dawkins, Harris and Hitchens* (Louisville: Westminster-John Knox Press, 2008) raises important issues about the limited epistemological vision inherent in this position and seeks to develop a dialogue between faith and science which would honor the distinctive qualities of both. Cf. also his *Making Sense of Evolution: Darwin, God, and the Drama of Life* (Louisville: Westminster John Knox Press, 2010) in which he again deliberately avoids an either/or position on evolution, seeking God in and through evolution. His perspective informs much of my own quest. Cf also Stephen Pope, *Human Evolution and Christian Ethics* (Cambridge: Cambridge University Press, 2007), notably his chapter 4, ‘Faith, Creation, and Evolution’, pp. 76-

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- 110, for an excellent discussion of evolution and its relationship to the action of God in the world.
- 17 John Haught, "Science and Scientism: The Importance of a Distinction," *Zygon* 40 (2005), 363-368 strongly urges a distinction between 'the concept of science' and 'scientism, materialism, reductionism, secularism, and techno-secularism'. (364) Like Teilhard, Haught would emphasize that science per se stands open to other fields of human knowing; only a deliberate rejection of elements of human experience leads to the second set of perspectives.
- 19 Mooney, 41.
- 20 Henri de Lubac, Teilhard de Chardin: The Man and His Meaning, trans. René Hague (N.Y.: Hawthorn Books, 1965), 156-157
- 25 Cf. Paul H. Carr, "A Theology for Evolution: Haught, Teilhard, and Tillich," *Zygon* 40 (2005), 733- 738. Of particular concern to Tillich was the relative lack of place within Teilhard for the 'entropy' entailed in human sin. The redemptive work of Christ seemed underplayed relatively, a concern for the broader tradition and one which was involved in the earlier silencing imposed upon Teilhard. This article replied to an earlier critique of the work of Tillich by John Haught, "In Search of a God for Evolution: Paul Tillich and Pierre Teilhard de Chardin," *Zygon*, 37 (2002), 539-553. Haught called for a 'revolution in understanding of the real' in order to engage contemporary evolutionary thought
- 28 Benedict XVI, *Caritas in veritate* (June 29, 2009), no. 14, citing *Populorum progressio*, 34.
- 30 Note the parallel challenges to economic orthodoxy in Pontifical Council for Justice and Peace, *Towards Reforming the International Financial and Monetary Systems in the Context of Global Public Authority*
- 32 Cf. the concern in *Dignitatis personae* about 'an unjust domination of man over man' (27). Congregation for the Doctrine of the Faith, *Instruction Dignitatis personae: On Certain Bioethical Questions* (Sept. 8, 2009) [hereafter DV].
- 33 Karl Rahner's "Experiment: Man: Theological Observations on Man's Self-Manipulation" would certainly pose different, more open, horizons, but even he subsequently reconsidered significant elements of this vision. Cf. *Theological Investigations, IX: Writings of 1965-1967*. (N.Y.: Herder & Herder, 1972), 205-2224. Also note his "The Problem of Genetic Manipulation," in *Theological Investigations, IX*, 225-252.
- 34 DP, 26.
- 35 DP, 27. A parallel concern arises within CV, namely how one uses the limited resources available to a human community. While the development of science and technology no doubt represents a good, the needs of vulnerable populations also exercise a claim upon us. In a world of limited possibilities, whose interests take center stage? For CV the primacy of the claim of the marginalized upon resources represents a duty far more powerful than some 'potential new race'.

Transhumanism and Transcendence: Christian Hope in an Age of Technological Enhancement

by. Ronald Cole-Turner

(Washington, D.C.: Georgetown University Press, 2011), 219pp.

Transhumanism and Transcendence is a collection of thirteen articles from a variety of Christian perspectives—evangelical, reformed, catholic. They are focused on various aspects of what is known as "transhumanism," which is to say that movement which espouses the technological enhancement of human beings even to the point of speaking of the evolution of a new species of humanity. A distinction needs to be made between the therapeutic use of technology and a use of technology that is primarily aimed at human enhancement. The therapeutic use includes prosthetic limbs, metal plates in skulls, artificial hearts—which already go very far in the direction of creating "cyborgs." It also includes the use of drugs to channel moods, to

fight disease, to encourage healing. We are at the cusp of genetic engineering to correct distortions in our genetic code. Enhancement seeks to go beyond simply restoring someone to "normal health." It is aimed at creating greater intelligence, greater endurance, enhanced senses, and so forth. It is aimed at enabling humanity to "transcend" the normal limits imposed by current bodily existence, at pushing death off even indefinitely achieving a kind of immortality.

The contributors are generally positive with regard to many of the goals of transhumanism. Michael S. Burdett, for instance, sets out Francis Bacon, N. F. Fedorov, and Pierre Teilhard de Chardin as examples from Chris-

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tian tradition who incorporate technology within their visions of a future humanity. David Grumett further explores the thought of Teilhard in this regard. Stephen Garner attempts, not completely successfully in my view, to understand the union of the human with technology (the cybernetic organism) using various Christians symbols which exemplify “hybridity,” “an inseparable connection between the self and other.” These include the Trinity, the Incarnation, and eschatology. There is a certain point to this but also limitations. The Trinitarian “hybridity” is finally between Persons, not between a person and a thing; the union of the Son with human flesh did not “enhance” the Son—it rather enhanced the humanity that was embraced. More interesting, perhaps, is his “eschatological hybridity,” the tension between the old creation and the new creation in Christ and his notion that being created in the image of God requires us to take responsibility for our ongoing creation.

Some of the contributors do sound warnings. Ted Peters, for instance, thinks that the optimism of transhumanists needs to be leavened with a healthy dose of a realization “of the human propensity for using neutral or even good things for selfish purposes, which results in chaos and suffering.” Celia Deane-Drummond’s critique is that transhumanism by “attempting to control particular contingent problems of the human condition, it inadvertently commits an error that is ancient in its roots: attempting to find succor by distancing the human from its material, creaturely, animal origins.” This can be taken to the extent of an eradication of the distinction between the sexes with artificial wombs and a tailoring of one’s “gender” to one’s personal preferences as J. Jeanine Thweatt-Bates makes clear. Michael L. Spezio cites Tony Tether, a long term director of DARPA, who said, “Imagine a warrior with the intellect of a human and the immortality of a machine.” Part of this involves weakening “the memory of horrendous acts.” The therapeutic point of such a project is dealing with PTSD but the vision includes allowing “computer chips embedded in the human brain to directly alter directly [sic] the information processing in neural tissue.” Such “enhancements” “would likely render them unable to respond relationally and thus effectively to injuries sustained by fellow war fighters, not to mention their inability to deal adequately with civilian life.”

At root there is a fundamental distinction between a Christian understanding of transcendence and a transhumanist one.

At root there is a fundamental distinction between a Christian understanding of transcendence and a transhumanist one. As Gerald McKenny puts it, Christians place human fulfillment in an external transcendence, one that is apt for human nature but which humans are unable to achieve apart from the gracious action of God; human transcendence, for the Christian, consists in communication with God. For the transhumanist it is an enhanced material state which humanity is able to achieve through its own technological development.

The essays are insightful and provide a wide spectrum of the relevant issues. It is not exhaustive in this regard. One issue I did not see much treatment of, for instance, was the transhumanist understanding of the human person. Some of the schemes for individual immortality, for instance, presume that one can upload the contents of a brain onto a computer (clearly one more advanced than currently available) and preserve its functioning indefinitely.

Is human personhood thus reducible to 1's and 0's or is something lost in the process?

Is human personhood thus reducible to 1's and 0's or is something lost in the process? Will AIs achieve consciousness and thereby become “persons” with all the rights and dignity of human persons? Popular science fiction has already answered this question positively with such characters as Star Trek’s Data or Star Wars’ CP30. Even granting that our consciousness is significantly, if perhaps not completely, brain-based is there “something” which cannot be reduced to biological-mechanical (i.e. purely material) processes? Curiously a recent movie from a Japanese provenance answers this latter question positively—Ghost in the Shell. In any event, this is an interesting collection of articles even if much more could be written.

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Visions of Technological Transcendence

James A. Herrick, Parlor Press: 2017 ISBN 978-1-60235-875-1

Reviewed by Thomas P. Sheahan

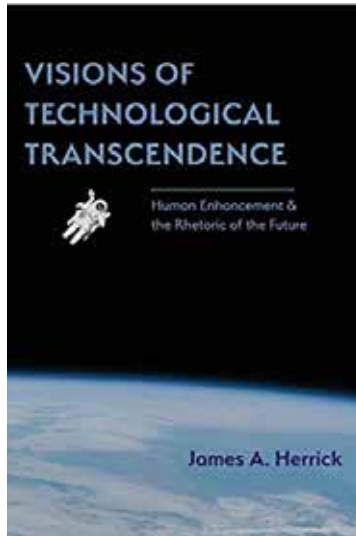
The theme of this book is to present “myths” about mankind’s future, where “myth” means imaginings-made-plausible. Herrick does not try to present a full definitive picture, but instead presents ideas about what *might* take place. The book is primarily an exposition of speculations that *might* come true in the far distant future. Throughout the book, the role of myth is paramount; myth has a “symbolic function.” That mind-set is an indispensable requirement for finding merit in this book.

The book is written totally from a humanist point of view, one in which there is no role for God, and the only “gods” are what humans develop themselves into. Consequently, the term “transcendence” in the title is a misnomer, because nothing bears upon the “transcendence” familiar to Christianity, whereby God extends far beyond humans. By contrast, everything Herrick writes about remains entirely within the human realm. Of course, he envisions a very advanced human in the future, but no interaction with God as we perceive Him. The big problem is that these speculative ideas are *not* particularly plausible to those who don’t share the humanist pre-suppositions.

Herrick does not hide that agenda – it’s right there in the introduction. The “human enhancement movement” is presented, based entirely upon the possibility of further developing the human brain. “The mind is what brains do.” There is a finite coterie of futurists that Herrick cites again and again; all adhere to an entirely humanistic stance.

The book emphasizes “a scientifically-based belief system” and “emergence of a powerful new technological religion.” Clearly, this is quite far from traditional Christianity. In one sentence, Herrick mentions Teilhard’s term the *Cosmic Christ*, but that’s merely a buzzword; he shows no evidence of understanding Teilhard’s meaning or intent.

In the early 20th century, Julian Huxley wrote about “directed evolution”, which means humans taking charge of their *own* evolution in the future. Moving to the present day, the new technologies of Crispr & Cas are mentioned as a



possible avenue of advancement within the “plausible imaginings” that set the tone of the book

Postponing death is a central topic of the book. Several chapters are oriented toward the topic of evading death entirely. You can “live forever” if you can upload everything in your brain to a supercomputer. In one chapter heading, he quotes St. Paul’s line “O death, where is your sting?” but Herrick doesn’t realize that St. Paul was fully okay with physical death, and St. Paul was committed to the transcendent state of unity with God.

In the chapter on space travel, there is mention of the vastness of space, and space colonies are seen as “sanctuaries” where humans can live without earth as a base. However, there is no mention of the interchangeability of space and time. Nor is there discussion of space travel at nearly the speed of light, which is widely regarded as the only way to visit distant stars.

Herrick’s book is written entirely within a framework of the supremacy of time. The concept that time might be other-than-absolute and one-dimensional, always moving forward, does not occur to Herrick or the people he quotes. Hence his urgent focus on evading or outrunning time. Like nearly all atheists, Herrick disbelieves in a god who is subject to the constraints of time. But he has no substitute, instead preferring to focus entirely on possible future human development.

Usually at the back of a chapter, there is discussion of objections to the main thesis put forth. In one of these there is mention of Wesley J. Smith, a Christian writer who has often written for conservative publications. But that section is much too short to have any influence on the main theme of the book. The book contains brief mention of “Christian transhuman” and “Mormon transhuman” activities, but those brief mentions don’t go anywhere.

Summarizing: this book certainly does not speak at all to the reader with a Judeo-Christian picture of God. Myths stemming from humanistic imagination have a limited appeal.

Metal and Flesh, The Evolution of Man: Technology Takes Over

By Ollivier Dyens. Translated by Evan J. Bibbee and Ollivier Dyens. M.I.T., 2001.

Review by Ralph Olliges

The inhabitants of our planet are just as cultural as they are organic. The book is a compilation of observations on the emergence of a cultural biology. It includes the technologically induced transformation of our perception of the world and the emergence of cultural biology. Living things rely on one another for existence. We have an entangled evolutionary path.

Why do humans think? Humans are fine with multiple machines around themselves. However, when a machine begins to flex its connectors and begins to think, the machine challenges our intellectual superiority. We become jealous of the machine. We tend to guard our minds and our superiority.

The author cites H.G. Wells' *The Island of Dr. Moreau* in his text. Moreau is more interested in altering the world around a human being than in modifying human beings. Think about how technology has changed from 1896 when Wells wrote his novella to the present day.

Throughout this book, virus-like behaviors are emphasized. The two most fundamental dynamics are infection and contamination. "For example, while a biological virus influences the genetic evolution of an individual, an ideological virus redirects his cognitive structure..." (p. 89). The author believes that human beings will inevitably end. They are not becoming cyborgs, but rather plastic



in their forms and existence. Many ethical dilemmas exist. What does it mean to be human? Is there an end to being human? The author believes that human beings are undergoing a metamorphosis.

In the 1970s several television shows were created based upon science fiction ideas. From 1973-1978, a popular television show, *The Six Million Dollar Man*, aired. The main character had bionic implants. A spin-off, *The Bionic Woman* aired from 1976-1978, in which a woman had bionic implants as well.

Technology is omnipresent. Just examine how our homes have changed over the years. We have made room for more technology which is supposed to make our lives easier or more enjoyable. While this book was published in 2001, think about how in recent times, 3d-printers have created limbs for people so that they now have arms and legs. Maybe the science fiction writers were just a little ahead of their time. Where will we be in another fifteen or twenty years?

Just a few comments. The book is at a very high philosophical level. It is not meant for the average lay person necessarily to read. Also, the book was published in 2001, so the material is some 20 years old. While the points made are still useful, in terms of technological advances it is somewhat dated.

Yuval Noah Harari is an avowed atheist who claims in his best seller, *Sapiens*, that by the end of the 21st century the human will not in any way resemble the human of today. See how his views clash with those of Jewish believer, Dr. Jay Lombard, on the meaning of the transcendent human being. We quote portions of the NY Times review of his second book, also a best seller, *Homo Deus: A Brief History of Tomorrow*.

"...[Harari] returns with an equally original compelling and provocative book, turning his focus toward humanity's future and our quest to upgrade humans into gods.

"What then will replace famine, plagues and war at the top of the human agenda? As the self-made gods of planet earth, what destinies will we set ourselves, and which quests will we undertake? *Homo Deus* explores the projects, dreams and nightmares that will shape the twenty-first century—from overcoming death to creating artificial life.

"Where do we go from here?"

[The editors suggest that Christian theologians be aware of Harari's books and his thought since he is attracting a large part of the population to his philosophy, among them the "Nones" who have been quite prominent in the news in recent years.]

Theology and Science. Volume 16:3, August 2018

Reviewed by Carla Mae Streeter, OP, Aquinas Institute of Theology

This issue of the journal, *Theology and Science*, focuses on the topic of Transhumanism. It asks the direct question, “Can moral enhancement and deification be achieved through technology?”

The lead article is written by Mark Walker, who holds the Chair of Advanced Philosophical Studies at New Mexico State University. Nine authors then respond to his lead from various perspectives. I try to summarize their efforts below. As might be expected, one of the editors of the Journal, Ted Peters, has the final word, literally and in my view, theologically.

Walker, Mark, “Genetic Engineering, Virtue First Enhancement, and Deification in Neo-Irenaeian Theodicy.” Walker writes to ask whether Irenaeus rather than Augustine would champion today’s genetic engineering and virtue-first enhancement. He offers a tentative “yes” to this question, suggesting that Irenaeus opens up the possibility of a theodicy that not merely rationalizes evil, but overcomes it. He presupposes the risk of “growing up” for humans to become involved in their own process of becoming the *imago dei* through virtue-first enhancement. Practically, he admits this is not the case for those working in human enhancement efforts today.

Grouw, Arvin M., “Genetic Virtue Program: An Unfeasible Neo-Pelagian Theodicy?” Grouw’s question is whether we can precipitate virtuous living at all through genetic engineering. He answers with a firm “no,” that gradient morality flowing from free will cannot originate from genetic-first engineering. He admits that if science shows evident causative connection, he would change his position. Further, he holds that this proven influence would be positive if there is true human enhancement.

Molhoek, Braden, “Raising the Virtuous Bar: The Underlying Issues of Genetic Moral Enhancement.” Molhoek’s question is “Can we enhance moral behavior through genetic modification?” His answer is that we can enhance the *disposition* toward moral behavior, but not virtue itself, for virtue flows from human freedom through an ongoing process. Molhoek’s view assumes that virtue is first a way of *being*, its action manifesting a

distinct human response. Using Reinhold Niebuhr rather than Aristotle and Thomas Aquinas on virtue, he accepts that all that characterizes human beings is embedded in the natural order. Genetic modification for the purpose of infusing virtues is therefore not possible. Rather, such modification is acquired through freely chosen habits. It is not possible to engineer moral virtue genetically. Genetic moral enhancement can influence dispositions, but not virtue itself.

Weissenbacher, Alan, “Defending Cognitive Liberty in an Age of Moral Engineering.” This author wants to know if there is an *internal criterion* that can serve as a guide to protect against coercive technologies. His answer is that using ACI (acceptability across ideologies), abuses of the technology of GVP (the gene moral enhancement project) and BVP (the brain enhancement project) can be guided. He presupposes the reader understands that the present ethical rules need serious updating due to vagueness. Weissenbacher is calling for clearer definitional specificity. He believes that greater recognition of the nature of current brain processes and disclosure of side-effects is critical. The adoption of the internal criteria of ACI as a guide for moral engineering leads to cognitive liberty, mental integrity, and psychological continuity.

Woloschak, Gayle E., “Can we Genetically Engineer Virtue and Deification?” This author’s question is reflected in her title. Her answer is no, because virtue genes are not part of the geneticist’s inventory; nor is free will or any reference to the role of God; yet future advances in the science of virtue is actually possible. She thus presupposes that “spiritual” functions such as free will and divine action be considered. Until it is, her conclusion is that at this point *theosis* cannot be genetically determined.

Benders, Allison, “Genetic Moral Enhancement? Yes. Holiness? No.” Benders is asking a double question: Does genetic moral enhancement *cause* or *predispose* us to choose the good? And then does this make us holy? She starts her reply by reminding us that MONOAMINE OXIDASE A (MAOA) deficiency can cause impaired

Continues on page 11

impulse control, and it can be replaced. This in no way addresses the innate human desire toward transcendence. Her conclusion is that no amount of genetic engineering can alter one's judgment of fact or value. It might support a *predisposition* toward a response, but not the intentionality that produces holiness. She suggests Lonergan's developmental explanation might support Walker's preference for Irenaeus.

Fullam, Lisa, "Genetically Engineered Traits versus Virtuous Living." Fullam begins by asking what might prevent Free Market Eugenics - the sale of gene modification – from becoming a social sin. She reminds us that we cannot engineer virtue genetically at the start of life; it requires practice and choice. If social bias affects our capacity to decide what appropriate modification is, then *where will we find guidance?*

Cole-Turner, Ron. "Theosis and Human Fulfillment." The author asks the reader: If theosis defines the goal of Christian life, can human enhancement technology be a matter of indifference? He replies, yes and no. True theosis is *kenotic, communal, cosmic, and continual*, and when we accept theosis as such, "technology will take care of itself." But presupposing this end does not provide the means. Guidance is needed to realize this theological end.

Jong, Jonathan, "On Biotechnology, Theology, and the Human Sciences." Jong asks what theological account of human nature we might offer that does not unduly rely on only biological accounts. He replies that we have uncritically adopted scientific ontologies in our philosophizing and theologizing. As a result, God and nature occupy the same secondary efficient causal space. God is primary efficient cause. Nature, including the human, is an instrumental secondary efficient cause. We need clarity about human nature. We need the theologians to prompt us to ask the right questions.

Peters, Ted. "Imago Dei, DNA, and the Transhuman Way." Peters' driving question is, "If genetic engineering or cyborgization cannot turn mortal humans into mortal gods, what will finally transform us?" He replies that we are on our way to becoming who we really are, and this enhancement derives from a divine gift that keeps us human in the midst of this transformation. External transcendence as virtue cannot be engineered; it is a self-chosen discipline that must build on any genetic inclination provided. Final human transformation is ultimately the work of the Christian deity within the human.

*The following quote, taken from **The Mind of God: Neuroscience, Faith, and a Search for the Soul**, by Dr. Jay Lombard, a behavioral neurologist and cofounder of Genomind*, has a private practice in New York. He served his residency in brain research at Long Island Jewish Medical Center where he became interested in questions about "...life and how neuroscience may help answer them: among them, Is there a God? And Do humans have souls?" Lombard approaches these and other questions through the prism of the Jewish faith. Nonetheless, his theories are applicable to the Christian and Catholic faith as well. He often appears on YouTube and various main stream media news programs. [The Editors highly recommend this book, now residing on the bookshelves at the ITEST office.]*

"The hidden reality is that we are the divine sparks of 'not merely a piece of the entire existence, but in a certain sense the whole.' Our unique creation is God's way of choosing the means of expression of his will, our existence. Through our individual and collective human actions, as souls in bodies, we have the capacity and responsibility to restore these dispersed fragments of light – this love- back into our existence. It is thus only this, the realization through action that our essence is immortal. That essential element of who we are, that which is part of God."

*An assay for diagnosing and treating brain disorders.

A Final Word by Earl Muller, SJ

Very briefly stated transhumanism is the movement that seeks the enhancement of human nature through various forms of technology. The term “transhumanism” envisions that the result could be the evolution of a species that transcends the present day *homo sapiens*. The following is an attempt to capture some of the key elements found on the preceding pages and add a final thought or two.

There are problems with this movement with regard to Catholic faith but these do not have to do with the notion of enhancing human nature through technology or with the notion that this would result in a new species. Current studies in biological evolution suggest that “humanity” originated prior to the emergence of *homo sapiens*. The key issue here is when did specifically “human” rationality appear. Even a conservative Thomist like Dennis Bonnette, *Origin of the Human Species* (Ave Maria, FL: Sapientia Press, 2014), will locate that emergence with *homo erectus* based on the clearly artistic artifacts produced by them. If true humanity began with *homo erectus* and evolved to *homo sapiens*, then, in principle, there can be no fundamental problem with further human evolution. Much of current human enhancement to date has taken the form of therapeutic modifications to replace damaged or missing parts to the human body (artificial limbs, kidney dialysis, arterial stents, and so forth). Some plastic surgery would qualify for non-therapeutic but one can also well imagine brain implants that would connect us more directly with our surrounding technology.

One of the key problems with some transhumanist thought for Catholic faith would be the presumption that human reality is exclusively material, i.e., that there is no rational soul (spirit) directly created by God. Human rationality becomes reduced merely to the activity of the brain and this, in principle, can be transferred to a computer, allowing a human person to achieve a kind of immortality (apart from any “gods”). The ultimate human enhancement is our divinization in Christ, our participation in the divine life. This is not achievable by ourselves; it requires a transcendent agency attracting us in our human freedom. This cannot be technologically achieved or coerced.

Some schemes presume a radical malleability of human nature which would allow the elimination or the reduction to insignificance of the sexual distinction between men and women (involving, among other things, the development of artificial wombs) thus undermining important elements of

Christian symbolism (Christ, the Bridegroom, with his Bridal Church).

More likely would be the creation of an unequal split within the human race. Radical enhancement will not come cheaply and can hardly be expected to be universally available. It is one thing to discover that vitamins enhance human growth and development—this has been widely disseminated; the sort of enhancement envisioned by some transhumanists would only be possible for an elite (the wealthy, the politically powerful, the well-connected, celebrities). The rest of humanity would be left behind as this elite “evolved.” One is minded of H. G. Wells’ *The Time Machine*. The unity of the human race (both in sin and in salvation) is fundamental to Christian faith as is the charity that “shares the wealth.”

The road to the transhuman itself can be problematic. Such advances require experimentation, ultimately on human individuals. Some enhancements prove to be counterproductive (steroids in sports). It is one thing to experiment on an adult who gives knowledgeable consent but some of the prospective enhancements would be aimed at the very young, indeed, at the embryonic (“designer babies”). It is all too easy even at the present time to ignore the human dignity of individuals (the unborn, for instance).

There is no radical split between genuine religious faith and scientific advancement. But it is useful to keep in mind that even the most noble of pursuits can be twisted by the original sin that has infected all of us.



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