The Transhumanist Vision: Technological Bliss or Tragic Misadventure?

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Transhumanism has burst upon the scene as a technologically based approach to the world and human aspirations. For some, it is compatible with Christian thinking and attitudes, although this depends upon the manner in which transhumanism is practiced and on the core beliefs of one's Christian faith. For many, however, the two are seen as incompatible worldviews, depending upon the degree to which human-driven technologies or God's grace are core elements. Nevertheless, there are overlaps between the two since technology has made profound inroads into Christian attitudes and expectations, particularly in the biomedical and health area.

The thrust of this article is to explore these inroads and the possibility that they expose Christians, far more than they might realize, to aspects of transhumanist thinking. This is done by tracing the trajectory of modern medicine with its increasing dependence upon technological interventions, and, hence, increasing reliance upon nonbiological intrusions in the human body. From here it is a short distance from improving human well-being to creating improved versions of humans as we know them. The debate hinges on the role and meaning of enhancement, and a continuum is traced from routine therapy, through more extensive enhancements, to radical transformation with its goals of eradicating disease, death, and mortality. The latter is the utopian world of transhumanism, even though there are elements of these within traditional Christianity. The challenge is to determine the role and extent of technology in bringing them about. For instance, there is increasing evidence of healthy individuals employing drugs designed for therapeutic purposes to improve their cognitive performance and to modify their behavior. These trends are critically analyzed by exploring the characteristics of Christian enhancement, including an examination of certain theological dualities, such as mortality and immortality, perfection and imperfection, humility and hubris. It is concluded that Christians are constantly to question how the technology at their disposal is being used, both at the individual level and in the Christian community. In this way, the value or otherwise of transhumanist tendencies will become clear.

David Winyard in his seminal article for this issue very cogently charts the background to contemporary transhumanism, revealing what its main proponents claim, their vision, and even their "religious" moorings.[1] In this way, he helpfully outlines the contributions of thinkers such as Max More,[2] William Sims Bainbridge,[3] Ray Kurzweil,[4] Nick Bostrom,[5] and Martine Rothblatt.[6] This clearly indicates the fundamental basis of the movement, namely, its secular vision of unlimited techno-scientific progress. Far-reaching enhancements to the human condition will, it is claimed,

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be achieved—and perhaps can only be achieved—through science and technology. These will be so profound that they will be able to overcome life's basic limitations, although the science and technology will themselves have to be radically overhauled in order to bring about the revolutionary changes envisaged. The faith of transhumanists, therefore, is two-fold—it is heavily dependent upon radical forms of science, and also on the development of these new radical new procedures. Nevertheless, the rapid progress in regenerative medicine, genetic engineering, neuroscience, neural implants, bionics, artificial intelligence (AI), robotics, nanotechnology, and computer technology points in the direction of ever-increasing control over the human body, and, hence, over many aspects of human life as we know it today.

In view of these challenges, Winyard poses a number of questions, commencing with the limitations of the science and technology required, and the relevance of even very sophisticated science and technology in making human beings more human. He also queries the value of technological enhancements for improving the quality and depth of human life, and whether transhumanism is a scientific enterprise and/or a religious one.

In an effort to elaborate on these concerns, the present article proposes that transhumanism is not a recent isolated phenomenon that has arisen out of nowhere. Rather, the enhancements characteristic of contemporary medical science contain within them the seeds of the transhumanist agenda. To an extent, all have, unawares, bought into elements of transhumanism, albeit in nascent form. It would not have blossomed in the absence of the many revolutionary scientific advances characteristic of modern medicine. Recognition of this link between transhumanist vistas and the everyday health enhancements enjoyed by most people in an increasing number of technologically advanced societies, in no way justifies transhumanist thinking. But it does provide a context for assessing the claims of transhumanism and for understanding why it has arisen as a phenomenon in societies dominated by spectacular scientific achievements in medicine, and how, for instance, increasing longevity can be a harbinger of transhumanist claims that people should live to well in excess of 100 years and ultimately achieve physical immortality.[7]

But what is transhumanism and from where has it come? And to what extent is it a homogeneous movement? In addition, does it have a place for Christian input, and, if so, what is the nature of that input?

The Emergence and Flourishing of Transhumanism

The origins of transhumanism emerged with a number of thinkers from the 1920s onward, but it was not until the 1950s that a more specific reference to the term "transhumanism" appears in the writings of Sir Julian Huxley, the British evolutionary biologist. In a 1957 essay, he wrote about the human species being able to transcend itself in its entirety as humanity. He wrote,

> We need a name for this new belief. Perhaps *transhumanism* will serve: man remaining man, but transcending himself, by realizing new possibilities of and for human nature … the human species will be on the threshold of a new existence … It will at last be consciously fulfilling its real destiny.[8]

Over succeeding years, a range of thinkers took up and developed the transhumanist theme, emphasizing artificial intelligence and the concept of the technological singularity.[9] In 1998, Nick Bostrom and David Pearce founded the World Transhumanist Association, that later adopted The Transhumanist Declaration, and was transformed into Humanity Plus (H+).[10]

Definitions of transhumanism vary, but tend to revolve around a new way of thinking that starts from the premise that the human condition is open to being altered in dramatic ways.[11] These changes include the development of super-intelligent machines, personality pills, space colonization, molecular nanotechnology, vastly extended life spans, uploading of our consciousness into a virtual reality, and reanimation of cryonics patients. By its very nature, transhumanism is interdisciplinary, aiming to promote opportunities for enhancing the human condition and the human organism opened up by advances in technology. While the potential technological developments are many, the ones that repeatedly come to the fore are genetic engineering and information technology, with future ones such as molecular nanotechnology and artificial intelligence. For transhumanists, human nature is a work in progress since current humanity need not be the

endpoint of evolution. The key to unlocking humanity's potential lies with technology, the adoption of which may lead to the emergence of posthumans, beings with vastly greater capacities than found in any present human beings.

For a transhumanist such as Bostrom,[12] transhumanism has roots in secular humanist thinking, and yet it is more radical in that it does not confine itself to traditional means of improving human nature, such as education and cultural refinement. Instead, it looks to the direct application of medicine and technology to overcome our basic biological limits. In this way, it opens up the posthuman realm, with posthumans overcoming what for us are inherent biological limits. This leads to the concept of the emergence of distinctly different posthumans, with their increased life expectancy, intelligence, health, memory, and emotional sensitivity. The ideal would be for these future posthumans to lead lives that are more worthy than those of ordinary humans. For Bostrom, the tragedy is that 150,000 human beings die every day without having had access to the anticipated enhancement technologies that will make it possible to become posthuman.[13] The corollary, from his perspective, is that the sooner this technology develops, the fewer people will have died without having had a chance to experience this transition to the posthuman realm. It has even been postulated by a critic of transhumanism that transhumanists have no interest in natality since the birth of a child only serves as a reminder of death and decay.[14]

Implicit within these developments is what is viewed as the moral urgency of saving lives, on the ground that aging is currently the number one killer.[15] Indeed, aging is seen as the most important limitation of human existence, since it leads to death. The goal of rejuvenation technology is to combat this and unlock the secrets of indefinite youth.[16] Hence, a key transhumanist priority is anti-aging medicine, with the goal of radically extending people's active health-spans. This, in turn, leads to what is viewed as an intermediary measure, the cryonic suspension of the dead, in anticipation that future technologies will become available to reanimate people who have been cryonically suspended.[17]

From this brief overview, a number of dominant features emerge: the necessity of biomedical enhancement, the context provided by evolutionary thinking, the postulated emergence of posthumans, and the superiority of this new humanity. While most transhumanists do not refer ostensibly to religious aspirations, one gets the impression that for most of them religion is irrelevant.

Nevertheless, for some transhumanists there are religious overtones, and these have hints of perfection, of playing God, and of transforming *Homo sapiens* into *Homo deus*.[18] Ted Peters has commented, "Enhancement technology has become for many among the nonreligious the ticket to divinity, to deification, to *theopoiesis*, to becoming a god."[19] More specifically, there are Mormons with transhumanist inclinations, leading to the establishment of a Mormon Transhumanist Association in 2006, followed in 2014 by a Christian Transhumanist Association.

Christian Transhumanism

A Christian transhumanist has been described as someone who advocates using science and technology to transform the human condition, consistent with and exemplified by the discipleship of Christ.[20] In setting out to love God, Christian transhumanists aim to focus on that which is transcendent; pursue greater coherence of mentality, physicality, and spirituality; and seek the betterment of the world. They seek to use science and technology to accomplish these ends. Their assumption is that God works through technology and also through evolution. The Christian Transhumanist Association affirms, among other points, that God's mission involves the transformation and renewal of creation, that science and technology are tangible expressions of our God-given impulse to explore and discover, and that the intentional use of technology, coupled with following Christ, will empower us to become more human.[21] It is this last point that sets them apart from other Christians, since science and technology have become central to their mission. Their goal is to improve the human condition, via the ethical use of technology to extend human ability by enhancing human intellectual, physical, and psychological capacities.[22]

Christian transhumanism walks a tightrope as it seeks to balance its commitment to technology as the agent of human transcendence and the Christian's recognition of one's dependence upon God's grace as the mark of his undeserved goodness. In addition, there is a tendency to ignore the way in which

technologies so often are perverted and bent toward destructive ends.[23] It also has, as its working assumption, the prospect that technology can accomplish the sort of transformation that Christians have traditionally argued can be brought about only by an act of a gracious and loving God.

The early insights of Julian Huxley were secular, and yet he also had religious leanings albeit "without revelation."[24] However, Pierre Teilhard de Chardin, the Jesuit priest and palaeontologist, sought to reconcile his Christianity with a grand evolutionary vision of the future trajectory of humankind culminating in the Omega Point.[25] He used the term "God-Omega" since his main emphasis was on Omega as a personal being, as Christ.[26] For him, humankind is made to be surpassed since he looked forward to a super-humankind. The goal of the future lies beyond humans, and even beyond the biological. For Teilhard, the divergence of evolution up to humans is replaced, once humans are reached, by a convergence. The details are not relevant for a discussion of transhumanism since Teilhard was not a transhumanist in the modern sense, and yet his speculative Christological vistas have inspired some Christian transhumanists. For him, *Omega* was the end product of natural evolution and, augmented by his Christian faith, was also Christ or God. For Teilhard, cosmogenesis was Christogenesis.[27]

In traditional Christian terms, we grow in grace and in godliness by following Christ in our daily living. This is a gradual process as we grow in obedience and are led by the Holy Spirit. However, some have argued that we can amplify this growth process by applying DNA technology.[28] This is the aim of the Genetic Virtue Project (GVP), an interdisciplinary effort to enhance human ethics using genetic correlates of virtuous behavior. The empirical plausibility that virtues have biological correlates is based on the assumption that (a) virtues are a subset of personality traits conceived of as "enduring behaviors," and (b) that these traits have a genetic basis. The drive for moving in this direction is to eliminate evil. In other words, it would be possible to bring about virtuous living by genetic engineering rather than by discipline and faithfulness.

In light of the above account of transhumanism, one can conclude that it contains within it a number of diverse currents, in large part arguing from a secular basis, although not exclusively so. It has religious overtones, while some coming from a Christian base have bought into the potential of technology to enhance Christian aspirations. Has this inadvertently altered the character of the gospel itself? Quite clearly, a Teilhardian approach has vast ramifications for the meaning of the gospel, and, while this approach is not typical of all transhumanists, it is an indication of one outcome of shifting the balance between a biblically based Christian faith and an evolutionary-based one.[29] Equally, undue dependence upon the prospects opened up by what technology might be able to accomplish in modifying human abilities or life span will have implications for human meaning, and not merely for human health and well-being. These are cautions that underlie the manner in which we approach the offerings of modern medicine.

The Trajectory of Modern Medicine: A Prelude to Transhumanism

When writing on transhumanism, an overbearing temptation is to delve immediately into what appear to be the outlandish speculations of an out-of-control secularist scientific mindset, far removed from any Christian attitudes or aspirations. Eradicating aging as a cause of death, using implants to augment our senses, boosting our cognitive processes by being connected to memory chips are all viewed as steps on the way to merging humans and machine.[30] To conclude that these are the fantasies of egomaniacal geeks is hardly surprising. And yet, care is required at this point since the distinction between some elements of a transhumanist vision and a plethora of Christian expectations of what constitutes a healthy, fulfilled life may be smaller than frequently assumed. It is for this reason that there are Christian transhumanists, who regard themselves as being faithful exponents of the gospel.

The reason for this assertion is that the character of medicine has been transformed, over many decades, from its role as a healing profession with the aim of, as far as possible, restoring individuals to good health, and caring for them and comforting them when cure has been out of the question.[31] Traditionally, there was a pastoral dimension within medicine, hence, its recognition as a caring profession. Its practitioners invariably did good, even if their abilities were frequently constrained due to their limited understanding of biological processes, but, on some

occasions, they actually did harm. Any advances that helped rectify this ignorance were welcomed, and this continued until it became evident that medicine itself was being transformed from within by massive shifts in its biological substructure: in genetics, neuroscience, reproduction, developmental biology, and public health. Consequently, the ability of medicine to control human beings in previously unimaginable ways began to surface, with the unanticipated consequence that it may, on occasion, be used in significantly harmful ways. Its power to do good now had to be seen alongside this far less desirable power, and choices had to be made. Medicine had become a far more ambiguous venture than previously, in which biomedical scientists had become the power brokers and medicine, as a caring profession, had been transformed into a scientifically based, technologically refined enterprise aimed at restoring and even improving the human body.[32] These concerns should immediately lead to caution at grandiose vistas, whether expressed by transhumanists or others, of completely transforming the human body.

Threats posed by medical advances stem from the capabilities of the science alongside dramatic changes in the worldviews of many in society. Consequently, "the Christian drivers that led to the establishment of hospitals and overcame social deprivation have been replaced by a secular humanistic worldview intent on lauding biological quality and longevity."[33] Other Christian writers point to the threat posed by reductionism, technology, and consumerism.[34] The shift is from viewing human beings in their wholeness as persons with social relationships and cultural norms, to abstracted physical machines capable of being understood as little more than biochemical, physiological, and molecular entities. Very readily, the process of manipulating brains, livers, and limbs is equated with manipulating and transforming the individuals themselves. Rather than being content with healing and caring for patients, the manipulations undertaken come to be regarded as ends in themselves.[35] In this way, medicine, as traditionally conceived, begins to metamorphose into a means of improving people and going beyond the therapeutic; thus transhumanism in embryonic form has been born.

Whenever technology is regarded as more than a mere tool, it can readily be approached as a source of meaning; whatever can be accomplished using technology can be justified as a means of modifying the human condition. This in itself may have little to do with transhumanism, but once Christians, along with most other people, welcome such incursions as beneficial, the stage is set for the emergence of transhumanism. It is this gradation—from accepting technologies that largely improve human well-being and are compatible with a Christian rationale, to forbidding post-Christian ones capable of threatening the core of one's humanity—that is both unanticipated and deceptive.

It is not enhancements as such that are the problem, but it is the manner in which they will be deployed. It is the burgeoning power of technology that is at the core of all these enterprises, from regenerative medicine with its many therapeutic possibilities at one end, to the production of cyborgs with their increasing reliance upon nonbiological interventions in the brain and body.[36] Prospects of this nature are proving deeply disconcerting for many people, including—but not confined to—those with religious perspectives. The question is whether these prospects should be viewed in optimistic or dysfunctional terms. The gravity of the situation is highlighted by the message promulgated by some transhumanists that, in future, there will exist two populations of human beings, the unenhanced (the natural) and the physically, cognitively, and genetically enhanced (post-persons/posthumans).[37] These populations will, in turn, represent the privileged and the unprivileged, the rich and the poor, thereby creating a new form of inequality. Humans will have become creators in their own right, by constructing a substantially "improved" version of themselves, a version that goes well beyond routine treatment and involves far more than the routine regenerative capacities of the human body.[38] No matter how speculative much of this is, and even how unlikely it is to eventuate in anything resembling this form, it points to a dominant thread within medico-social thinking, one based in a scientific rationalist materialism, substantially at odds with Christian conceptions. Nothing in this trajectory is inevitable, even if the technological feats behind it were to eventuate as envisaged. All these possibilities may not be core transhumanist ones, especially for those with a religious outlook, and yet they appear repeatedly in the literature.

Exploring the Enhancement—Transhumanist Continuum

The continuum from therapy through various enhancements, and on to overt transhumanism provides a crucial framework within which to approach transhumanism.[39] One day it may prove possible to enhance a healthy person (H) so that they become super-healthy (SH), such as being able to protect against early onset Alzheimer's disease (AD) by some form of genetic manipulation of embryos. Would this be therapy or enhancement? They will not be SH because the protection is solely against early onset AD. Similarly, public health measures, such as the use of vaccines as prophylactics and the provision of clean water supplies, have been transformative for whole populations. Life expectancy has been increased, largely through dramatic decreases in neonatal and childhood mortality.[40]

More extensive enhancement could, theoretically, lead to an extension of abilities, so-called super-abilities (SA). In this instance, normal functions are extended, leading to individuals who are more intelligent than they would otherwise have been, or are capable of running faster than through training alone. These individuals perform beyond their natural capacities, although even these enhanced individuals may perform less well than other highly talented, non-enhanced individuals. The bar has been raised by good nutrition and hygiene, and by superior educational opportunities.[41] The border between therapy and enhancement has become indistinct, but this is not transhumanism.

The goal for some is to produce post-persons/post-humans.[42] Such beings would have been radically transformed (RT), and could be designated a new quasi-species, who will, apparently, enjoy absolute morphological freedom and live for hundreds of years.[43] Radical transformation would appear to have no boundaries, since it has become a means of deconstructing and reconstructing the human body.[44]

In this utopian world, aging is viewed as a disease that is to be treated and even vanquished.[45] Mortality will have been replaced by immortality, and human bodies will be capable of endless renewal in an age- and disease-free world. Transhumanism is highly speculative about what science will achieve and the ways in which it will enable humans to perform tasks barely imaginable at present.[46] Its philosophical dependence upon these futuristic scenarios allows it to envision a massively transformed future, in which science has become the tool for a range of philosophical pretensions. By contrast, therapeutic enhancements of the human condition are driven by a medical/health model, in which the good of the patient is paramount, an end in harmony with Christian perspectives. A person might contend that these futuristic scenarios have similarities to Christian claims about the after-life, and yet this is misleading since the one will be brought about by human effort and science, whereas the other is completely dependent upon the actions and purposes of God.

In his analysis of human enhancement, Denis Alexander recognizes four types.[47] Type A, transhuman enhancement, refers to physical or mental enhancements that go well beyond anything found in present humanity. A current example is those who have had microchips implanted in their hands containing personal details, credit card numbers, and medical records (it can be argued that these examples are relatively close to Type B and not typical of the full-blown transhumanism advocated by many transhumanist writers). Type B, individual enhancement, refers to enhancement of the individual over and above their own previous abilities, but still within the range of abilities presently found within human populations. An example is a disabled athlete using artificial legs to make them competitive with healthy unenhanced athletes. Type C, prophylactic enhancement, is the use of technological processes to prevent disease, such as vaccination and daily statins to reduce blood cholesterol to prevent heart disease and strokes. He also recognizes a fourth type, D, namely Christ-centered enhancement (see section Transhumanism through a Christian Prism below).

Winyard divides potential human enhancements into six steps, spanning a timeframe from the present to 2045 and beyond.[48] For him, steps 4–6 look beyond present capabilities and fit into Alexander's transhuman enhancement category. In contrast, steps 2–3 correspond to Alexander's individual enhancement, and step 1 to his prophylactic enhancement. In other words, there is a noticeable divide between currently feasible and currently utilized enhancements (the SH and SA referred to previously), and those characteristic of the far more speculative transhumanist pretensions (the RT category). This is the fundamental divide between improvements in human health

and well-being, as opposed to attempts to create a new form of human being: parallel to the divide between Christian and secularist worldviews.

Enhancement per se is a virtue; it is preferable to live in a stimulating environment, rather than in a depressing and debilitating one. It is preferable that most children live beyond the age of five years, and that people, in general, live for many years in a relatively disease-free body, rather than in a body wracked with disease. Hence, it is preferable to eliminate infectious diseases, provide a nutritious diet, control cancers, and eradicate congenital disorders. All are enhancements with the potential to improve the quality of human life, and are determined by a desire to maintain the sense of a common humanity and by the need to improve the well-being of as many as possible.[49] They are to operate within constraints imposed by the broad parameters of the religious notion of the "givenness" of human existence.[50] This notion reflects dependence upon God and his good purposes, and while it is to be approached cautiously, it is not suggesting that nothing can ever be altered; rather, it provides constraints and boundaries for human manipulation.

Central to any consideration of enhancement are its goals. Why is it being undertaken? Who will potentially benefit? Who, if anyone, will be disadvantaged?[51] The central focus is the good of individual humans and of human communities, a basic concept within Christian thinking and practice.

Can People's Morality Be Improved Biologically?

In his perceptively prophetic novel, *Brave New World*, Aldous Huxley in 1932 foresaw attempts at enhancing people's morality using pharmacological means.[52] And yet this brave new world of his was certainly not a paradise. Unfortunately, this reminder of the inevitability of a downside to our technological ventures is all-too-often overlooked by the purveyors of a future technological nirvana—our brave new world of unimaginable enhancements will probably not be exempt from the tragedy of unforeseen failure.[53]

The performance of ordinary people is currently enhanced by biomedical technology. Drugs designed to treat a medical condition are employed by healthy individuals to improve their performance even though there is no indication of the medical condition in question. For example, the use by students of psychostimulants is commonplace,[54] while some student populations appear to be amenable to the use of neuroenhancers if they can be assured there are no adverse effects.[55] In addition, drugs originally designed for therapeutic purposes are employed by healthy individuals to stave off tiredness, improve concentration and short-term memory, and combat the formation of traumatic memories.[56]

Cognitive-enhancing drugs, such as modafinil, are routinely employed, even though they may be addictive, due to the similarity in brain mechanisms for learning and memory and for addictive behavior.[57] It is also salutary to realize that cognitive enhancement brought about by modifying the brain may have long-term negative repercussions.[58]

When discussing the drugs generally associated with the enhancement of moral behavior, two emerge as of preeminent interest, namely, serotonin and oxytocin. The latter is even referred to, perhaps misleadingly, as "the trust hormone" or "moral molecule."[59] Chemicals like these probably influence brain circuits active during moral judgment and linked to emotions such as empathy, guilt, and pity.[60] However, this and other results are far removed from the notion that oxytocin is a moral enhancement agent.[61]

Serotonin, for its part, appears to be the neural substrate of ethical decision-making.[62] Overall, however, there is a complex interrelationship between biological, psychological, and social systems.[63] It is important, therefore, to ensure that any social dysfunction is principally the result of neural characteristics, and does not originate in the environment and in the network of the individual's relationships.

The complexity of these interrelationships should serve as a warning against placing excessive reliance upon moral bioenhancement as superior to the usual methods of moral education, even if the latter are considered inadequate to cope with the destructive resources at humankind's disposal.[64] Even proponents of genetic and other biological means of improving moral status recognize that these are a long way from having been perfected.[65] Unfortunately, this way of thinking is committed to the notion that moral issues have to be reduced to a neurobiological substratum and therefore have to be amenable to a technological solution.[66] Their

assumption is that were societies to move in this direction, serious crime would be eliminated. While there is a close two-way relationship between our brains and behavior, and while drug treatment can improve behavior, it would be unwise to place excessive reliance upon this means of increasing altruism and justice.

Care is required in placing too much reliance upon attempting to modify people's moral responses by technological means. This would require a high level of moral awareness by the "haves" to make decisions about the moral bioenhancement of the "have nots." But how will they acquire the moral wisdom to determine the scope of the moral enhancement needed to curb the criminality, say, of others?[67] Even more tendentious is the suggestion that technological enhancement procedures should be made compulsory for certain forms of criminality,[68] and the further suggestion that parents will have a moral duty to enhance the cognitive abilities of their children.[69] These directions are seriously put forward by some, but, in reading the literature, it is often not possible to know whether these writers consider themselves to be transhumanists. Their dependence upon scientific manipulation is, however, undoubted.

When the initial debate on the prospects opened up by technological means of "improving" morality was concluding, a newer method of cognitive enhancement appeared, namely, transcranial direct current stimulation (TDCS). The claim here is that TDCS can improve language and mathematical abilities, memory, problem solving, attention, and even movement.[70] In TDCS, weak electrical currents are applied for about 20 minutes to the head via electrodes placed on the scalp. The currents pass through the skull and alter spontaneous neural activity, the goal being to increase neuroplasticity and enable learning. Effects can persist for up to 12 months.[71] These changes probably result from changes in the local concentration of the neurotransmitters GABA and glutamate, both of which are important in synaptic mechanisms implementing learning and memory.[72]

These characteristics of TDCS make it an attractive tool for manipulating neurobehavioral plasticity and potentially for enhancing psychological functions.[73] There are also claims that certain biochemical interactions stimulate the moral imagination, increase empathy toward others, and improve powers of moral judgment and reasoning,[74] although little attention has been paid to possible negative side-effects. These data are interesting in themselves, and yet there are dangers of concentrating solely on one moral response at the expense of the importance of human relationships. Nevertheless, TDCS may improve some aspects of learning, and it is regarded by many transhumanists as a practical expression of transhumanism.

Transhumanism through a Christian Prism

The challenge for Christians living in a highly technological world and confronted by technologically based claims, is to find a balance between therapeutic technologies for which they are very grateful, and extreme visions, whether utopian or dystopian, that extend far beyond any therapeutic imperative. Doomsday scenarios frighten and scare with their visions of radically modified humans: post-persons with enhanced cognitive and moral capacities,[75] cyborgs in which every body system will have been redesigned,[76] and even reanimated cryopreserved bodies.[77] Each of these has its origins in the present, although there are immense differences between those with artificial limbs or joints and the cyborgs of transhumanism, or between cryonic procedures and the infinitesimal chance of these ever being reanimated. Christians are to be realists, utilizing what is helpful and uplifting, and rejecting the hype and extremism.[78]

Rival Virtues

Alexander, in his analysis of transhumanism, starts from the characteristics of Christian enhancement, namely, growth in virtues such as kindness, humility, love, and generosity, all of which are central to the flourishing of relationships.[79] These are central to healthy human communities with their diversity of human personalities, abilities, convictions, limitations, and strengths, all expressed so eloquently by the writers of the New Testament letters when reflecting on the church as the body of Christ.[80] In contrast, the transhumanist vision appears to look to the artificial, the robots, the cyborgs, and programs to ensure that all operate according to preordained specifications, even as some of them claim to exhibit a great deal of concern about and motivation from human relations.

The virtues for Christians are not static but develop as people respond to the call of God and as they

increase in faithfulness. This is what Paul refers to as the fruit of the Spirit—love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, and self-control.[81] These are not automatically implanted in someone's life, but have to be nurtured through obedience and response to the work of the Holy Spirit in their life. In other words, they are the antithesis of mechanically implanted ways of operating morally. This is not an argument against a brain implant to overcome a deficit, such as a motor deficit in Parkinson's disease, but it would be an argument against an implant aimed at providing a person with moral directions provided by an outside agent. Hypothetical as the latter may be, it serves to illustrate the difference between the two situations and represents a mode of control generally regarded as antithetical to Christian aspirations.

One goal of some transhumanists appears to be to rid humans of their bodily restrictions, and ultimately to replace the body altogether by a digital mind.[82] This is not a universal transhumanist aspiration, but it characterizes one strand within the movement. For this group, a future life in the body, including a resurrected body,[83] has disappeared, and with it, redemption and newness of life. Others, by contrast, claim to want a more robust body, with meaningful relationships. However, the thrust toward the artificial tends to undermine this.

The transhumanist worldview with its excessive dependence upon technology has problems coping with suffering,[84] as well as with loss and disappointment, even though some Christian transhumanists claim to respond to suffering and loss. Similarly, experiencing joy at overcoming obstacles, assisting others, looking after those in need, and healing the sick and downtrodden is less apparent in a technologically dependent world.[85] The human agenda within a Christian context is rich with challenges and hope, even when the surroundings may be negative and full of despair. For the transhumanist, however, all that seems to matter is a technologically engendered seamless perfection based on hubris, and an assumption that technological approaches will solve every problem.[86]

The Christian imperative to love one's neighbor, and especially the weak and poor, points to the need to assess enhancements in relation to the manner in which they will benefit as many people as possible and not just those with power and money—an element strikingly absent from much of the current ethical debate.[87] If moral enhancements are to benefit as many as possible, it is strange to hear calls for them to be made obligatory, since these calls reflect the powerful dominating the powerless. This domination, with its downgrading of personal liberty, is the antithesis of moral enhancement. In view of these considerations, Alexander concludes,

> Christians find themselves at the difficult juncture between the present evil age and the age to come, where the waters are rough and often treacherous as two strong currents flow in opposite directions. But being made in the image of God involves "subduing the earth" (Genesis 1:28) and that might surely, in principle at least, include the prevention of lethal genetic diseases by the restoration of mutated DNA to its normal sequence.[88]

This encapsulates a Christian response with its openness to scientific intrusions into the human body, but against a backdrop of God's purposes for human beings with our present mortal bodies and our future resurrected bodies.

Theological Challenges

These challenges can be framed by reference to three dualities.[89]

1. Mortality and Immortality

Transhumanism epitomises a secular eschatology, in which humans will be able to achieve a form of bodily (or digital) immortality. The future becomes an extension of the present, and hope emerges from this continuation. However, if this extension is going to prove successful, the problems and shortcomings, let alone the evil, of the present age will have to be removed by technology. In other words, if continuation of the present is to be an attractive option, all pathologies that lead to illness and aging would have to be removed by technology, thereby ushering in perfection and immortality. Transhumanists assume that the future existence as envisaged by them will be a vastly improved version of the present life, an assumption that has been stridently criticized by many Christian writers.[90] This, of course, does not include Christian transhumanists, as outlined in the earlier section, Christian Transhumanism.

Secular transhumanists ignore the relationship between death and sin, and hence the place of grace and forgiveness in confronting sin. To live forever with some form of physical immortality would not

constitute redemption, but would give corruption an everlasting licence.[91] Divine grace would have been replaced by autonomous human achievement. Christian theology recognizes that God experiences suffering and death, suffering from which posthumans seek to escape. Replacing grace by human/posthuman scientific effort may be a path to which some seek to aspire, but it is not a path akin to a Christian one.

Facing up to the reality of death brings us to the heart of Christian thinking. Christians should not extol the virtues of death since death is real and is an evil. Allen Verhey writes, "Death sunders human beings from their own flesh, from the community of praise, and from God. Death is a power that threatens […]"[92] It threatens an unraveling of meaning and is always a cause of sorrow and grief, but the context for the Christian is one of hope based in the power of God that raised Jesus from the dead.[93] Consequently, Christians are not to seek hope in technological mastery over nature, "but rather in the creative work of God that can call a cosmos out of chaos and give light to the darkness and life to the dust."[94] Since Christians do not ultimately rely on technology, they are freed to care for others even when death is imminent. By recognizing and accepting the "not yet" character of their present existence, Christian expectations will be constrained.[95]

A Christian diagnosis notes the inequalities of opportunity throughout the world, where speculation about endless biological life amounts to little more than academic theorizing. Celia Deane-Drummond has written,

> Such drives avoid facing the tragic reality of a life cut off well before its prime, and the added injustices associated with uneven distribution of medical resources that make consideration of life extension and other enhancements the privilege of a relatively small minority, even if desired more widely.[96]

Enhancement from a Christian angle centers on caring for people in need, treating diseases that can be treated, providing nutritious meals, and seeking to ensure that as many people as possible have housing that is warm and dry. These are realistic goals that accept human mortality within the context of the Christ-centered hope that God will bring into being a world redeemed and redirected. It is the hope of the resurrection and of resurrected bodies in which all are made new.[97] This new creation differs radically from the technologically driven present world envisaged by transhumanists. Christians neither reject the blessings that frequently accompany technology, nor do they look to technology to usher in the new heavens and the new earth.

2. Perfection and Imperfection

The continuum from therapy, through enhancement and on to transhumanism, creates problems for Christians since it encapsulates elements of striving for perfection. In societies that offer improved health and longer lives, it becomes increasingly difficult to accept imperfection and limitations.[98] Nevertheless, awareness of these temptations serves as a reminder that for Christians ultimate perfection is to be found in God alone and in his redeemed kingdom. Not only this, the perfection to be sought is that of character and attitudes rather than of the physical body. The work of Christ transcends the physical and biological, but neither does it totally ignore them.

Over against perfection stands the dark specter of our imperfection as human beings. Everything we touch is tainted; we see in a glass darkly.[99] Human understanding is partial, and human wisdom is less impressive than often imagined. All our scientific endeavors and all our clinical competence are incomplete; the developments of which we are most proud leave much to be desired, and Christians should be the first to applaud what can be accomplished, but also acknowledge that which is beyond our powers of comprehension and control. Perfection is unattainable biologically and untenable theologically.[100]

Lisa Fullam, in her analysis of the claims of transhumanists, notes that the act of attempting to engineer virtue may actually exacerbate social sins, since it is flawed humans who are setting the ground rules for determining the virtues being manipulated.[101] Against this, some writings from a Christian stance advocate for enhancing genetic virtue on the ground that it may be able to enhance the human tendency to, and capacity for, virtuous action.[102] Apart from the questionable Christian rationale for this, there are few grounds for anticipating that this will prove feasible scientifically.

3. Humility and Hubris

Any Christian conception of humility will have as core dual features the importance of serving others

and of serving God, rather than oneself. This will lead to lowly acts of service; we will not think of ourselves more highly than can be justified.[103] Christians are to be realistic about themselves and others, being fully aware that there are many occasions when they and others will be wrong. These features, in turn, point to the ways in which Christians are to behave, and they also constitute the basis for good practice in the scientific realm.

This Christian approach to the world differs radically from transhumanism, especially by secular forms of transhumanism, characterized as the latter is by hubris at the possibilities opened up by scientific capabilities to transform the human condition. This goes well beyond any healthy approach to science and its admittedly exciting prospects of improving aspects of human life, but equally aware of its limitations and the sometimes-aberrant directions provided by human beings. Ted Peters contends that each new technological transformation is blighted by human fallenness, and therefore has the potential for self-destruction along with the potential for healing.[104] For him, "only God's final act of redeeming grace will relieve us of such self-destruction."[105]

Overconfidence in the reliability of scientific procedures and in excessively bold interpretative frameworks leads on occasion to paradigms that extend far beyond what can be justified by the data. This is the result of hubris and unscientific speculations that take on the aura of invincibility, that emerges repeatedly in hyper-speculative digressions on cyborgs, posthumans, and transhumanism in general. It also emerges in the assurance with which moral bioenhancement is put forward as a solution to human problems. Justin Tomkins comments, "Becoming better people rather than enhanced humans involves living with a sense of how our own callings relate to the wider activity of God himself."[106] This involves trusting in God and not seeking to take ultimate control ourselves.

Peters nicely sums up the need for realism in all discussion of the future. He writes,

> Realism maintains a stubborn awareness that every dramatic technological transformation carries with it human fallenness, the potential for self-destruction right along with the potential for healing. Only God's final act of redeeming grace will relieve us of such self-destruction.[107]

The realism inherent within Christian thinking leads to a questioning of the motives, the grand theorizing and the incipient pride and arrogance of those who pontificate about radically transforming human beings with technologies yet to be developed. All such ventures are driven by the prospect of remaking humanity in one's own image, an image of oneself according to one's own ego. It is reminiscent of the scenarios suggested by reproductive cloning, of making more people like "me," with my esteemed virtues (whatever these may be); unfortunately, we make errors of judgment, we are self-centered, and our vistas may turn out to be incomplete and unhelpful. Honesty and objectivity are basic requirements in any exciting area.

Can We Learn Anything from the Transhumanist Vision?

The temptation when confronted by extreme vistas with which one has little sympathy is to dismiss them completely. And yet that would be unhelpful, since transhumanism, for all its failings, is a forcible reminder that Christians are as liable as anyone else to rely excessively on technology. Rather than looking to God, whom Christians claim to worship and rely on, they immediately utilize the nearest technological fix. The balance between fixes and patience can readily disappear, and little regard is given to the suffering and discomfort that may be called for on occasion. Our temptation is to accept all that technology has on offer or, alternatively, to reject it in its entirety. Discernment and understanding, based on biblical teaching and directives, are constantly to be the Christian's guides in order to meet the challenges of an environment strongly influenced by a secular mindset.

Tomkins, in his assessment of transhumanism, utilizes Bonhoeffer's distinction between the ultimate and the penultimate, and the importance of retaining sight of both.[108] The Christian perspective regards the physical world as having value as part of creation, plus the incarnation of Jesus pointing to the new creation. A danger inherent within transhumanism is to reduce all things to the artificial and brain function, valuing intelligence more highly than love or compassion, downplaying the importance of human embeddedness in our bodies, and rejecting biblical insights into the centrality of a resurrected spiritual body.[109] It is true that there are Christian transhumanists who are attempting to utilize technological

developments in the service of Christ's redeeming purposes in the world, but they have yet to demonstrate that this approach will enhance, rather than detract from, Christian understanding.

These comments do not lend themselves to a simple conclusion: technological bliss or tragic misadventure? All such contrasts are unhelpful simplifications; our dependence upon technology will always be a mixed blessing. If it ends up in secular transhumanism, it will have seriously misled us; if it ends up in Christian transhumanism, it will prove a distraction, depending upon the extent to which our technological dependence has or has not replaced the biblical witness to God's redeeming purposes in Jesus Christ. However, even for those not tempted by any form of transhumanism, the reliance upon technological answers can be both a blessing and a distraction. Indeed, it will always be a mixture of both, leaving us with the responsibility of discerning on what or on whom to place our reliance. There is a continuum between therapy, sophisticated enhancement, and what one might describe as "transhumanism light." For the Christian, the constant call is to examine that on which one is relying, and on whom or on what, one is trusting. It is to question how the technology at our disposal is being used, both at the individual level and in Christian community. +

Notes

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For now we see only a ***reflection*** *as in a mirror; then we shall see* ***face to face.***
Now I know ***in part****; then I shall know* ***fully,***
even as ***I am fully known.***
1 Corinthians 13:12, NIV