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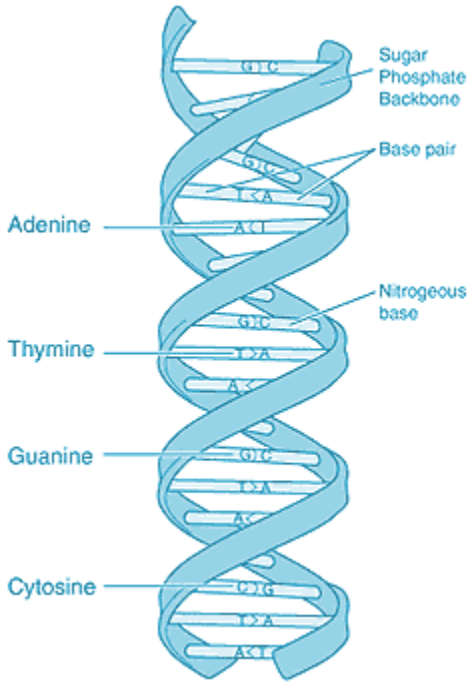
AN OPEN LETTER TO CHRISTIAN LEADERS ON TRANSHUMANISM AND THE FUTURE OF MAN

63-80 minutes

THE ISSUE



In recent years, astonishing technological developments have pushed the frontiers of humanity toward far-reaching morphological transformation that promises in the very near future to redefine what it means to be human. An international, intellectual, and fast-growing cultural movement known as transhumanism, whose vision is

supported by a growing list of U.S. military advisors, bioethicists, law professors, and academics, intends the use of biotechnology, genetic engineering, nanotechnology, cybernetics, and artificial intelligence as tools that will radically redesign our minds, our memories, our physiology, our offspring, and even perhaps— as Joel Garreau, in his bestselling book Radical Evolution, claims—our very souls. The technological, cultural, and metaphysical shift now underway unapologetically forecasts a future dominated by this new species of unrecognizably superior humans, and applications under study now to make this dream a reality are being funded by thousands of government and private research facilities around the world. The issues raised by human-transforming science must be addressed by Christian leaders in a serious national conversation. To fail in this responsibility may lead to the question “what does it mean to be human” being abdicated to a frightening transhuman vision.

AN OPEN LETTER TO CHRISTIAN LEADERS ON TRANSHUMANISM AND THE FUTURE OF MAN

Time running out to influence debate

May 20, 2018
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by Dr. Thomas R. Horn
SkyWatchTV.com

Dear Pastor and Christian Leader,

Brent Waters, Director of the Jerre L. and Mary Joy Stead Center for Ethics and Values has written, “If Christians are to help shape contemporary culture—particularly in a setting in which I fear the posthuman message will prove attractive, if not seductive—then they must offer an alternative and compelling vision; a counter theological discourse so to speak.”

Although the Vatican in 2008 issued a limited set of instructions on bioethics primarily dealing with in vitro fertilization and stem cell research (*Dignitas Personae* or “the Dignity of the Person”) and a handful of Christian scientists, policy makers, and conservative academics have hinted in public commentary on the need for a broader, manifesto-like document on the subject, the church as an institution has failed at any concerted effort to focus on the genetics revolution, the government’s interest in human enhancement, the viral transhumanist philosophy capturing the mind of a generation at colleges and universities (not to mention via popular media), and the significant moral and ethical issues raised by these trends. While the Vatican’s Dignitas Personae failed to provide instructions on the greater issue of biological enhancement (as envisioned by transhumanists and espoused by agencies of the U.S. and other federal governments as the next step in human evolution), its positional paper did provide an important bird’s-eye view on the clash developing between traditional morality and ***the contradictory adoption of transhumanist philosophy by***

Christian apologists**, who likewise have begun to question what it means to be human and **whose competing moral vision could ultimately shape the future of society.

Immediately following the release of Dignitas Personae, Catholic scientist William B. Neaves, in an essay for the National Catholic Reporter, reflected the new biblical exegesis, causing reporter Rod Dreher to describe it as clearly illustrating "the type of Christianity that is eager to jettison the old morality and embrace the new." The subtleties behind Neaves' comments included:

An alternative point of view to the Vatican's, embraced by many Christians, is that personhood [a transhumanist concept] occurs after successful implantation in the mother's uterus, when individual ontological identity is finally established…. If one accepts the viewpoint that personhood begins after implantation, the moral framework guiding the development and application of medical technology to human reproduction and treatment of disease looks very different from that described in Dignitas Personae.

In the alternative moral framework, taking a pill to prevent the products of fertilization from implanting in a uterus is morally acceptable. Using ivf [in vitro fertilization] to complete the family circle of couples otherwise unable to have children is an unmitigated good. Encouraging infertile couples with defective gametes to adopt already-produced ivf embryos that will otherwise be discarded is a laudable objective. And using

embryonic stem cells to seek cures [creating human embryos for research “parts”] becomes a worthy means of fulfilling the biblical mandate to heal the sick.

Notwithstanding that the discussion by Neaves was limited to the Vatican’s position on embryos, his introduction of memes involving personhood and “ensoulment” represents worrisome Christian theological entanglement with transhumanist philosophy, further illustrating the need for a solid manifesto providing a conservative vision for public policy with regard to human experimentation and enhancement.

In the letter to the church at Ephesus, Paul states the responsibility of the Church as the agent of God’s wisdom, concluding this was by divine intention. “His intent was that now, through the church, the manifold wisdom of God should be made known to the rulers and authorities in the heavenly realms” (Ephesians 3:10). Making known the “righteous” and manifold wisdom of God must include human-affirming virtues of Christian morality that are intrinsic to His divine order and the Great Commission. In every generation, there is no middle ground for preachers of righteousness in these matters. Christian leaders must be actively engaged in ideological warfare for the mind of a generation especially in an age where people are seeking reasons to believe, despite everything they are being told, that the church remains relevant. To fail this responsibility could be to abdicate to a frightening transhuman vision of the future such as was

predicted by theologian and Christian apologist C. S. Lewis in The Abolition of Man. Lewis foresaw the day when transhumanist and scientific reasoning would win out, permanently undoing mankind through altering the species, ultimately reducing Homo sapiens to utilitarian products. Here is part of what he said:

In order to understand fully what Man's power over Nature, and therefore the power of some men over other men, really means, we must picture the race extended in time from the date of its emergence to that of its extinction. Each generation exercises power over its successors: and each, in so far as it modifies the environment bequeathed to it and rebels against tradition, resists and limits the power of its predecessors. This modifies the picture which is sometimes painted of a progressive emancipation from tradition and a progressive control of natural processes resulting in a continual increase of human power. In reality, of course, if any one age really attains, by eugenics and scientific education, the power to make its descendants what it pleases [transhuman/posthuman], all men who live after it are the patients of that power. They are weaker, not stronger: for though we may have put wonderful machines in their hands we have pre-ordained how they are to use them. And if, as is almost certain, the age which had thus attained maximum power over posterity were also the age most emancipated from tradition, it would be engaged in reducing the power of its predecessors almost as drastically as that of its successors….

> The last men, far from being the heirs of power, will be of all men most subject to the dead hand of the great planners and conditioners and will themselves exercise least power upon the future…. The final stage [will have] come when Man by eugenics, by pre-natal conditioning, and by an education and propaganda based on a perfect applied psychology…shall have "taken the thread of life out of the hand of Clotho" [one of the Three Fates in mythology responsible for spinning the thread of human life] and be henceforth free to make our species whatever we wish it to be. The battle will indeed be won. But who, precisely, will have won it?

Lewis foresaw the progressive abandonment of what we would call "moral law" based on Judeo-Christian values giving way to "the dead hand of the great planners and conditioners" who would decide what men should biologically become. The terms "great planners and conditioners" correspond perfectly with modern advocates of transhumanism who esteem their blueprint for the future of the species as the one that will ultimately decide the fate of man. A recent step toward establishing this goal occurred when the U.S. National Science Foundation (NSF) and the Human Enhancement Ethics Group (based at California Polytechnic State University, whose advisory board is a wish list of transhumanist academics and institutions worldwide) released its fifty-page report entitled "Ethics of Human Enhancement: 25 Questions & Answers." This government-funded report addressed the definitions, scenarios, anticipated societal disruptions, and

policy and law issues that need to be considered en route to becoming posthuman. Some of the topics covered in the new study include:

- What are the policy implications of human enhancement?
- Is the natural-artificial distinction of human enhancement morally significant?
- Does human enhancement raise issues of fairness, access, and equity?
- Will it matter if there is an “enhanced divide” between “new” people classifications?
- How would such a divide make communication difficult between “normals” and the “enhanced”?
- How should the enhancement of children be approached?
- What kind of societal disruptions might arise from human enhancement?
- Should there be any limits on enhancement for military purposes?
- Might enhanced humans count as someone’s intellectual property?
- Will we need to rethink the very meaning of “ethics,” given the dawn of enhancement?

The “Ethics of Human Enhancement” report was authored by the NSF-funded research team of Dr. Fritz Allhoff (Western Michigan University), Dr. Patrick Lin (California Polytechnic

State University), Prof. James Moor (Dartmouth College), and Prof. John Weckert (Center for Applied Philosophy and Public Ethics/Charles Sturt University, Australia) as part of a three-year ethics study on human enhancement and emerging technologies. This came on the heels of the US National Institute of Health granting Case Law School in Cleveland $773,000 of taxpayers' money to begin developing the actual guidelines to be used for setting government policy on the next step in human evolution–"genetic enhancement." Maxwell Mehlman, Arthur E. Petersilge Professor of Law, director of the Law-Medicine Center at the Case Western Reserve University School of Law, and professor of bioethics in the Case School of Medicine, led the team of law professors, physicians, and bioethicists over the two-year project "to develop standards for tests on human subjects in research that involves the use of genetic technologies to enhance 'normal' individuals." Following the initial study, Mehlman began offering two university lectures: "Directed Evolution: Public Policy and Human Enhancement" and "Transhumanism and the Future of Democracy," addressing the need for society to comprehend how emerging fields of science will, in approaching years, alter what it means to be human, and what this means to democracy, individual rights, free will, eugenics, and equality. Other law schools, including Stanford and Oxford, are now hosting similar annual "Human Enhancement and Technology" conferences, where transhumanists, futurists, bioethicists, and legal scholars are busying

themselves with the ethical, legal, and inevitable ramifications of posthumanity.

“No matter where one is aligned on this issue, it is clear that the human enhancement debate is a deeply passionate and personal one, striking at the heart of what it means to be human,” explained Dr. Lin in the NSF report. Then, with surprising candor, he added, “Some see it as a way to fulfill or even transcend our potential; others see it as a darker path towards becoming Frankenstein’s monster.”

Because any attempt at covering each potential GRIN-tech, catastrophic, Frankenstein’s monster possibility in an open letter such as this would be impractical, I summarize below a few of the most important areas in which conservatives, bioethicists, regulators, and especially Christians could become informed and involved in the public dialogue over the potential benefits and threats represented by these emerging fields of science:

CRISPR GENE EDITING

One of the most celebrated breakthroughs allowing for manipulation of human genomes even to the germline level involves CRISPR technology, an acronym that stands for Clustered Randomly Interspersed Palindromic Repeats. China has already gene-edited dozens of people using this technology, and the United States is planning to follow their lead starting in 2018. The fancy CRISPR phrase merely refers to repeated units found in bacteria as a defense against

viruses. Palindrome merely means they spell the same genetic “word” backward and forward, and they appear in “clusters.” In 2012, this system of genetic editing found its way into the national lexicon as CRISPR-Cas 9 (the “Cas” just means CRISPR-associated and refers to an enzyme used to cut the DNA strands—in this case, Cas #9).

DNA is usually double-stranded, consisting of two long strings of nucleotides (adenine, cytosine, guanine, and thymine) upon a sugar backbone (deoxyribose). The strands are mirror complementary, locking together like puzzle pieces. The shape of the molecular bonds between the complementary nucleotides (A-T, C-G) causes the double strand to twist into its familiar helical shape. Genes are collections of nucleotides that translate into an end-product protein. If the gene contains an error, the final protein may not fold correctly, which causes it to function poorly, if at all.

Think of the human cell as a city. Inside this city are workers, buildings, power stations, and a city planning office. The nucleus is this office, and within it are the plans for all the buildings, directions to all the workers, instructions for manufacturing, etc. The genes in a cell are these plans and instructions. When scientists want to know how a gene works, they disrupt it, remove it, replace it, edit it, or switch it off. CRISPR is currently the most efficient way to do this, but the science is advancing daily. To find the right “plan” in the city office, the scientist uses a “guide RNA,” which you can think of

as a civil servant or clerk who knows where everything is filed. The “guide RNA” leads the enzyme (a molecular pair of scissors such as Cas9) to the correct “file” or gene, where Cas9 cuts the strands (in essence, it opens the file). At this point, it might replace the file (or gene with one attached to the guide RNA), or it might add a repressor protein to keep others from opening the file (effectively switching the gene off). Or it could switch it on, to make sure the gene gets transcribed into a protein by removing a repressor protein. Or Cas9 might simply cut the strands to force repair based upon another template already present.

To use another analogy, CRISPR is a bit like using a word processing program to edit a document. You can use “find and replace” to insert whatever new phrase you wish, you can convert text to a “strikethrough” font, or you can simply delete it altogether without replacing it.

CRISPR can do much more than alter DNA within somatic cells. This process can alter many generations through the germline by replacing or changing genes within sperm and ova. These new characteristics then become heritable, passing from generation to generation.

Despite what the media may want you to believe, CRISPR is hardly infallible. Many researchers report “off-site” or “off-target” editing, which can lead to illness and/or death in the subject cells.

One final point about CRISPR: If you want to travel into a city

(or cell) and inspect plans within that city's office, then you have to get to the right city, correct? So, how does the CRISPR-Cas system arrive into the correct cell in a living person? If someone wants to alter a gene inside the lungs or a kidney, then how do you make sure it doesn't invade the eye or bone? The answer is a biological truck called a "vector" in molecular biology. In most cases, this vector is viral, because viruses can infect specific cells. Other biological trucks are currently being designed, though. Cellular membrane vehicles (derived from the cell type), proteins, lipids, and combinations of all the above are being studied.

LETTER CONTINUES BELOW VIDEO

Sid Roth Interviews Tom Horn & Sharon Gilbert On CRISPR TECH, Human Genetic Modification

HUMAN-ROBOT OFFSPRING VIA TNT (tissue nanotransfection)

With new parthenogenotes technology human eggs can be "tricked" into developing into an embryo without fertilization allowing two females, for example, to offer skin samples from which a child could be born entirely from a laboratory, producing a literal and biological offspring of two female parents. Ethical and religious questions regarding the artificial embryo have kept this technology from becoming available to same-sex partners for now, but it's only a matter of time and red tape—all that is needed to make human babies today is DNA. And all that will be required to make human/robot babies

in the very near future is the integration of human DNA and robot "DNA." These robot chromosomes will be "a set of computerized DNA codes for creating artificial creatures that can have their own personality…based on established biological inheritance laws," Dr. David Levy observes. The genetic codes are broken into two categories: "personality" and "outward." As the titles suggest, the "personality" or genotype coding will provide genetic information to guide specific internal makeup, while the "outward" or phenotype coding will determine the way the robot looks and acts, including hair color, eye color, personality and so on.

A first major milestone allowing robots and/or "computer" minds to write hitherto unknown genetic coding and to give birth to first-ever synthetic life forms was achieved in the landmark experiments of Craig Venter, "the pioneering US geneticist behind…the dawn of a new era in which new life is made" in 2016.

At the time, Julian Savulescu, professor of practical ethics at Oxford University, observed: "Venter is creaking open the most profound door in humanity's history, potentially peeking into its destiny. He is not merely copying life artificially…or modifying it radically by genetic engineering. **He is going towards the role of a god: creating artificial life that could never have existed naturally."**

A lot has developed since Venter's breakthrough mentioned above. Science has marched relentlessly forward from novel

organisms to science that may now allow a human/robot couple to produce human/robot offspring using robot-generated DNA sequencing implanted into a human mother or other human biological matter (such as sperm-and-eggs-from-skin-cells). This possibility has arrived thanks to “tissue nanotransfection” (TNT for short).

The initial motive for perfecting TNT technology was never related to creating human/robot offspring. One helpful article explains:

Researchers at Ohio State’s College of Engineering and The Ohio State University Wexner Medical Center have developed a new technology, Tissue Nanotransfection (TNT), that may be used to repair or restore injured or aging tissue, including blood vessels, nerve cells, and entire organs.

In a fraction of a second, the device injects genetic code into the skin, turning those cells into other types of cells required for treating diseased conditions, generating any cell type of interest for treatment within the patient’s own body. The device could save the lives of car crash victims or injured soldiers, and restore brain function after strokes. [i]

What started as a “one-touch healing” nanochip technology for repairing injured or aged body tissues has now become the primary vehicle that makes the transference of robotic DNA information into human tissue a possibility. If the injection delivered by TNT were to hold both human and robotic genetically designed codes, the offspring resulting from a

successful, full gestational term would be—quite literally—half human, and half robot DNA.

Dr. Chandan Sen, director of Ohio State's Center for Regenerative Medicine & Cell Based Therapies and other biologists interviewed on the subject in 2017, admit:

Suddenly the very real possibility has appeared on the horizon of the robots of the future manipulating human skin cells to create human sperm and human eggs, and from them, using the Ohio discovery of TNT as the basis, creating an entire human-robot baby whose embryo can be nurtured and carried through pregnancy by a mother surrogate. By injecting genetic code into skin cells à la TNT, the Ohio researchers have paved the way for the genetic code of a robot, containing some of the characteristics of the robot, to be passed on to its offspring along with human genetic code. This is how I believe it will be possible, within the foreseeable future, for humans and robots to make babies together. [ii]

Whereas that doesn't mean the resulting baby will be born with wires and steel joints, it does mean that a lonely man will be able to provide his own DNA to a laboratory, purchase a robot, pay an expert programmer to give her the looks and personality he wants, have her looks and personality translated into genetic coding for implantation into biological matter, and let the laboratory—or a surrogate mother—grow the couple's baby. He can then take his child and AI partner home and become an adorable little family of one human, one

robot, and one…what?

SYNTHETIC BIOLOGY

Synthetic biology is one of the most powerful areas of biological research that seeks to design new forms of life and biological functions not found in nature. The concept began emerging in 1974, when Polish geneticist Waclaw Szybalski speculated about how scientists and engineers would soon enter "the synthetic biology phase of research in our field. We will then devise new control elements and add these new modules to the existing genomes or build up wholly new genomes. This would be a field with the unlimited expansion [of] building new…'synthetic' organisms, like a 'new better mouse.'" Following Szybalski's speculation, the field of synthetic biology reached its first major milestone in 2010 with the announcement that researchers at the J. Craig Venter Institute (JCVI) had created an entirely new form of life nicknamed "Synthia" by inserting artificial genetic material, which had been chemically synthesized, into cells that were then able to grow. The JCVI Web site explains:

Genomic science has greatly enhanced our understanding of the biological world. It is enabling researchers to "read" the genetic code of organisms from all branches of life by sequencing the four letters that make up DNA. Sequencing genomes has now become routine, giving rise to thousands of genomes in the public databases. In essence, scientists are digitizing biology by converting the A, C, T, and G's of the

chemical makeup of DNA into 1's and 0's in a computer. But can one reverse the process and start with 1's and 0's in a computer to define the characteristics of a living cell? We set out to answer this question [and] now, this scientific team headed by Drs. Craig Venter, Hamilton Smith, and Clyde Hutchison have achieved the final step in their quest to create the first…synthetic genome [which] has been "booted up" in a cell to create the first cell controlled completely by a synthetic genome.

The JCVI site goes on to explain how the ability to routinely write the software of life will usher in a new era in science, and with it, unnatural "living" products like Szybalski's "new better mouse." Jerome C. Glenn added for the 2010 State of the Future 14th annual report from the Millennium Project, "Synthetic biologists forecast that as computer code is written to create software to augment human capabilities, so too ***genetic code will be written to create life forms to augment civilization."*** The new better mice, dogs, horses, cows, or humans that grow from this science will be unlike any of the versions God made. In fact, researchers at the University of Copenhagen may look at what Venter has accomplished as amateur hour compared to their posthuman plans. They're working on a third Peptide Nucleic Acid (PNA) strand—a synthetic hybrid of protein and DNA—to upgrade humanity's two existing DNA strands from double helix to triple. In so doing, these scientists "dream of synthesizing life that is utterly alien to this world—both to better understand the

minimum components required for life (as part of the quest to uncover the essence of life and how life originated on earth) and, frankly, to see if they can do it. That is, they hope to put together a novel combination of molecules that can self-organize, metabolize (make use of an energy source), grow, reproduce and evolve."

PATENTING NEW LIFE-FORMS

Questions are evolving now over "patenting" of transgenic seeds, animals, plants, and synthetic life-forms by large corporations, which at a minimum has already begun to impact the economy of rural workers and farmers through such products as Monsanto's "terminator" seeds. Patenting of human genes will escalate these issues, as best-selling author Michael Crichton pointed out a while back in a piece for the New York Times titled, "Gene Patents Aren't Benign and Never Will Be," in which he claimed that people could die in the future from not being able to afford medical treatment as a result of medicines owned by patent holders of specific genes related to the genetic makeup of those persons. Former special counsel for President Richard Nixon, Charles Colson, added, "The patenting of genes and other human tissue has already begun to turn human nature into property. The misuse of genetic information will enable insurers and employers to exercise the ultimate form of discrimination. Meanwhile, advances in nanotechnology and cybernetics threaten to 'enhance' and one day perhaps rival or replace human nature

itself—in what some thinkers are already calling 'transhumanism.'"

HUMAN CLONING

The prospect of human cloning was raised in the nineties immediately after the creation of the much-celebrated "Dolly," a female domestic sheep clone. Dolly was the first mammal to be cloned using "somatic cell nuclear transfer," which involves removing the DNA from an unfertilized egg and replacing the nucleus of it with the DNA that is to be cloned. Today, a version of this science is common practice in genetics engineering labs worldwide, where "therapeutic cloning" of human and human-animal embryos is employed for stem-cell harvesting (the stem cells, in turn, are used to generate virtually any type of specialized cell in the human body). This type of cloning was in the news recently when it emerged from William J. Clinton Presidential Center documents that the newest member of the Supreme Court, Elena Kagan, had opposed during the Clinton White House any effort by Congress to prevent humans from being cloned specifically for experimental purposes, then killed. A second form of human cloning is called "reproductive cloning" and is the technology that could be used to create a person who is genetically identical with a current or previously existing human. While Dolly was created by this type of cloning technology, the American Medical Association and the American Association for the Advancement of Science have raised caution on using

this approach to create human clones, at least at this stage. Government bodies including the U.S. Congress have considered legislation to ban mature human cloning, and though a few states have implemented restrictions, contrary to public perception and except where institutions receive federal funding, no federal laws exist at this time in the United States to prohibit the cloning of humans. The United Nations, the European Union, and Australia likewise considered and failed to approve a comprehensive ban on human cloning technology, leaving the door open to perfect the science should society, government, or the military come to believe that duplicate or replacement humans hold intrinsic value. In more recent developments fears of human cloning have escalated with scientists replicating primates "using the same technique that produced Dolly the sheep two decades ago, breaking a technical barrier that could open the door to copying humans" [iii] as well as European scientists creating "a living embryo in a laboratory without using either egg or sperm in ground-breaking but hugely controversial experiments" [iv]

REDEFINING HUMANS AND HUMAN RIGHTS

Where biotechnology is ultimately headed includes not only redefining what it means to be human, but redefining subsequent human rights as well. For instance, Dr. James Hughes, whom I have debated on his syndicated Changesurfer Radio show, wants transgenic chimps and great

apes uplifted genetically so that they achieve “personhood.” The underlying goal behind this theory would be to establish that basic cognitive aptitude should equal “personhood” and that this “cognitive standard” and not “human-ness” should be the key to constitutional protections and privileges. Among other things, this would lead to nonhuman “persons” and “nonperson” humans, unhinging the existing argument behind intrinsic sanctity of human life and paving the way for such things as harvesting organs from people like Terry Schiavo whenever the loss of cognitive ability equals the dispossession of “personhood.” These would be the first victims of transhumanism, according to Prof. Francis Fukuyama, concerning who does or does not qualify as fully human and is thus represented by the founding concept that “all men are created equal.” Most would argue that any human fits this bill, but women and blacks were not included in these rights in 1776 when Thomas Jefferson wrote the Declaration of Independence. So who is to say what protections can be automatically assumed in an age when human biology is altered and when personhood theory challenges what bioethicists like Wesley J. Smith champion as “human exceptionalism”: the idea that human beings carry special moral status in nature and special rights, such as the right to life, plus unique responsibilities, such as stewardship of the environment. Some, but not all, believers in human exceptionalism arrive at this concept from a biblical worldview based on Genesis 1:26, which says, “And God said, ‘Let us

make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.'"

NANOTECHNOLOGY AND CYBERNETICS

As discussed in the groundbreaking new book ***The Milieu***, technology to merge human brains with machines is progressing at a fantastic rate. Nanotechnology—the science of engineering materials or devices on an atomic and molecular scale between 1 to 100 nanometers (a nanometer is one billionth of a meter) in size—is poised to take the development between brain-machine interfaces and cybernetic devices to a whole new adaptive level for human modification. This will happen because, as Dr. C. Christopher Hook points out:

Engineering or manipulating matter and life at nanometer scale [foresees] that the structures of our bodies and our current tools could be significantly altered. In recent years, many governments around the world, including the United States with its National Nanotechnology Initiative, and scores of academic centers and corporations have committed increasing support for developing nanotechnology programs. The military, which has a significant interest in nanotechnology, has created the Center for Soldier Nanotechnologies (csn) [which is] interested in the use of such technology to help create the seamless interface of electronic

devices with the human nervous system, engineering the cyborg soldier.

LETTER CONTINUES BELOW VIDEO

Dr. Thomas Horn On Why The Church Desperately NEEDS To Understand TRANSHUMANISM

TRANSHUMAN EUGENICS

In the early part of the twentieth century, the study and practice of selective human breeding known as eugenics sought to counter dysgenic aspects within the human gene pool and to improve overall human “genetic qualities.” Researchers in the United States, Britain, Canada, and Germany (where, under Adolf Hitler, eugenics operated under the banner of “racial hygiene” and allowed Josef Mengele, Otmar von Verschuer, and others to perform horrific experiments on live human beings in concentration camps to test their genetic theories) were interested in weeding out “inferior” human bloodlines and used studies to insinuate heritability between certain families and illnesses such as schizophrenia, blindness, deafness, dwarfism, bipolar disorder, and depression. Their published reports fueled the eugenics movement to develop state laws in the 1800s and 1900s that forcefully sterilized persons considered unhealthy or mentally ill in order to prevent them from “passing on” their genetic inferiority to future generations. Such laws were not abolished in the U.S. until the mid-twentieth century, leading to more than sixty thousand sterilized Americans in the

meantime. Between 1934 and 1937, the Nazis likewise sterilized an estimated four hundred thousand people they deemed of inferior genetic stock while also setting forth to selectively exterminate the Jews as “genetic aberrations” under the same program. Transhumanist goals of using biotechnology, nanotechnology, mind-interfacing, and related sciences to create a superior man and thus classifications of persons—the enhanced and the unenhanced—opens the door for a new form of eugenics and social Darwinism.

GERM-LINE GENETIC ENGINEERING & GENE DRIVES

Germ-line genetic engineering has the potential to actually achieve the goals of the early eugenics movement (which sought to create superior humans via improving genetics through selective breeding) through genetically modifying human genes in very early embryos, sperm, and eggs. As a result, germ-line engineering is considered by some conservative bioethicists to be the most dangerous of human-enhancement technology, as it has the power to truly reassemble the very nature of humanity into posthuman, altering an embryo’s every cell and leading to inheritable modifications extending to all succeeding generations. Debate over germ-line engineering is therefore most critical, because as changes to “downline” genetic offspring are set in motion, the nature and physical makeup of mankind will be altered with no hope of reversal, thereby permanently reshaping humanity’s future. Advances allowing for manipulation of

human genomes at the germline level include CRISPR technology mentioned earlier, which has also been successfully tested with “gene drives,” a genetic engineering technology that can replace an existing lifeform with an entirely new version of the species by propagating a genetically modified “replacement” population. A respected proponent of such germ-line technology is Dr. Gregory Stock, who, like cyborgist Kevin Warwick, departs from Kurzweil’s version of Humans 2.0 first arriving as a result of computer Singularity. Stock believes man can choose to transcend existing biological limitations in the near future (at or before computers reach strong artificial intelligence) through germ-line engineering. If we can make better humans by adding new genes to their DNA, he asks, why shouldn’t we? “We have spent billions to unravel our biology, not out of idle curiosity, but in the hope of bettering our lives. We are not about to turn away from this,” he says, before admitting elsewhere that this could lead to “clusters of genetically enhanced superhumans who will dominate if not enslave us.” The titles to Stock’s books speak for themselves concerning what germ-line engineering would do to the human race. The name of one is Redesigning Humans: Our Inevitable Genetic Future and another is Metaman: The Merging of Humans and Machines into a Global Superorganism.

Besides the short list above, additional areas of concern where Christian leaders may wish to become well advised on the pros and cons of enhancement technology include

immortalism, postgenderism, augmented reality, cryonics, designer babies, neurohacking, mind uploading, neural implants, xenotransplantation, reprogenetics, rejuvenation, radical life extension, and more.

HEAVEN AND HELL SCENARIOS

While positive advances either already have been or will come from some of the science and technology fields we are discussing, learned men like Prof. Francis Fukuyama, in his book, Our Posthuman Future: Consequences of the Biotechnology Revolution, warn that unintended consequences resulting from what mankind has now set in motion represents the most dangerous time in earth's history, a period when exotic technology in the hands of transhumanist ambitions could forever alter what it means to be human. To those who would engineer a transhuman future, Fukuyama warns of a dehumanized "hell scenario" in which we "no longer struggle, aspire, love, feel pain, make difficult moral choices, have families, or do any of the things that we traditionally associate with being human." In this ultimate identity crisis, we would "no longer have the characteristics that give us human dignity" because, for one thing, "people dehumanized à la Brave New World…don't know that they are dehumanized, and, what is worse, would not care if they knew. They are, indeed, happy slaves with a slavish happiness." The "hell scenario" envisioned by Fukuyama is but a beginning to what other intelligent thinkers believe could go wrong.

On the other end of the spectrum and diametrically opposed to Fukuyama's conclusions is an equally energetic crowd that subscribes to a form of technological utopianism called the "heaven scenario." Among this group, a "who's who" of transhumansist evangelists such as Ray Kurzweil, James Hughes, Nick Bostrom, and Gregory Stock see the dawn of a new Age of Enlightenment arriving as a result of the accelerating pace of GRIN (genetics, robotics, artificial intelligence, and nanotechnology) technologies. As with the eighteenth-century Enlightenment in which intellectual and scientific reason elevated the authority of scientists over priests, techno-utopians believe they will triumph over prophets of doom by "stealing fire from the gods, breathing life into inert matter, and gaining immortality. Our efforts to become something more than human have a long and distinguished genealogy. Tracing the history of those efforts illuminates human nature. In every civilization, in every era, we have given the gods no peace." Such men are joined in their quest for godlike constitutions by a growing list of official U.S. departments that dole out hundreds of millions of dollars each year for science and technology research. The National Science Foundation and the United States Department of Commerce anticipated this development over a decade ago, publishing the government report *Converging Technologies for Improving Human Performance*—complete with diagrams and bullet points—to lay out the blueprint for the radical evolution of man and machine. Their vision imagined that the "heaven

scenario" would manifest and quickly result in (among other things):

- The transhuman body being "more durable, healthy, energetic, easier to repair, and resistant to many kinds of stress, biological threats, and aging processes."
- Brain-machine interfacing that will "transform work in factories, control automobiles, ensure military superiority, and enable new sports, art forms and modes of interaction between people.
- "Engineers, artists, architects, and designers will experience tremendously expanded creative abilities," in part through "improved understanding of the wellspring of human creativity."
- "Average persons, as well as policymakers, will have a vastly improved awareness of the cognitive, social, and biological forces operating their lives, enabling far better adjustment, creativity, and daily decision making….
- "Factories of tomorrow will be organized" around "increased human-machine capabilities."

Beyond how human augmentation and biological reinvention would eventually spread into the wider culture, the government report detailed the especially important global and economic aspects of genetically superior humans acting in superior ways, offering how, as a result of GRIN leading to techno-sapien DNA upgrading, brain-to-brain interaction,

human-machine interfaces, personal sensory device interfaces, and biological war fighting systems, “The twenty-first century could end in world peace, universal prosperity, and evolution to a higher level [as] humanity become[s] like a single, transcendent nervous system, an interconnected ‘brain’ based in new core pathways of society.” The first version of the government’s report asserted that the only real roadblock to this “heaven scenario” would be the “catastrophe” that would be unleashed if society fails to employ the technological opportunities available to us now. “We may not have the luxury of delay, because the remarkable economic, political and even violent turmoil of recent years implies that the world system is unstable. If we fail to chart the direction of change boldly, we may become the victims of unpredictable catastrophe.” This argument parallels what is currently echoed in military corridors, where sentiments hold that failure to commit resources to develop GRIN as the next step in human and technological evolution will only lead to others doing so ahead of us and using it for global domination.

The seriousness of this for the conceivable future is significant enough that a House Foreign Affairs (HFA) committee chaired by California Democrat Brad Sherman, best known for his expertise on the spread of nuclear weapons and terrorism, is among a number of government panels studying the implications of genetic modification and human-transforming technologies related to future terrorism. Congressional Quarterly columnist Mark Stencel listened to the HFA

committee hearings and wrote in his article, “Futurist: Genes without Borders,” that the conference “sounded more like a Hollywood pitch for a sci-fi thriller than a sober discussion of scientific reality…with talk of biotech’s potential for creating supersoldiers, superintelligence, and superanimals [that could become] agents of unprecedented lethal force.” George Annas, Lori Andrews, and Rosario Isasi were even more apocalyptic in their American Journal of Law and Medicine article, “Protecting the Endangered Human: Toward an International Treaty Prohibiting Cloning and Inheritable Alterations,” when they wrote:

The new species, or “posthuman,” will likely view the old “normal” humans as inferior, even savages, and fit for slavery or slaughter. The normals, on the other hand, may see the posthumans as a threat and if they can, may engage in a preemptive strike by killing the posthumans before they themselves are killed or enslaved by them. It is ultimately this predictable potential for genocide that makes species-altering experiments potential weapons of mass destruction, and makes the unaccountable genetic engineer a potential bioterrorist.

Observations like those of Annas, Andrews, and Isasi support Prof. Hugo de Garis’ nightmarish vision (The Artilect War) of a near future wherein artilects and posthumans join against “normals” in an incomprehensible war leading to gigadeath. Notwithstanding such warnings, the problem could be

unavoidable, as Prof. Gregory Stock, in his well-researched and convincing book, Redesigning Humans: Our Inevitable Genetic Future, argues that stopping what we have already started (planned genetic enhancement of humans) is impossible. “We simply cannot find the brakes.” Scientist Verner Vinge agrees, adding, “Even if all the governments of the world were to understand the ‘threat’ and be in deadly fear of it, progress toward the goal would continue. In fact, the competitive advantage—economic, military, even artistic—of every advance in automation is so compelling that passing laws, or having customs, that forbid such things merely assures that someone else will get them first.” In what we found to be a bit unnerving, academic scientists and technical consultants to the U.S. Pentagon have advised the agency that the principal argument by Vinge is correct. As such, the United States could be forced into large-scale species-altering output, including human enhancement for military purposes. This is based on solid military intelligence, which suggests that America’s competitors (and potential enemies) are privately seeking to develop the same this century and use it to dominate the U.S. if they can. This worrisome “government think tank” scenario is even shared by the JASONS—the celebrated scientists on the Pentagon’s most prestigious scientific advisory panel who now perceive “Mankind 2.0” as the next arms race. Just as the old Soviet Union and the United States with their respective allies competed for supremacy in nuclear arms following the Second World War

through the 1980s (what is now commonly known as “the nuclear arms race during the cold war”), the JASONS “are worried about adversaries’ ability to exploit advances in Human Performance Modification, and thus create a threat to national security,” wrote military analyst Noah Shachtman in “Top Pentagon Scientists Fear Brain-Modified Foes.” This recent special for Wired magazine was based on a leaked military report in which the JASONS admitted concern over “neuro-pharmaceutical performance enhancement and brain-computer interfaces” technology being developed by other countries ahead of the United States. “The JASONS are recommending that the American military push ahead with its own performance-enhancement research—and monitor foreign studies—to make sure that the U.S.’ enemies don’t suddenly become smarter, faster, or better able to endure the harsh realities of war than American troops,” the article continued. “The JASONS are particularly concerned about [new technologies] that promote ‘brain plasticity’—rewiring the mind, essentially, by helping to ‘permanently establish new neural pathways, and thus new cognitive capabilities.’”

Though it might be tempting to disregard the conclusions by the JASONS as a rush to judgment on the emerging threat of techno-sapiens, it would be a serious mistake to do so. As GRIN technologies continue to race toward an exponential curve, parallel to these advances will be the increasingly sophisticated argument that societies must take control of human biological limitations and move the species—or at least

some of its members—into new forms of existence. Prof. Nigel M. de S. Cameron, President of the Center for Policy on Emerging Technologies, in Washington, DC, documents this move, concluding that the genie is out of the bottle and that "the federal government's National Nanotechnology Initiative's Web site already gives evidence of this kind of future vision, in which human dignity is undermined by [being transformed into posthumans]." Dr. C. Christopher Hook, a member of the government committee on human genetics who has given testimony before the U.S. Congress, offered similar insight on the state of the situation:

[The goal of posthumanism] is most evident in the degree to which the U.S. government has formally embraced transhumanist ideals and is actively supporting the development of transhumanist technologies. The U.S. National Science Foundation, together with the U.S. Department of Commerce, has initiated a major program (NBIC) for converging several technologies (including those from which the acronym is derived—nanotechnology, biotechnologies, information technologies and cognitive technologies, e.g., cybernetics and neurotechnologies) for the express purpose of enhancing human performance. The NBIC program director, Mihail Roco, declared at the second public meeting of the project…that the expenditure of financial and human capital to pursue the needs of reengineering humanity by the U.S. government will be second in equivalent value only to the moon landing program.

The presentation by Mihail Roco to which Dr. Hook refers is contained in the 482-page report, Converging Technologies for Improving Human Performance, commissioned by the U.S. National Science Foundation and Department of Commerce. Among other things, the report discusses planned applications of human enhancement technologies in the military (and in rationalization of the human-machine interface in industrial settings) wherein Darpa is devising “Nano, Bio, Info, and Cogno” scenarios “focused on enhancing human performance.” The plan echoes a Mephistophelian bargain (a deal with the devil) in which “a golden age” merges technological and human cognition into “a single, distributed and interconnected brain.” Just visiting the U.S. Army Research Laboratory’s Web site is dizzying in this regard, with its cascading pages of super-soldier technology categories including molecular genetics and genomics; biochemistry, microbiology and biodegradation; and neurophysiology and cognitive neurosciences. If we can so easily discover these facts on the Web, just imagine what is happening in Special Access Programs (saps) where, according to the Senate’s own Commission on Protecting and Reducing Government Secrecy, there are hundreds of “waived saps”—the blackest of black programs—functioning at any given time beyond congressional oversight.

Having taken the lead in human-enhancement studies as a U.S. military objective decades ago, Darpa saw the writing on the wall and in scenes reminiscent of Saruman the wizard

creating monstrous Uruk-Hai to wage unending, merciless war (from J. R. R. Tolkein's Lord of the Rings), began investing billions of American tax dollars into the Pentagon's Frankensteinian dream of "super-soldiers" and "extended performance war fighter" programs. Not only has this research led to diagrams of soldiers "with hormonal, neurological, and genetic concoctions; implanting microchips and electrodes in their bodies to control their internal organs and brain functions; and plying them with drugs that deaden some of their normal human tendencies: the need for sleep, the fear of death, [and] the reluctance to kill their fellow human beings," but as Chris Floyd, in an article for CounterPunch a while back, continued, "some of the research now underway involves actually altering the genetic code of soldiers, modifying bits of DNA to fashion a new type of human specimen, one that functions like a machine, killing tirelessly for days and nights on end… mutations [that] will 'revolutionize the contemporary order of battle' and guarantee 'operational dominance across the whole range of potential U.S. military employments.'"

Related to these developments and unknown to most Americans was a series of hushed events following the sacking of Admiral John Poindexter (who served as the director of the Darpa Information Awareness Office from 2002 to 2003) during a series of flaps, which resulted in public interest into the goings-on at the agency and brief discovery of Darpa's advanced human enhancement research. When the ensuing political pressure led the Senate Appropriations

Committee to take a deeper look into just how money was flowing through Darpa, the staffers were shocked to find “time-reversal methods” in the special focus area, and unstoppable super-soldiers—enhanced warriors with extra-human physical, physiological, and cognitive abilities that even allowed for “communication by thought alone” on the drawing board. Prof. Joel Garreau, investigative journalist, provides a summary of what happened next:

The staffers went down the list of Darpa’s projects, found the ones with titles that sounded frighteningly as though they involved the creation of a master race of superhumans, and zeroed out their budgets from the defense appropriations bill. There is scant evidence they knew much, if anything, about these projects. But we will probably never know the details, because significant people are determined that the whole affair be forever shrouded in mystery. The levels of secrecy were remarkable even for Darpa; they were astounding by the standards of the notoriously leaky Senate. Even insiders said it was hard to get a feel for what the facts really were. It took months of reporting and questioning, poking, and prodding even to get a formal “no comment” either from the leadership of the Senate Appropriations Committee or from Anthony J. Tether, the director of Darpa.

A careful study of Darpa’s programs a year later, however, showed little change. Considerable creative budgetary maneuvering ensued. The peas of quite a few programs now

reside under new, and much better camouflaged, shells. “They’re saying, ‘Okay, this is the second strike. Do we have to go three strikes?’” one manager said. “It doesn’t stop anything. We’ll be smarter about how we position things.” Meanwhile, he said, new human enhancement programs are in the pipeline, “as bold or bolder” than the ones that preceded them.

Not everybody likes the imperatives espoused by Darpa and other national agencies, and from the dreamy fantasies of Star Trek to the dismal vision of Aldous Huxley’s Brave New World, some have come to believe there are demons hiding inside transhumanism’s mystical (or mythical?) “Shangri-la.”

“Many of the writers [of the U.S. National Science Foundation and Department of Commerce Commissioned Report: *Converging Technologies for Improving Human Performance* cited above] share a faith in technology which borders on religiosity, boasting of miracles once thought to be the province of the Almighty,” write the editors of The New Atlantis: A Journal of Technology and Society. “[But] without any serious reflection about the hazards of technically manipulating our brains and our consciousness… a different sort of catastrophe is nearer at hand. Without honestly and seriously assessing the consequences associated with these powerful new [GRIN] technologies, we are certain, in our enthusiasm and fantasy and pride, to rush headlong into disaster.”

Few people would be more qualified than computer scientist Bill Joy to annunciate these dangers, or to outline the “hell scenario” that could unfold as a result of GRIN. Yet it must have come as a real surprise to some of those who remembered him as the level-headed Silicon Valley scientist and co-founder of Sun Microsystems (SM) when, as chief scientist for the corporation, he released a vast and now-famous essay, “Why the Future Doesn’t Need Us,” arguing how GRIN would threaten in the very near future to obliterate mankind. What was extraordinary about Joy’s prophecy was how he saw himself—and people like him—as responsible for building the very machines that “will enable the construction of the technology that may replace our species.”

“From the very moment I became involved in the creation of new technologies, their ethical dimensions have concerned me,” he begins. But it was not until the autumn of 1998 that he became “anxiously aware of how great are the dangers facing us in the twenty-first century.” Joy dates his “awakening” to a chance meeting with Ray Kurzweil, whom he talked with in a hotel bar during a conference at which they both spoke. Kurzweil was finishing his manuscript for The Age of Spiritual Machines and the powerful descriptions of sentient robots and near-term enhanced humans left Joy taken aback, “especially given Ray’s proven ability to imagine and create the future,” Joy wrote. “I already knew that new technologies like genetic engineering and nanotechnology were giving us the power to remake the world, but a realistic and imminent scenario for

intelligent robots surprised me."

Over the weeks and months following the hotel conversation, Joy puzzled over Kurzweil's vision of the future until finally it dawned on him that genetic engineering, robotics, artificial intelligence, and nanotechnology posed "a different threat than the technologies that have come before. Specifically, robots, engineered organisms, and nanobots share a dangerous amplifying factor: They can self-replicate. A bomb is blown up only once—but one bot can become many, and quickly get out of control." The unprecedented threat of self-replication particularly burdened Joy because, as a computer scientist, he thoroughly understood the concept of out-of-control replication or viruses leading to machine systems or computer networks being disabled. Uncontrolled self-replication of nanobots or engineered organisms would run "a much greater risk of substantial damage in the physical world," Joy concluded before adding his deeper fear:

What was different in the twentieth century? Certainly, the technologies underlying the weapons of mass destruction (WMD)—nuclear, biological, and chemical (NBC)—were powerful, and the weapons an enormous threat. But building nuclear weapons required…highly protected information; biological and chemical weapons programs also tended to require large-scale activities.

The twenty-first-century technologies—genetics, nanotechnology, and robotics…are so powerful that they can

spawn whole new classes of accidents and abuses. Most dangerously, for the first time, these accidents and abuses are widely within the reach of individuals or small groups. They will not require large facilities or rare raw materials. Knowledge alone will enable the use of them.

Thus we have the possibility not just of weapons of mass destruction but of knowledge-enabled mass destruction (KMD), this destructiveness hugely amplified by the power of self-replication.

I think it is no exaggeration to say we are on the cusp of *the further perfection of extreme evil*, an evil whose possibility spreads well beyond that which weapons of mass destruction bequeathed to the nation states, on to a surprising and terrible empowerment [emphasis added].

Joy's prophecy about self-replicating "extreme evil" as an imminent and enormous transformative power that threatens to rewrite the laws of nature and permanently alter the course of life as we know it was frighteningly revived in the creation of Venter's "self-replicating" Synthia species (Venter's description). Parasites such as the mycoplasma mycoides that Venter modified to create Synthia can be resistant to antibiotics and acquire and smuggle DNA from one species to another, causing a variety of diseases. The dangers represented by Synthia's self-replicating parasitism thus refueled Joy's opus and has given experts in the field of counter-terrorism sleepless nights over how extremists could

use open-source information to create a Frankenstein version of Synthia in fulfillment of Carl Sagan's *Pale Blue Dot*, which Joy quoted as, "the first moment in the history of our planet when any species, by its own voluntary actions, has become a danger to itself." As a dire example of the possibilities this represents, a genetically modified version of mouse pox was created not long ago that immediately reached 100 percent lethality. If such pathogens were unleashed into population centers, the results would be catastrophic. This is why Joy and others were hoping a few years ago that a universal moratorium or voluntary relinquishment of GRIN developments would be initiated by national laboratories and governments. Venter and his collaborators say they recognize this danger—that self-replicating biological systems like the ones they are building—hold peril as well as hope, and they have joined in calling on Congress to enact laws to attempt to control the flow of information and synthetic "recipes" that could provide lethal new pathogens for terrorists. The problem, as always, is getting all of the governments in the world to voluntarily follow a firm set of ethics or rules. This is wishful thinking at best. It is far more likely the world is racing toward what Joel Garreau was first to call the "hell scenario"—a moment in which human-driven GRIN technologies place earth and all its inhabitants on course to self-eradication.

Ironically, some advocates of posthumanity are using the same threat scenario to advocate *for* transhumanism as the

best way to deal with the inevitable extinction of mankind via GRIN. At the global interdisciplinary institute Metanexus (www.metanexus.net/), Mark Walker, assistant professor at New Mexico State University (who holds the Richard L. Hedden of Advanced Philosophical Studies Chair) concludes like Bill Joy that "technological advances mean that there is a high probability that a human-only future will end in extinction." From this he makes a paradoxical argument:

In a nutshell, the argument is that even though creating posthumans may be a very dangerous social experiment, it is even more dangerous not to attempt it….

I suspect that those who think the transhumanist future is risky often have something like the following reasoning in mind: (1) If we alter human nature then we will be conducting an experiment whose outcome we cannot be sure of. (2) We should not conduct experiments of great magnitude if we do not know the outcome. (3) We do not know the outcome of the transhumanist experiment. (4) So, we ought not to alter human nature.

The problem with the argument is…. Because genetic engineering is already with us, and it has the potential to destroy civilization and create posthumans, we are already entering uncharted waters, so we must experiment. The question is not whether to experiment, but only the residual question of which social experiment will we conduct. Will we try relinquishment? This would be an unparalleled social

experiment to eradicate knowledge and technology. Will it be the steady-as-she-goes experiment where for the first time governments, organizations and private citizens will have access to knowledge and technology that (accidently or intentionally) could be turned to civilization ending purposes? Or finally, will it be the transhumanist social experiment where we attempt to make beings brighter and more virtuous to deal with these powerful technologies?

I have tried to make at least a *prima facie* case that transhumanism promises the safest passage through twenty-first century technologies.

Katherine Hayles, professor of English at the University of California, in her book How We Became Posthuman takes it one step further, warning that, “Humans can either go gently into that good night, joining the dinosaurs as a species that once ruled the earth but is now obsolete, or hang on for a while longer by becoming machines themselves. In either case…the age of the human is drawing to a close.”

CALL FOR PAPERS

While the “counter theological discourse” Brent Waters mentioned at the start of this letter would be reflective of the everlasting gospel of human redemption through the person of Jesus Christ and antithetical to Mark Walker’s salvation plan via transhumanism, any serious resistance statement (as advocated by ***The Milieu***) must address the difficult philosophical and ethical questions raised by modern

technology and the portentous move by governments and powers to use biological sciences to remanufacture mankind. The message would need to be relevant and appeal to the questions and style of a generation raised during the Digital Revolution, an age of personal computing and information-sharing technology that for many of us represents a shift away from the Industrial Revolution's outdated methods of communicating. The need to parse information is changing so rapidly that we expect to hit the knee of the techno-info curve sometime around the year 2020, followed by Technological Singularity and critical mass. As a result, this open letter is a personal invitation to Christian leaders to offer feedback and comments on the abbreviated information above. I welcome all philosophical and scientific reasoning that is firmly tethered to biblical truth in hopes of generating a broader philosophical, ethical, and theological positional paper that can be made part of a first collaborative Manifesto and published verbal declaration of intentions, motives, and guiding views for a Christian response providing a conservative vision for religious and public policy with regard to human experimentation and enhancement in this 'hybrid age.'

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