Going Against the G.R.AI.N.

Towards an Evangelical Statement on the Ethics and Philosophies

of the Application of Emerging Technologies for the Progress of Humanity

by

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There is something undeniably great about the human race. In the eighth Psalm, David insisted boldly that we were made "a little lower" than the *elohim,* that we were crowned with glory and honor, and that we were given dominion over all of creation and the animals. Consider the outcome of the clash with the Neanderthals, our most formidable *competitors*. The genetic and archeological data from the last twenty years proves that they were not our ancestors and that they differed from us not just by mere degree but by type.[1] That they seem to have had the technological know-how to do some basic rock-flaking and craft crude thrusting-spears. They *might* have even used fire as a tool, but, if so, it is not clear that they knew how to start fires. When we—the true humans—entered their lands we were masterfully flaking highly sophisticated points and launching them very effectively at our prey very effectively from a distance with atlatl technology. We were sewing excellent clothing from skins and furs while they remained naked. We were painting impressive murals on cave walls that are still impressive today.[2] We were decorating our bodies, playing flutes, and communicating abstract thoughts in complex languages. They were not. It is then no surprise that it was us and not them that went on to domesticate animals, cultivate grains, forge tools, coins, and weapons from metal alloys, fell great forests, invent systems of writing, build civilizations,[3] split uranium atoms and fuse

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[1] One good survey of the data and its interpretations is found in the second edition (2015) of Fazale Rana's book *Who was Adam? A Creation Model Approach to Man*.

[2] In Werner Hertzog's documentary film *Cave of Forgotten Dreams* (2010) shows an example of impressive artwork on a cave in France. In it Hertzog mentioned the fact that Pablo Picasso, the famous painter, visited the Cheuvet cave in 1940 to see the artwork and remarked, "we have discovered nothing." The paleolithic artist, presumed to date back to 30,000 years ago, was creating art that was no less "evolved" than attempts of modern art.

[3] Not every one of humankind's 6,000 or so people groups "progressed" past the hunter-gatherer phase and into agricultural, industrial, or technotronic phases. But this does not mean that groups that did not make progress were inherently less capable. Jared Diamond's argues in *Guns, Germs, and Steel* (http://www.pbs.org/gunsgermssteel/) that the reason for this disparity is certainly not one of evolutionary inferiority of various races. It was rather the fact that some people groups had the right climate and natural resources (like copper, tin, iron, horses, wheat, barley, etc.) to allow them to move from a hunter-gatherer existence to the pastoral and farming lifestyles which produce a surplus of food, a larger workforce, and a chance for technology to start to evolve. The Mesopotamians, Egyptians, Chinese, Greeks, Romans, Indus Valley peoples, Arabs, Mayans, Incans, and Aztecs are some of the obvious examples of civilization building peoples. But any people group on earth could have and would have had the mental problem-solving, tool-making, and technique-making minds to do the same type of thing if the natural resources around them had permitted them.

hydrogen atoms, rocket to the moon and back, arrange silicon and gold on circuit boards to do our calculations for us, probe the edges of the known universe with great telescopes, collide subatomic particles together just to see what happens, clone animals, and start to connect pretty much everyone and everything in the world by wire or by wave into the "Internet of Things."

Today we are learning to assemble amazing new materials and simple machines on molecular and even atomic levels. Also, we have begun to begin to crack the genetic codes found in the cells of every living thing. As we begin to learn this great programming language, we are learning to debug and reprogram those codes. We're on the cusp of being able to redesign life, redesign our bodies more and more to our own specifications, and perhaps even someday in the not too distant future we may create new forms of synthetic life. What is clear for now is that we are beginning to attempt feats that until recently were strictly relegated to the domain of the gods.

So, yes: we are powerful. Frighteningly so. But are we *wise*? We have heard the maxim "*with great power comes great responsibility"* so many times that it has turned cliché. But has progress of the development of our tech outpaced the progress of our ability to think and act responsibly? And do we even know anymore who we are responsible to? Yes, for the moment we can pat ourselves on the backs for somehow managing to not launch the 15,000 or so nuclear missiles we have aimed at one another. That surely counts for something, right? But those missiles are still there, poised, and ever ready to force humanity to start over. So perhaps we shouldn't pat ourselves on the backs quite yet. As the human population on our planet starts to near 10 billion souls, as tensions build, as concerns mount over melting glaciers and rising coastlines, dwindling aquifers and expanding deserts, collapsing fisheries and the extinctions of more species, the depletion of fossil fuels, the rise of mystery diseases, will our measure of wisdom be equal to the challenges? Our technical wisdom is evolving while our ethical wisdom has been devolving. Of course, all of our history books show that we almost always fail to showcase the moral *sapentia* that we *homo sapiens* should have. Only a true miracle from Above can fix that problem. We however have been making matters worse by educating ourselves into moral

imbecility. The human flock has been grazing in the fields and drinking from the streams of -isms that lower our moral IQ—agnosticism, materialism, modernism, naturalism, post-modernism, relativism, secularism, skepticism, and subjectivism. Somewhere along the way, it seems philosophy turned into anti-philosophy; the love of wisdom shifted into the disdain for wisdom. This in turn has contributed greatly to the decrease in our collective ability to discern, to discuss, and even just to imagine what should and should not be done with the tools and weapons we hold in our hands.

With their focus on the technological horizon, many warn about a tsunami speeding towards us. It's one of those sneaky things that is hard to see but changes the landscape when it arrives. As many powerful technologies are unleashed, ethical dilemmas are unleashed with them. Where should those technologies be applied? Should they be applied at all? To whom and in which ways should they be applied? Ethically speaking, we are, to borrow a phrase from Captain Kirk, boldly going where no man has gone before. The plot thickens. While our tech is on the rise, our ability to think and act ethically has been suffering great decline as traditional Christian philosophy and ethics continue to be forgotten, watered down, and marginalized. Many of the movers and shakers realize that we are rushing in where angels fear to tread. Some sound pensive when they talk about the great choices we're being forced to make. Others—hopefully a minority—seem a little too thrilled about the prospect of the coming tech-driven revolution. These are exciting times! But this is not a time for thinkers in the historical, evangelical Christian tradition to retreat into silence. Now is a very important time to inject more sobriety, insights, guidelines, some salt, and some light into the global conversation.

I will now attempt to give some glimpses of where we're at, where we're headed, and some of the ethical challenges raised. Before I do I will offer one helpful mnemonic: GRAIN. G -R -AI -N stands for Genetic engineering, Robotics (and bionics), Artificial Intelligence (and Information technologies), and Nanotechnology. Not all emerging technologies fit neatly into these categories but these are the categories that tend to get the most attention.

Genetic Engineering & CRISPR/Cas9

CRISPR/Cas9 was the thing that most alerted me to the idea that what was dismissible in the past as mere fantasies of science-fiction writers had become a very sobering reality today. In 2012, it first proved to be a viable technique for tapping into the awesome technology that the Designer of life seems to have put into the cells of bacteria, plants, animals, humans, etc. It taps into a piece of the immune system which was designed to remember, recognize, and remove threats like viruses. To give credit where credit is due, humans did not invent CRISPR\Cas9. Two bright scientists just started to figure out techniques and technologies to tap into the advanced cell technology that was already there. Cas9 is a protein—a type of nanotechnology so amazing that only a very intelligent and purposeful Designer could have put into our cells.

Allowing for some oversimplification, our Cas9 technology allows us to remove snippets of genetic code that we might want to remove and to add snippets of code that we might want to add. You tell it what code to search for. It reads strands of DNA and finds that code snippet. When Cas9 finds it, it cuts it out with little molecular scissors and replaces it with the code snippet that you instructed it to replace that segment with. Tantalizing possibilities, right? It is taking genetic editing to the next level because it is far more precise, far more efficient, far more successful, and considerably less expensive than all the other genetic editing techniques of the past. Some have compared this quantum leap in gene editing to the move from mechanical typewriters to the electronic word processors with cut-and-paste functionality. Somehow it did not win the Nobel Prize in 2016. It came in second—a close second. The prize went to the three men who fashioned the world's smallest human-built nanomachines using molecular physics. As impressive as these primitive man-made nanomachines may be, they pale in comparison to the nanomachines (such as Cas9 protein) that God put inside of us.

On the positive side, CRISPR/Cas9 is being used in many admirable ways. It is chiefly being used today to try to edit out harmful genetic mutations and other inheritable snippets of code that lead to undesirable and seemingly abnormal conditions like cystic fibrosis, sickle-cell anemia, muscular dystrophy, Huntington's disease, and genes that tend

to lead to cancers. It seems like Cas9 technology just might be able to do that. Imagine a world where all the inheritable diseases are just a memory!

There are so many news headlines for CRISPR that it's hard to keep up. There were many headlines this month that indicated Cas9 may be getting close to making it possible to transplant vital organs from pigs to humans.[4] If this works out, it would help alleviate the great problem of a global shortage of organ donors. That, in turn, might even help solve the terrible problem of organ trafficking. China, for example, has a huge business of harvesting kidneys, hearts, livers and such from political prisoners they farm and slaughter.[5] These victims tend to be "prisoners of conscience" such as Christians from unregistered house churches, Tibetans, and especially the Buddhist Falun Gong sectarians. Not to be outdone, in the U.S., Planned Parenthood has a very lucrative business of harvesting and selling organs, tissues, and miraculous fetal stem cells from the 300,000 or so babies they surgically dismember every year. (And they still somehow get funding from our tax dollars too!) As exciting as this prospect is to humans, for those of us who wonder if there might have been a health-related reason that Yahweh forbade his chosen people from ingesting pork, there is room to at least wonder seriously if there might be a reason to not want to transplant pig organs into humans.

Just a few days ago, some talented geneticists from a university in southern China announced that they were able to successfully repair 10% of the deleterious mutations in six viable human embryos.[6] And, yes, by "viable embryos" I mean small babies that, if left alone, would continue to develop into adults. On the positive side, they're making unprecedented progress towards fixing a big problem. 10% may sound small but it's far more than the 0% track record of the past. They are working to eradicate several inherited blood diseases. Imagine a world with no inherited blood diseases! In and of itself, this

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[4] Karen Weintraub, "CRISPR May Speed Pig-to-Human Transplants," *MIT Technology Review,* March 16, 2017. https://www.technologyreview.com/s/603857/crispr-may-speed-pig-to-human-transplants/

[5] See http://endorganpillaging.org/an-update/ and http://www.stoporganharvesting.org/.

[6] Tang, L., Zeng, Y., Du, H. et al. Mol Genet Genomics (2017). "CRISPR/Cas9-mediated gene editing in human zygotes using Cas9 protein" https://rd.springer.com/article/10.1007%2Fs00438-017-1299-z

progress is exciting and praiseworthy. But six embryos were fertilized, experimented upon, and destroyed in the process. That's the loss of six human lives. Not potential humans. Not pre-humans. But actual humans—like you and me, like we once were.

For those who subscribe to the philosophy of utilitarianism, this was an ethical win. It's good to trade the lives of a few unwitting heroes for the sake of "the greatest happiness for the greatest number of people." One small loss for man, one giant leap for mankind! But for those of us who believe that every human of every size matters, and that in a real way the humans who cannot defend themselves are even more important to defend than those who can, this victory is very difficult to celebrate.

There is a lot more to this Chinese victory than the loss of just six victims. A Rubicon has been crossed. You see, in the past, these researchers were performing their experiments on unfertilized eggs (which cannot, if left alone, develop into humans) and embryos which could not have developed into baby humans if left unmolested. They were trying to do their work without being guilty of snuffing out human life. What they just proved to the watching world is that experimenting on genetically complete humans is more likely to succeed while experimenting on nonviable embryos is likely to fail. We didn't know that before. Now we do. China is the most progressive nation here. And so, it is no surprise they're making the most progress into learning to tweak the genome. (Arguably they are also making the least amount of progress in human rights.) Nations like ours that chose a more conservative path have fallen behind. "Bioconservatives" will be increasingly maligned as obstacles to progress for obvious reasons. And now you see why the title of my paper is "Against the GRAIN." Bioconservatives can work for progress, sometimes going with the grain, but often we may be the only ones who dare to go against the grain.

The possibilities with Cas9 are tantalizing, exciting, disturbing, and innumerable. There is tremendous potential for good here—and for evil too. Imagine, for example, the next time someone wants to have a baby, they select a "designer baby" from a catalog—no inherited diseases, no congenital defects, higher IQ than average, taller, more creative, DNA from not just two but perhaps ten different donors, a certain skin color—or even glow-in-the-dark skin pigmentation from a non-human species if you want. Could it be that in our

lifetimes we may see a new designer baby industry arise where labs create millions of embryos with every eugenic permutation imaginable, keep them frozen until ordered, and then incubates them in artificial womb technologies. Labs are already sequencing the genomes of thousands of the world's most impressive people in the attempt to identify genetic permutations for high intelligence quotients and other desirable traits.

A great concern here is that we don't know what is possible yet and as a consequence we will end up learning through copious amounts of trial and error. The abortion debate is taking on new layers and will take many more embryonic human victims than ever. Instead of talking about millions of abortions, like we are today, we'll be talking about billions. Billions of lost humans in the name of the greater good as we learning what various genetic combinations express themselves in the real world.

Robotics and Bionics

In Luke chapter 7, John the Baptist asked Jesus if he was the one or if he should look for another. This was not John doubting Jesus—his question was predicated upon his hearing about all the miraculous signs Jesus was doing. I think John was just seeking clarification. Echoing the prophet Isaiah, Jesus answered John saying, "the blind receive their sight, the lame walk, lepers are cleansed, the deaf hear, the dead are raised up, and the poor have good news." How does today's technology stack up against Jesus? Well, today robotic exoskeletons are allowing some paraplegics to walk. More than one athlete has competed in the Olympic summer games with artificial lower legs. For $50 a decent prosthetic arm can be manufactured on a 3-D printer. And for $20,000 a surprisingly impressive robotic arm can be custom-taylored. Bionic touch sensors can even be wired into the central nervous system. Brain-to-Machine interfaces are allowing people who are paralyzed from the neck down to control robotic arms with brain waves. Some robots can now sew up incisions better than the best surgeons can. Cochlear implants are helping some deaf people to hear. Some blind people are able to gain some sight with electronic eyes. The quality of such sight is not very impressive yet, but it's a decent start.

Robots are taking more and more jobs—even at the fast food restaurants. A recent report says that six human jobs are eliminated for every robot introduced into the workforce and one robot per thousand workers also reduces the wages of the humans by 0.35 to 0.5 percent.[7]

They'll soon be growing all of our food for us too. Perhaps when there is an abundance of food for all that will that will be good news for poor. They won't have jobs, but they'll have food and a guaranteed welfare income. The technology of today still cannot compete with the miraculous healings of Jesus. But it is still somewhat impressive and looks to be more impressive by the day—especially as nanotech continues to revolutionize robotech. It is not surprising that some are starting to wonder seriously if someday it might actually be better to have bionic limbs than our natural limbs.

Artificial Intelligence / Singularity

In 1996 IBM's supercomputer Deep Blue was evaluating 200 million chess board positions per second to outmatch the world's top human chess champion. In 2011, IBM's Watson used its tremendous ability to intelligently sort through "big data" in order to triumph over the two top human players of the trivia game Jeopardy. Watson is now revolutionizing several industries where the amount of information is too great for any team of humans to deal with effectively—medicine, economics, law, military warfighting, advertising and marketing, and more.[8] Google's DeepMind Technologies division developed the AlphaGo program to use a neural network for the sake of learning to play games much like humans do. In 2016, AlphaGo, powered by Google cloud computing, won five out of six matches of the Chinese game Go—a game which is far more complex than Chess—against

[7] Daron Acemoglu and Pascual Restrepo."Robots and Jobs: Evidence from US Labor Markets." NBER Working Paper No. 23285. The National Bureau of Economic Research, March 2017. http://www.nber.org/papers/w23285

[8] Tangentially, in 2016, I actually asked IBM if they would consider letting me help them upload all of Dr. Norm Geisler's 100 (or more) books and hundreds of articles into Watson so we could have artificial intelligence answering tough philosophical, apologetic, and theological questions just like Norm has over the last sixty years. Unfortunately, they didn't respond. But a team in Hong Kong expressed interest in 2017 for doing this with an AI system in preparation for a 2018 Christian apologetics conference.

one of the top three human players. These are examples of "weak AI" or "narrow AI." They are just powerful calculators that do the narrow tasks that their programmers tell them to. They're not intelligent—they just run on intelligent algorithms produced by intelligent humans. But what happens as multiple narrow AI programs become intertwined into a not-so-narrow form of AI? Even if the result is not the same as human intelligence, will we be able to tell the difference?

Weak AI is already changing everything and getting into everything. It's in the smart-phones, the GPS systems, weather forecasting systems, and the search engines we use every day. It's starting to be used in self-driving automobiles. Who knows how many experimental weapons systems DARPA is writing it into? And just how does that fit into just-war theory anyway?

We are already building supercomputers that operate at mind-boggling 100-Petaflop speeds and we're starting to design them to do their calculations more like the human brain does its calculations. Nanotechnology promises to push the circuits to faster and more powerful levels. Quantum computing may start to use principles of quantum mechanics to do its calculations—only with more unpredictability. Some experts believe that the artificial intelligence we are pouring into these machines is evolving so quickly that by the middle of this century collective intelligence of the artilects will have greatly surpassed the collective intelligence of us. With superior intellect, the artilects will start designing and programming themselves in ways we mortals can barely fathom. If so, will we have created a god-like posthuman lifeform? And will we become one with it in the procession from human to transhuman to posthuman? This future is difficult to predict. But as the number of distractions and entertainment options increase, most of the world's eight billion humans are getting dumber while the machines that serve us are getting smarter. How long will it be before we are serving the machines?

Nanotechnology (skipped)

[For the sake of time I'm going to skip nanotechnology. I have already touched on it in a few places.]

Concerns

I will mention just a few of my main concerns.

For many, the Technological Gospel is a gospel for a competing Messiah

The church does have a social responsibility to this world. But the original mission of the church in the world was **not** primarily one of social change. The Apostle Paul was a Roman citizen who never tried to start a social crusade among early Roman Christians to end slavery or oppose any of the other many evils the Roman Empire was guilty of. He wasn't preaching a social gospel: he was instead preaching the good news about what Jesus Christ has done for us in his crucifixion and resurrection. In the same way, as an evangelical, I am primarily concerned about the *evangellion*, the good news, the gospel—the same gospel that the Apostle Paul preached. My desire to help the world be a better place for all the peoples of the earth is sincere and serious—but also secondary. Let's not forget that the gospel isn't just about believing in Jesus so you can go to heaven when you die. The gospel Paul preached is heavy on the hope of the resurrection of the dead[9] and even touches at times on the redemption of the entire cosmos. The gospel of human progress and salvation through technology is a competitor that is growing in popularity among many humanists, transhumanists, and posthumanists. They have their own answers to the problems of natural and moral evil, the curses on the land and upon childbirth, the problems of frailty, aging, and physical death. Their answers invariably rely upon the application of a combination of human technologies.

Their gospel, their narrative of hope, their vision of progress, is being spread globally by Hollywood movies. The science-fiction genre is a tremendous vehicle for propagating a secular humanist worldview with occult undertones. It also has a powerful way of winning hearts to their vision. Think about this: Of the top twenty highest-grossing films in history, how many glorify at least one transhumanist/posthumanist aspiration? Eleven. (And I fully expect a ratio of fifteen out of twenty in the near future.) At the number

[9] See especially Acts 23:6 and Acts 24:15 where Paul explains that his hope and the hope that he preaches centers around the bodily resurrection.

one spot is the 2009 movie Avatar, a film of pure transhumanist propaganda which earned $2.9 billion in box office sales. Film is dangerous because all too often "seeing is believing." It's difficult to compete with the visual magic of computer generated imagery in a world. And when my children are finished with their school work on Friday evenings, they would all much rather watch the latest thrilling transhumanist propaganda film from the Marvel Studios than ask to watch, for example, Saville's film *The Gospel of John*.

Socio-political Control / Totalitarian Technocracy

When I see the trajectory we passengers are taking, I cannot help but think that while we're buying into a better world through technology, what we're really going to end up with is a world where everything—and I mean do mean everything—is controlled through technology by technocrats.

In 2015, Zoltan Istvan, drove his coffin-shaped "immortality bus" across the United States to draw attention to his bid for the US Presidency. He was the first candidate from the Transhumanist Party. Do you know what his first step to become transhuman was? He had a Radio Frequency Identification (RFID) chip implanted into his left hand. There is something very profound here. When you're trying to figure out what transhumanism is, keep in mind that one of its biggest spokesmen shows that it starts with getting chipped.

On one hand, there are some potential advantages to having a relatively trustworthy identification device integrated into the body. It can establish the trusts that allow for ease of passage through security checkpoints in airports, for example. This began happening in the Netherlands in 2016. It can replace your credit card, your cash, your mechanical keys, your passport, your driver's license, etc. It might help prevent identity theft—or it might encourage it. It could be used to find lost children and rescue the victims of human trafficking.

On the other hand, consider how RFID chips have mainly been used in the last ten years. They have been used track and control farm animals on farms, shipping containers on ships, and packages being shipped in trucks from warehouse to stores, and

transportation on toll roads. There are rumors that some victims of human trafficking are managed with the help of subcutaneous RFID chips. It is not difficult for some to connect the dots in our imaginations of how RFID chips could be used for social control in the same way that the Revelation 13's famous "Mark of the Beast" is used. We cannot say that information technology (such as RFID chips) could never be used for nefarious purposes like totalitarian social control and genocide. It already has. Between 1933 and 1945, Nazi Germany used IBM consultants to create the analog information system technologies that would enable the Nazi's to catalog, trace the ancestry of, identify, select, register, arrest, move, imprison, and ultimately incinerate thirteen million or more Slavic and Jewish people.[10]

Brain-to-Machine Interface (BMI) technologies[11] lead to one of my greatest concerns. Hollywood has made them seem desirable in movies like the Matrix (1999), Avatar (2009), and Transcendence (2014). Just this week, visionary Elon Musk launched a cutting-edge company named Neuralink with the aim to integrate human brains with computers.[12] Musk is concerned that our unassisted brains will not be able to compete with the AI artilects of the future. And if you can't beat them, you have to at least meet them half-way, right? But consider some of the potential problems that could occur when brains are wired to either a private cloud or the Internet of Things. Imagine social control using the methods of BF Skinner and Ivan Pavlov. You can never run, you can never hide, and your central nervous system can be "tazed" when deemed necessary for the wellbeing of the State. Also consider matters of privacy and hacking. In a world where we have RFID chips in our flesh and BMI chips integrated into our central nervous systems, we are at the mercy of the system. And not all systems are merciful.

What if the wisdom of this age concludes very simply that we are our own worst enemy? Is the compass needle not already pointing in that direction? Are not some

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[10] Edwin Black, *IBM and the Holocaust: The Strategic Alliance between Nazi Germany and America's Most Powerful Corporation*. http://www.ibmandtheholocaust.com/

[11] Alternatively referred to as Brain Computer Interfaces (BCI).

[12] https://www.wsj.com/articles/elon-musk-launches-neuralink-to-connect-brains-with-computers-1490642652

professors teaching that humans are to Mother Earth as pathogens are to us? Isn't man-made climate-change the core of the green gospel? If so, the logical, necessary, and optimal recourse, for the sake of the greater good, and for the sake of the survival of all life on earth, is to use the power of our technology to control every member of the human herd in a system of technocracy that is global in scope and totalitarian in depth. As a prerequisite to achieving this level of herd control, either the herd will naturally cull itself (in rather inhumane ways) or it must be culled by the elite in controlled and "humane" ways. Regardless, the population must be reduced from nine billion humans to perhaps one billion[13] for the sake of gaining that winning chance of returning to a sustainable biosphere. This is prime time for eugenic strategies. Those deemed best, brightest, most beautiful, superior, and subservient will be spared. They will become the foundation of the newer, better, smaller herd in the renewed and sustainable world. They will inherit the kingdom. Then, with the help of artilects, robots, and bionics this purified human race will we be ready to take the next steps of guided evolution and exploration. They can be the ones to get serious about travel to other solar systems and colonize new planets.

Even if this dismal vision of our future is eventually proven to be an overshot, the fact remains that dozens of powerful technologies are incubating now. Some are already beginning to hatch. And they all have the potential to profoundly affect the cells of our bodies, the neurons and synapses of our brains, the warp and woof of our societies, and the habitability of our biosphere.

While I don't agree with Aldous Huxley on much, I can't help but wonder if some of his predictions for a dystopian future were prescient. For example, he predicted, "People will come to love their oppression, to adore the technologies that undo their capacities to think." In a speech given at Berkeley, he elaborated:

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[13] Dr. Eric R. Pianka, a professor of biology at the University of Texas at Austin, became famous in 2006 for giving a speech to the Texas Academy of Science that said the world would be "better off" if 95% of the world's population were exterminated. He suggested an airborne distribution of a genetically modified ebola virus as one possible method. Similarly, the granite monument known as the "Georgia Guidestones" recommends as its prime directive, "Maintain humanity under 500,000,000 in perpetual balance with nature."

> There will be, in the next generation or so, a pharmacological method of making people love their servitude, and producing dictatorship without tears, so to speak . . . Producing a kind of painless concentration camp for entire societies, so that people will in fact have their liberties taken away from them, but will rather enjoy it, because they will be distracted from every desire to rebel, by propaganda or brainwashing, or brainwashing enhanced by pharmacological methods … and this seems to be the final revolution.

Similarly, we are in danger of creating a society of societal drop-outs. Technology may be creating generations of vidiots who stare at little screens, medium screens, and big screens all day, every day. The internet has changed everything. Now there are more Massively Multiplayer Online Role Playing Games (MMORPGs) than I can count. For some people these games are even more addictive than drugs and more important than eating and sleeping. Some people wear adult diapers so their play cannot be interrupted! One analyst estimated that between 2004 and 2010, the 11 million registered users of the game called World of Warcraft collectively spent nearly six million years playing the game. The same online game now has over 100 million lifetime registered users. Others online MMORPGs have 400 million, 310 million, 200 million, etc. It's huge in the United States and an even bigger deal in China and South Korea. It is not unusual for kids to have invested 10,000 hours in online gaming by the time they turn 21. That's the same number of hours they spend in school classrooms between 5th and 12th grade. That's the same number of hours generally considered to be required to become a true expert in any given skill or field. Every year these computer game technologies become more impressive. For some people they begin to feel more real than reality itself. And for many life in these online games is much more pleasant, adventurous, exciting, edifying, or safe than real life. The real world feels disappointing; the game world is more rewarding. Degree by degree we are dropping out of the real world and living in virtual worlds. In a way, the hope of uploading our minds into virtual realities has already begun to come to pass.

Radical Life Extension / Longevity

It has been said during the first half of our lives we spend all our health to get our wealth and then, throughout the last half of our lives, we spending all our wealth to try to

get back some of our health. Interestingly, the infamous David Rockefeller died just a few days ago. He was the 49th richest person in the world and arguably the most powerful man in the world. He used medical technology to help him live to the age of 101. He had seven heart transplant surgeries!

Now let's suppose that when I reach age fifty I decide that I'm not ready to die at age 80. There are too many online games to play and too many movies to watch, or whatever. I deserve a do-over! I can get several rounds of stem cell therapy from aborted babies to begin to get a second wind. I could also pay for blood transfusions from young children. Although it sounds a little vampiristic, the blood of the young was proven in 2015 to be a fountain of youth for the old.[14] And of course, there is hormone replacement therapy. If I had enough money, I could pay to have myself cloned. Cloning works great with animals so it should work fine on humans too. The fact that some people are born with an identical twin is a proof that natural human cloning can and does happen. I could pay to have a genetically identical copy of me can be raised in an artificial womb after using Cas9 in its early stages of development to remove harmful mutations and modify some of my traits. My new body would be healthier, taller, stronger, faster, etc. At the age of sixty-six my "consciousness" then could be uploaded to my 16-year old clone body with the help of brain-to-machine interfaces. If that doesn't work, we can surgically transplant my cerebellum, cerebrum, hippocampus, and such from my old head into my clone's head.[15] Consciousness and mind exist in the brain, right? *Right?* Even if that doesn't work, I can harvest my twin's organs when I need them. (Hey, it's my body so I can do whatever I please with it, right?) Failing that, we can try to upload my consciousness into a private computer cloud like as depicted in the 2014 film Transcendence. Alternatively, I can have my body frozen while I wait for technology to eventually get to the point where I can be

[14] http://www.nature.com/news/ageing-research-blood-to-blood-1.16762

[15] The first published attempt to transplant a human head is set to occur at the end of this year. Italian neurosurgeon Sergio Canavero is set to attempt the surgery, with the help of 150 other doctors, in December 2017. Dr. Xiaoping Ren will be assisting and he has supposedly performed successful head transplants on at least one mouse and at least one monkey.

thawed, revived, and upgraded. Here in Texas, a large cryogenic storage facility is being built which should hold 50,000 frozen bodies.[16]

I trust that several yellow caution flags and a few red flags have been raised here.

The Need for a Statement

Where is the wise man of this age? And where is the church? So far, the churches and the Christians have been mostly silent over these concerns. Even the Roman Catholic Church has not bothered to make a statement on these matters yet. There are a few bio-conservatives writing blogs from either traditional Catholic or traditional evangelical perspectives. But there are also several blogs from progressive Christian perspectives (such as the in the Christian Transhumanist Association) which often lack continuity with the core of the original Christian doctrinal deposit.

My first reason to hammer out and publish a formal statement is that the Church should not be silent. Edmund Burke's point that "the only thing necessary for the triumph of evil is for good men to do nothing" is hard to argue with. So is C.S. Lewis' insistence that, "good philosophy must exist if for no other reason because bad philosophy needs to be answered." If we are the stewards of good philosophy and good ethics, don't we have some obligation to answer bad philosophies and bad ethics? Although the mission of the Church in the world is **not** to push its moral leadership upon the world, the church remains, as Paul says, the "pillar and foundation of the truth." If Christ's followers are supposed to be salt and light for the world, we should be saying and doing something. It also seems that the Church should also give a prophetic voice to each generation—even if that voice is spurned.

We apologists all know that we are supposed to "always be ready to make a defense *[apologia]* to anyone who asks you for a reason for the hope that is in [us]" (1 Pet. 3:15

[16] The Stasis Foundation is building "the Timeship" in Comfort, Texas. http://www.timeship.org

ESV.) Maybe they world is asking us about our hope and we are not hearing them. The apostles, evangelists, prophets, shepherds and teachers of the technological humanist gospels are selling hope in human technologies to save us from all our problems. We have a better hope. Again, it's not just a simple hope of going to heaven when we die. It involves justification (salvation from the guilt of sin) now, sanctification (salvation from the power of sin) throughout our lifetime, and a later glorification (salvation from the presence of sin). This hope has a basis in fact—the resurrection of Jesus. The world needs hope. Perhaps if we articulate our hope more intelligently, creatively, and boldly, our competitors who are attempting to steal and secularize our hopes will have less competitive power.

There is much good that tech can help us accomplish. I'm generally for it. But when Tech is made into another gospel, and another Messiah, or when it suppresses or darkens the knowledge of God, we have another front to fight on. Tech-ethics is one front—one escalating front—of a war that we are in. 2nd Cor 10 says "the weapons of our warfare are not of the flesh, but we have divine power to destroy strongholds. We destroy arguments and every lofty opinion raised against the knowledge of God. . ." Whenever this happens, we should ask God for his divine power and head towards that front.

Second, there may be a real opportunity for Christian ethicists be heard here. The scientists who invented CRISPR and those who use it are keenly aware that we are shaping history, changing the future of human race, and are rushing in where angels fear to tread. On some level, some of them wish for guidance. One of the professors from Southern Evangelical Seminary who attended a DARPA conference told me that there is a real interest in hearing a conservative Christian viewpoint on the ethics of emerging technologies. Some were saying, in essence, "Shame on you Christians for not educating yourself on these matters and weighing in with your voice. We expected better of you. Why aren't more of you contributing your voice to these important decisions?"

Third, even if the humanists ignore, suppress, and marginalize our viewpoint, it still may have a positive impact on a few individuals, a few laboratories, or a few nations. It can make a difference. Consider Galatians 6:9-10 which challenges us to, "not grow weary of doing good, for in due season we will reap, if we do not give up. So then, as we have

opportunity, let us do good to everyone…" If we can make a statement, we can send it to libraries that collect statements on ethics.[17] Even if nothing happens in our generation, you never know who might search those archives later and cry "Eureka!" Even if our voices seem to go totally unheard, consider 1st Peter 2:12, which says, "Keep your conduct among the Gentiles honorable, so that when they speak against you as evildoers, they may see your good deeds and glorify God on the day of visitation." There is an opportunity here to provide guidelines and insights that help Bible-believing Christians to do good and to help keep *our* conduct honorable. In the process, we may also be a force for good that benefits everyone.

Fourth, as suggested earlier, this is not less than an extension of the abortion debate. I predict that the number of terminated human lives will skyrocket as we start to perform millions of genetic experiments on embryos in the attempt to understand which genetic code hacks produce interesting results. We will have to learn by trial and error until AI can start to reliably do accurate modeling for us. For the sake of the unborn and for a clear conscience, we need to at least say something.

Fifth, the post-Christian philosophers and ethicists are at an unfair disadvantage. Let's not forget that they are capable of making some wise and ethical judgments. They still have the light of conscience spoken of in Romans 2—even if it has been seared to some degree. Although they probably deny moral absolutes with their lips, they still operate on them on some level, even if inconsistently. They still know they should operate on something like the "categorical imperative" or the "the golden rule." And they still have the benefit of the echoes, shadows, and the momentum of 2,000 years' worth of Judeo-Christian traditions. But the secular ethicist is still like a one-legged competitor in a kickboxing tournament. It's not that he doesn't have a leg to stand on—he does. He has one leg. But he's still missing the second leg that a true competitor needs. He isn't truly familiar with the written revelation of God and he certainly won't stand upon it. He doesn't have the

[17] The Ethics Education Library, for example. http://ethics.iit.edu/eelibrary.

manual from the Manufacturer, so to speak. Nor does he know how the story ends like we do. So maybe we should have some pity on them and try to help them out a bit.

Sixth, the precedents set by the International Council on Biblical Inerrancy are encouraging. The three statements they made over the span of ten years really did make a positive difference in the world. The men and women of ICBI were somehow able to find consensus on many tough questions despite being from different denominational and non-denominational backgrounds, despite some being Arminians or Calvinists, Premill or Amill, Young-Earth Creationists or Old-Earth Creationists. I am actually one of just two people who has examined the ICBI archives that are housed in a storage room in the library at Dallas Theological Seminary. Thumbing through four of the twelve big boxes enabled me to get a glimpse at some of the behind the scene stories. Interestingly, in the beginning of the second council—the one on biblical hermeneutics—there was a real concern that the group would not be able to find a consensus on hermeneutics because on matters of eschatology some were consistent literalists and some were not. Later they were very pleasantly surprised that they were able to get past their many differences and find a consensus. It seems like we should be able to do something like they did. I'd like to suggest that we begin to work towards creating something patterned after the third ICBI statement, the Chicago Statement on Biblical Application. I'd also recommend that we eventually try to limit the signers of our statement to thinkers who agree with the Chicago Statement on Biblical Inerrancy (CSBI), Chicago Statement on Biblical Hermeneutics (CSBH), Chicago Statement on Biblical Application (CSBA),[18] and the Danvers Statement from the Council on Biblical Manhood and Womanhood (CBMW).[19]

Seventh, even though it's a really tough task, I think we can do it—we can create something of value. True, we can't answer every question or confidently solve every dilemma. We can't be exhaustive. But we should still be able to eventually provide some

[18] See Sproul and Geisler, *Explaining Biblical Inerrancy: Official Commentary on the ICBI Statements* (Matthews, NC: Bastion Books), 2013. http://www.isca-apologetics.org/sites/default/files/Explaining-Biblical-Inerrancy.pdf

[19] "The Danvers Statement." June 26, 2007. http://cbmw.org/uncategorized/the-danvers-statement/.

good guidelines and parameters. What took the ICBI thousands of dollars in plane flights and hotel bills to accomplish might be something we can accomplish remotely for pennies using technology. Maybe we can start to assemble a team of thinkers, bounce ideas off one another, let iron sharpen iron, see what we agree on, and eventually publish some helpful guidelines.

Eighth, our philosophy of mind is going to prove more correct than theirs. Some of the biggest problems in the secular humanist, transhumanist, and posthumanist schemes arise from their naturalistic and reductionistic view of mind. Mind is to brain as smoke is to fire. The mind is nothing more than function of a highly-evolved machine. But 21st century neuroscience seems to be saying something different. It is starting to sound like the true students of the brain are realizing that mind, soul, or consciousness, cannot be explained away as just the operation of electro-chemical "wetware." If I'm right, there is great opportunity here for apologists to use this as a bridge. And in recent years there has been a resurgence in many of the philosophers who focus on the problem of mind or the problem of nature in Thomism. It may just be that the hylomorphic dualism of Aristotle and Aquinas may be fitting the insights from neuroscience better than any other theory. So let them try their best to transfer consciousness from one brain to another or from a brain to a neural computer. They will be disappointed. And as they scale the mountain of ignorance and begin to pull themselves up over the top ledge, we theists reach down and offer them a helping hand up.

Ninth, no one is going to listen to me by myself. Maybe no one will listen to any one of us by ourselves. But if we can assemble a multi-disciplinary team, put some real effort into it, and come to a consensus, and publish a statement that shows an informed, thoughtful, reasonable, and distinct approach, I think others will be more inclined to take it more seriously.

Who?

It is natural to start with the International Society of Christian Apologists. There are scholars and thinkers from many backgrounds who champion our reasonable faith and

practice faithful reason. ISCA is one of the few organizations that includes the Chicago Statement on Biblical Inerrancy as an extension of its doctrinal statement. In a time where many Christians are losing more and more continuity with the apostolic and historic Christian faith, this is an important anchor. Also, several thinkers in ISCA have already written papers, blogs, and chapters that fit in with this topic. The conversation is already well underway among us.

If you're interested in starting to work on a project like this—something that might eventually lead to the creation of a statement—or if you know someone who might want to participate in the discussions, what can you do? We can't just create a statement. We're not even sure what all the right questions are to be asking. Then there are a lot points and counterpoints that need to discussed. Realizing that this can be done inexpensively, I created a website running forum software. The website is http://acceptable.tech. As the name suggests, it's a place to attempt to address the question of which uses of which technologies are acceptable and which are not. Here ACCEPTABLE stands for:

A **C**onservative **C**olloquy on the **E**thics and **P**hilosophies

of **T**echnological **A**pplications to form **B**iblical and **E**vangelical Guidelines

I want to invite you all to participate in the forum and to invite other Christian thinkers who are interested in discussing these things.

This paper is adapted from several chapters in the forthcoming book by Norman L. Geisler and Christopher T. Haun, *Is Man the Measure: An Evaluation of Contemporary Humanism and Transhumanism* (Matthews, NC: Bastion Books), 2017.

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