Transhumanism and the Perfection Imperative

Should We Use Science to Make Ourselves More-Than-Human?

Zenit, 7 maart 2012

Here is a question on bioethics answered by the fellows of the Culture of Life Foundation.

Q: I recently read something about a current philosophy called "Transhumanism." Are you familiar with it and can you shed some light on what's problematic about it from the perspective of a Catholic worldview?

E. Christian Brugger replies:

The problem of "Transhumanism" is so critically important to understand, and so poorly understood, that I think the topic deserves more than a single column. I therefore address it here and in my next ZENIT bioethics briefs.

You might have seen the feel-good movie Captain America. It takes place during World War II. A patriotic fine arts student from New York City named Steve Rogers wants to enlist in the army. But the army won't take him because he's too scrawny. The recruiters tell him that they're doing him a favor by rejecting his application.

One of his interviews is overheard by a brilliant German scientist, now working for the Americans, named Abraham Erskine. Dr. Erskine is impressed by Rogers' tenacity and thinks he might make a good candidate for a secret military project named Operation Rebirth, intended to transform the bodies of U.S. soldiers into super-human fighting machines.

Rogers eagerly accepts the invitation to become the first U.S. test subject. He's strapped to a gurney and sealed in a pressurized chamber. He's injected with "Super Soldier Serum" and exposed to an almost lethal burst of "Vita-Rays," which activate and stabilize his biochemistry. The once scrawny adolescent emerges from the chamber with a physique like Arnold Schwarzenegger, in possession of a lean, muscular, maximally efficient — indeed, practically perfect — body.

Fortunately, Rogers also possesses unusually — indeed unworldly — sincerity, self-sacrifice and courage. As "Captain America" — so dubbed by his superiors — he goes on to perform deeds of heroism, which will delight all but the most cynical of audiences.

Although we find ourselves firmly on the side of Captain America in the movie, the comic book scenario raises one of the most intense debates facing the future of biotechnology, and indeed, of humanity: should we use science to make ourselves more-than-human, in the words of the president's Council on Bioethics, "better than well"?

What is Transhumanism?
In October 2004 the bimonthly magazine Foreign Policy published a special report with the title, The World's Most Dangerous Ideas. Eight prominent thinkers were asked to reply to the question: "What ideas, if embraced, would pose the greatest threat to the welfare of humanity?" Francis Fukuyama responded with an essay entitled "Transhumanism." By "transhumanism" he was referring to a current of thought, gaining prominence in the past fifteen years, committed to using science and technology to transcend the limitations of human nature. Scientific research traditionally has striven to overcome the effects of human disease and degenerative illnesses — purposes broadly therapeutic in nature. Transhumanism aims to move beyond therapy to enhancement. "Its

proponents," to quote one advocate, "argue for a future of ageless bodies, transcendent experiences, and extraordinary minds." The Transhumanist Declaration of 2009, posted by the World Transhumanist Association, says this: "Humanity stands to be profoundly affected by science and technology in the future. We envision the possibility of broadening human potential by overcoming aging, cognitive shortcomings, involuntary suffering, and our confinement to planet Earth."

Although we might be tempted to treat the futuristic musings of trendy transhumanists with benign neglect, I would argue that there are good reasons to take their ideology seriously.

The first reason is that although Transhumanism as an organized movement is still on the social margins its "fundamental tenet," Fukuyama notes, "is implicit in much of the research agenda of contemporary biomedicine." In other words, Transhumanism as a motivating idea is already alive and active amongst us.

For example, we see it in the agenda of reproductive medicine. 'Parents' interested in producing "superior children" are testing the limits of even the secular imagination. "Directed mating," as one might do with livestock, is now advertised at elite universities. For over a decade, ads have been run in the Harvard Crimson, the Daily Princetonian and the Yale Daily News offering up to $35,000 for egg donors with verifiably high SAT scores, with selected physical characteristics, and with notable accomplishments in sports. One ad in the Brown Daily Herald in 1999 offered $50,000 to "an extraordinary egg donor." And the Stanford Daily in 2000 ran an ad entitled: "Give the Gift of Love and Life", "Very Special Egg Donor Needed." It said she must be under 30 and Caucasian, and, it added, "proven college level athletic ability preferred." The compensation? $100,000 and "all expenses…paid."

Or the California sperm bank in operation for nearly 20 years, the Repository for Germinal Choice, that originally accepted donations only from Nobel Prize laureates; later it broadened its donor base to included non-Nobelists with very significant accomplishments. Apparently the company went belly-up around the year 2000.

These examples might sound fantastic. But the more commonplace practice of prenatal screening has been with us for decades. Amniocentesis (inserting a needle into the uterus and doing genetic tests on the amniotic fluid) and chorionic villus sampling (testing placental tissue) both aim to discover fetal defects usually with the intent of aborting the fetus if a defect is found: weeding out the weak and selecting the strong.

A form of embryo screening known as pre-implantation genetic diagnosis(PGD) is increasingly becoming routine for IVF users. Human embryos are created in the lab and grown to approximately the eight-cell stage of development. A technician inserts a tiny needle into the body of the embryo and removes one or two of his or her cells, called blastomeres. The cells, containing the embryo's DNA, are tested and information is secured, for example, the embryo's sex. A woman can then choose whether to have transferred into her uterus the embryo with the desired sex. Those with the wrong gender are discarded or frozen in liquid nitrogen.

PGD is also used to test for genetic diseases and defects such as Down's Syndrome, Cystic fibrosis and cleft palate. Embryos that test positive for any of dozens of disorders are selected out and discarded. As the sophistication of genetic tests steadily increases, an increasing number of embryos with disabilities will be screened out and destroyed.

Oxford bioethicist, Julian Savulescu, argues that generators of IVF embryos have an obligation to use information derived from genetic screening to select the child whom they believe is likely to have the best life. He thinks that if sperm and eggs could be produced artificially, and "scientists could scan a far larger number of embryos … this would allow couples to choose their 'perfect child.'" The consequent destruction of imperfect embryos is unfortunate, but, he argues, not unethical: "since the arguments … are so weak I see no reason to stop [destructive research]."

PGD can also be used to test for positive traits, screening for “desirable genes.” Presently this is rather rare and imprecise. But before many years the commodity will be common place. In 2009, the Wall Street Journal reported that a limited number of fertility clinics in the U.S. are beginning to offer to clients the option of selecting the physical traits of their children (so-called “designer children”). Though some IVF specialists are averse to using PGD in this way, others see no problems with the technique: “This is cosmetic medicine,” said the director of one prominent fertility clinic in California, “we have no problems with it.” As requests for specific traits become more detailed, more embryos will test negative, and hence will be discarded.

When combined with a test called tissue typing, PGD can also be used to select embryos that register a perfect tissue match with a sibling suffering from an existing disease. The so-called “savior sibling” is implanted at the embryonic stage of development and gestated till birth. His or her umbilical cord blood, chocked full of stem cells, is then harvested and transplanted into the suffering sibling. If that therapy doesn’t work, the possibility exists down the road for other types of transplants from the savior sibling (e.g., bone marrow or non-vital organs).

Selective reproduction is not the only way the transhumanist agenda is alive amongst us. We are all familiar with the problem of professional athletes using anabolic steroids to increase muscle mass or using other drugs (e.g., erythropoietin) to stimulate the overproduction of red blood cells to increase the oxygen-carrying capacity of the blood (called “blood doping”). Another example is the problem of healthy high school and college students taking prescription stimulant drugs (such as Ritalin and Adderall, ordinarily prescribed for problems such as ADHD) to improve their mental performance on exams. A 2009 national survey found that college students aged 18 to 22 are twice as likely as non college students to use Adderall nonmedically. The survey found that about 1 in 15 U.S. college students use prescription drugs for non-medical purposes. The number is still relatively low. But it is likely to increase. In the decade between 1990 and 2000 the annual production of methylphenidate (Ritalin) increased 730% and the production of amphetamine (Adderall) by an astounding 2,500%.

These all are more controversial uses of enhancement medicine. More mundane techniques such as Botox for ordinary aging, and tummy tucks (abdominoplasty), breast implants, lip enhancements, and buttock augmentations are treated as more commonplace.

We can see that the camel’s nose is already clearly in the tent.

Q: I recently read something about a current philosophy called “Transhumanism.” Are you familiar with it and can you shed some light on what’s problematic about it from the perspective of a Catholic worldview?

E. Christian Brugger replies:

I said in my first column on Transhumanism that there were several good reasons to sit up and take note of the current of thought. The second reason is that biomedical science is moving very rapidly and enhancement possibilities are multiplying at a startlingly swift pace. Ethics must keep pace with science. The question of whether our community sanctions this or that technique, or the enhancement agenda at all, cannot rest merely on whether things are technically possible.

A few examples of what’s coming might be instructive. Research is presently underway into the prospect of the genetic enhancement of physical strength (we’ve already mentioned muscle enhancement through the use of drugs). Science has identified the genes that regulate the proteins that mediate muscle growth. If we insert these genes, synthetically produced, directly into muscles we could stimulate the production of these muscle growth proteins. Or, we could introduce the genes directly into human embryos, created in the lab, with the

hope that they (the genes) would be incorporated into the functional genome of the growing person. Both types of insertion experiments have proved successful in studies with rats: muscle growth was increased in healthy adult rats and muscle decline was deferred in rats of advanced age.

Since we already treat elderly patients with drugs for increasing muscle mass and strength (a seemly legitimate therapeutic practice), why not enhance muscle strength through genetic engineering? Why not open these treatments to younger persons before they grow old in order to prevent or defer the effects of aging, called in the literature “age retardation”?

This raises the question of the morality of life extension research? Is trying to extend the human life-span intrinsically problematic? Certainly not. In 1900 the average life-expectancy at birth in the U.S. was 48 years. In 1999 it had increased dramatically to 78. Most of that increase was due to the decline in infant and child mortality during the first half of the 20th century; it was also due to the rise of effective transplant medicine at the other end of life.

But more radical proponents of Transhumanism are committed to overcoming the effects of aging altogether by conquering death. They hold that our acceptance of death is based upon the increasingly discredited assumption that there is nothing we can do about it. The well-known scientist and inventor Ray Kurzweil argues that we could be living in the first age of immortals. Nature’s clock is set for death; cells are genetically preprogrammed to disintegrate. Without scientific intervention, mortality is unavoidable. But degeneration with age (called senescence) is essentially a genetic process. When we become capable of isolating the genes and proteins responsible for aging and death, all we need to do is reprogram them. Kurzweil believes this will be possible within the next generation. Michael West, former CEO of the huge biotech firm Advanced Cell Technology, argues for something similar: “love and compassion for our fellow human being will ultimately lead us to the conclusion that we have to do everything we can to eliminate aging and death.”

Not all advocates are so extreme. But the question of where the stopping point should be with certain technologies is critical to think about.

Let me be very clear. The use of advanced technology to augment the powers of the disabled—its “therapeutic use”—should not be identified simplistically with ethically suspect enhancement research. And such technology is growing increasingly sophisticated. Devices such as direct brain-computer interfacing (BCI) to assist quadriplegics in operating computers are already in clinical trials. Embedded micromechanical devices to deliver drugs and gene therapies have been used for a decade. Rapidly expanding nanotechnologies for treating disorders of the heart, brain, nervous system and musculoskeletal system are generating tremendous clinical and commercial interest. (Nanotechnology deals with tiny technological systems measured at the molecular scale in nanometers: a nanometer is one billionth of a meter.) Whole journals are already dedicated to the subject of nanotechnology.

Moreover, you have heard of prosthetic limbs to assist amputees. What about brain prostheses to replace damaged brain function for victims of stoke or brain trauma, or patients with dementia, epilepsy and Alzheimer’s disease? Last June the New York Times reported on a breakthrough in animal studies by researchers at Wake Forrest University, who developed a brain implant that helped to restore lost memory in laboratory rats. They believe the technology will be instrumental in the development of “so-called neuro-prosthetic devices” to repair memory dysfunction.

Clinical studies are also underway with neuro-muscular implants to assist the physically disabled. The School of Medicine at University of Southern California has already developed a neuromuscular prosthetic system that apparently can “reanimate paralyzed limbs.”

These forms of research are well funded by private and public sources. The National Institutes of Health (NIH), for example, are presently funding the development of tiny neural prostheses in the areas of “hearing, balance, taste, smell, voice, speech and language.” Scientists are committed to making these hopeful technologies widely available in the next generation.

But having them at hand for therapy will raise (is raising) the question of non-therapeutic uses. Should we use biomedical implants to assist the cognitive functioning of those who are not disabled? Military fighter pilots, for example, or combat soldiers (such as Captain America), or neurosurgeons? What about those who are simply dissatisfied with their memories, or their inability to concentrate, or, for that matter, their lack of math reasoning skills? The advance of science is unlikely to slow. Should the state intervene and legislate against certain uses for these technologies? Where do we draw the line between legitimate and illegitimate uses?

I mentioned above brain-computer interfaces. The UK’s Daily Mail reported in 2009 that research was underway into micro-sensors that would sit on the surface of the brain and read the tiny electrical activity of brain cells, then wirelessly transmit the signal to a receiver on the skull. Disabled persons could use these “telepathy chips” to control a cursor on a computer screen, or operate electrical devices, or steer an electric wheelchair—all by the power of thought. These aren’t science fiction. They’re already being used in clinical trials. Triumphs for the disabled, to be sure. But we don’t have to let our imaginations run far to wonder what darker purposes these technologies could be put to.

Memory alteration is also a hot area of biotechnical research, not aimed at restoring or improving it, but blunting and erasing its effects. Scientists are better understanding the way memories are stored (“encoded”) in the brain and the mechanisms by which memory and emotions interact. The brain structure known as the amygdala, an almond shaped structure deep within the temporal lobe of the brain, seems to be involved in the encoding of what is called “emotional memory.” Our brains remember not only images and facts from past experiences, but also emotions associated with these experiences. Those who suffer from PTSD (post traumatic stress disorder) as a result of very painful experiences (e.g., serious abuse or bloody military combat) can find the memories of those experiences crippling.

Research has found that people who suffer damage to the amygdala can still remember past events, but don’t exhibit the enhanced memory ordinarily associated with emotionally stirring experiences. Consequently, clinical studies over the last decade have aimed at suppressing the activation of the amygdala using drugs called beta-blockers.

Who could object to using certain drugs, presuming they are approved for safety, to aid soldiers suffering from shell shock (the older name for PTSD), or to blunt the memory of Rwandan survivors of genocide?

But more powerful drugs are sure to follow, which promise to separate with increasing effectivity the “experience of memory from the truth of the experience that is remembered.” These drugs will be wanted for use in non-clinical settings. The President’s Council on Bioethics in 2004 suggested a few troubling possibilities: e.g., “to prepare a soldier to kill (or kill again) on the battlefield; to dull the sting of one’s own shameful acts; to allow a criminal to numb the memory of his or her victims.” An article in the Village Voice a few years ago entitled Guilt-Free Soldiers raised a similar concern: are we “medicating away” our consciences? Leon Kass calls such techniques “the morning-after pill for just about anything that produces regret, remorse, pain, or guilt.” A leader of the group Vietnam Veterans Against the War, Barry Romo, was even more blunt: “That’s the devil pill,” he says, “the monster pill, the anti-morality pill. That’s the pill that can make men and women do anything and think they can get away with it. Even if it doesn’t work, what’s scary is that a young soldier could believe it will.”

Speaking of “morality pills,” Princeton bioethicist, Peter Singer, speculates that we will soon be able to give

violent criminals implants to change their brain chemistry and make them “less likely to harm others.” Julian Savulescu loves the idea: “there are strong reasons to believe that their use should be obligatory, like education or fluoride in the water, since those who should take them are least likely to be inclined to use them. That is, safe, effective moral enhancement would be compulsory.”

So the second reason to concern ourselves with Transhumanism is that the prospects for perfection that science will present us in the next few decades are speeding our way.

Q: I recently read something about a current philosophy called “Transhumanism.” Are you familiar with it and can you shed some light on what’s problematic about it from the perspective of a Catholic worldview?

E. Christian Brugger replies:

The final reason to wake up to the problems posed by Transhumanism is that — in the immortal words of Benjamin Franklin — “an ounce of prevention is worth a pound of cure.” If we don’t draw good lines in the ethical sand now, we may — we will — find ourselves later picking up the pieces of our ruined sandcastles. To rephrase Jesus’ words in the Gospels: if the householder had known when the thief was coming, he would have stayed awake. Be ye ready, for the thief will come when you least expect it (cf. Lk. 12:39-40). Well, the thief is coming. He may already be in our homes.

None of us is immune from the devil’s temptation to raise himself to the place of God. Indeed, we might even say that as created in God’s image and likeness, and destined for a life of happiness beyond all imagining, we’re made for immortality and perfection. Our desire for these things is, in a sense, “natural.”

But as I said in my first installment, few of us are as pure in intention as the young Steve Rogers (Captain America). What will we do when the Promethean temptation comes to grasp at solutions to our human limitations that may require us to compromise our humanity? For example, to screen out embryonic children in order to prevent the transmission of debilitating inheritable diseases? Or to generate new children to be used as medical treatments for others whom we love? Will misguided parental pride tempt us to use biotechnology to produce better children? Will musical parents be tempted to select for the gene for perfect pitch in their offspring? Will loving parents concede to their children’s request for cognitive stimulants when “everybody’s doing it” and when doing it would only level the playing field? Will socially defined images of beauty tempt us to use Botox or cosmetic surgery, not for therapeutic purposes, but merely to meet current notions of fashion?

And what if the irascible amongst us could receive a brain implant to make him more affable? Should he do it? If some medication would help us forget painful memories, should we take it? Should men be allowed to receive implants that enable them to gestate or nurse babies? Should persons suffering from Body Identity Integrity Disorder — in which the sufferer feels he’d be happier with an amputated limb — be allowed to amputate, say, a healthy arm and replace it with ‘bionics’? Should the 76 million middle-aged adults in the U.S. who suffer no brain disease be given “a way to reverse the frustrating forgetfulness that comes with age,” “Viagra for the Brain,” as an article in Forbes Magazine called it? Do you really think that pharmaceutical executives, facing profits from a market that large, will put the breaks on such research because it might not be “morally healthy” for society? Should brain implants be given to people who don’t yet, but might later suffer from Alzheimer’s or Parkinson’s disease? Not easy questions, but important ones.

The President’s Council on Bioethics raises some more philosophical questions, to which neither they nor I offer any simple answers: Does multiplying alternatives for choice necessarily equate with a growth in human freedom? Do more perfect bodies, powerful minds, brighter moods and longer lives translate into happier souls? Will widespread pursuit of non-therapeutic ends through biotechnical means cause us to grow in disdain for the

"givenness" of human nature? Is nature a gift to be nurtured or an obstacle to be overcome? Will moral character be helped or harmed if we medicate our weaknesses rather than strive against them through painful struggle? Will feats of human excellence made possible through biotechnology (e.g., breaking a homerun record, winning a spelling bee, defeating a sophisticated opponent at chess, jumping higher, running faster) — will they really be "our" accomplishments? Would they deserve the same kind of praise as lesser accomplishments achieved without the assistance of biotech? Are personal achievements impersonally achieved truly the achievements of persons? Will the limited distribution of bio-perfecting techniques — since all costly medical techniques are limited — increase social tranquility or foment envy?

I don't mean to set up easy answers to these. Even defining where the line exists between therapy and enhancement can be vexing. Would neural interface cards allowing users to access the internet via thought alone be ethically different from utilizing Bluetooth technology? Should neural chip implants that modestly expand short-term memory be considered assisting an ordinary capacity or creating a supercapacity? And so on.

Wherever we land on these questions, underlying them is the greater theological question of whether the enhancement imperative ("since we canmake ourselves better, stronger, smarter, therefore we should") is in some fundamental way a human attempt to play God? It might be considered the realm of the antichrist. No, not a chap with 666 on his head, and certainly not science per se. But rather the temptations that science may put to us to make ourselves into something that God never wills us to be.

E. Christian Brugger is a Senior Fellow of Ethics and director of the Fellows Program at the Culture of Life Foundation; and the J. Francis Cardinal Stafford Chair of Moral Theology at St. John Vianney Theological Seminary in Denver, Colorado.