

Designer Humans: is any room left for God?

The 2004 Smith Lecture

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We live in a technological age, and that is a good thing. We have all enjoyed the fruits of technology, from PowerPoint slide shows to fully automatic washing machines. Thanks to technology, our world has changed enormously in the last 100 years. Consider this quote from the magazine, *Popular Mechanics*, forecasting the relentless march of science in 1949: “Computers in the future may weigh no more than 1.5 tons”.¹ Perhaps it has changed more than anyone could have guessed.

The technological imperative has an unwritten rule: that progress must *always* be pursued. So we all wonder periodically, ‘What will they think of next?’ But there are other questions we ask less and less often:

- ❖ What is the *meaning* of what we are doing?
- ❖ Will there be a cost?
- ❖ And apart from the economic cost—we keep our eye on the balance sheet—what will be the immaterial cost?
- ❖ At what price to our society will technology continue to progress?

In this lecture I would like to explore rapid advances in biotechnology with particular reference to new ways of manipulating the human body.

I read recently the following generalisation:

If the nineteenth century was the age of the machine and twentieth century the information age, this

century is by most accounts, the age of biotechnology.²

This comment was prompted by a review of the areas in which modern technology is having an impact on all the biological sciences. Let’s take a look at some of these developments in the field of medicine.

Human Genetics. There have been enormous advances in the field of genetics. The mapping of the entire Human Genome, or the blueprint for all human cells, has been completed in an international collaboration called the Human Genome Project. An enormous amount of raw data was collected which is now fuelling a massive research effort. The prospect of cures is emerging for genetic diseases such as dementia, cancer and a host of other diseases.

Cloning. The age of cloning has arrived with the creation of Dolly the sheep. The first evidence of human cloning was published by a group from South Korea earlier this year.³

Cybernetics (Robotics). Seeming miracles occur on almost a daily basis. For example, the blind can see thanks to neural implants.

Nanotechnology. The combination of cybernetics with nanotechnology (engineering on a microscopic scale) is inspiring research on tiny microrobots that will be able to travel around the body to manipulate individual cells.

IT IS STAGGERING WHEN you consider that 100 years ago, a doctor did not have even antibiotic treatments available for his patients.

And yet, although our methods have become more sophisticated, you could say that the mission to perfect the human body has long been with us. The popular media is almost messianic in its quest to help us improve ourselves. Not content to give us makeovers for our gardens and kitchens, cosmetic surgery is now being promoted as the path to happiness in our youth-obsessed society.

It was to be expected that we, as a community, would not be content with transforming only what is on the surface. And so now we see these technologies that have been developed as treatments for disease being applied, not to make a sick person better, but to take a normal healthy person, and make them stronger, taller, smarter, more beautiful, more perfect. This process is called 'enhancement'.

I would like to explore the idea of extending human qualities beyond what we could normally achieve. What would it do to our society if we went down this track? What will happen if we relieve God of his responsibilities to play God ourselves? I'm not talking about blocking the use of these technologies to make sick people better. Obviously, it would be wonderful to see the therapeutic advantages of technology continue. I'm just thinking about the idea of making humans into superhumans. And I'd like to narrow our focus a little so we all know what we're discussing. Australians generally look at the consequences of actions to judge whether something is good or bad, so let's look at genetic therapies and their implications more closely.

We have just finished watching the Games of the XXVIII Olympiad. Once again we have seen incredible performances as the champions of the world compete for the gold medal. The breaking of world records is becoming harder and harder as training techniques push athletes to the limits of human speed, strength and agility. Already we are seeing athletes resort to performance-enhancing drugs to get the edge over their competitors (how many drug scandals did we have this time?). One commentator has suggested that we have seen one of the last Olympic Games without genetically-enhanced athletes⁴. How do we feel about that? At least the drug scandals may ease off—the newest methods for enhancing athletic performance are undetectable.

Let me explain how it works. Gene therapy aims to replace a defective gene with one that works properly. Suppose you were born with genes that meant your body had weak muscles. One promising treatment works at the genetic level to regenerate muscle and increase its strength. This will help people with muscle-wasting disorders such as muscular dystrophy. It will also increase the strength of normal muscles. This is a dream-come-true for the athlete trying to improve his chances of success. The effects in the muscles are produced by naturally-occurring chemicals. There is nothing going into the blood stream so there is nothing to detect in a blood or urine test.

We criticise the drug-enhanced athlete for gaining an unfair advantage over his competitors. But is that a reasonable argument? You could say that many Olympic champions have a genetic superiority which has occurred naturally—why then would we

object to the artificial kind so long as it was safe and accessible to everyone? I think our common terminology to describe such athletes indicates our society's attitude towards them: drug cheats.

The moral dilemma stems at least in part from using such a therapy not for curing a disease, but for reaching beyond health—for enhancement of physical capabilities above the norm. Like cosmetic surgery, genetic enhancement employs medical means for non-medical ends—ends unrelated to curing or preventing disease or repairing injury.

But why wait until after we're born?

Our newspapers regularly report the steps our scientists are making towards 'designer children'. We are introduced to the prospect of being able to choose the genetic makeup of future children—already the science is there to allow the choice of sex, so we can 'balance our families'—but we are promised the opportunity of one day being able to choose the eye colour, the height and all manner of attributes of our offspring. A parent at my children's school explained to me that he had no reservations about this being generally accepted. "It's perfectly natural," he told me, "to always want the best for our children".

My final example will reassure you that biotechnological enhancement is for brains as well as brawn. An American company, Memory Pharmaceuticals, is working on a drug which will enhance our thinking processes. It will improve our memories and help us think more clearly. The obvious market is the group of patients suffering from memory loss associated with diseases such as Alzheimers, but the company also has in its sights the growing western population over

fifty years of age who are experiencing normal age-related memory loss. Such a drug has already been dubbed 'Viagra for the brain'. You can see how such a use starts to blur the line between remedy and enhancement. Unlike treatment for Alzheimer's, you wouldn't be curing a disease. However, you would be restoring lost brain function, and so it would be a remedy of sorts. But why should the Baby Boomers get all the benefit? I could have done with a bit of memory enhancement myself during my university exams. And so the issue of unfair advantage becomes significant. Will we create a genetic underclass? Will there be pressure to be enhanced even if you're not that keen? Which doctor would you rather have look after you—the cognitive-enhanced model or the unenhanced sleep-deprived version who has to stop and think before he can tell you what he had for breakfast?⁵

How do we feel about our society's move towards designer humans? I must admit that when that school dad was talking about choosing the best for our kids, I felt uncomfortable. The idea didn't really grab me. Now, I love my children and I try to be a good mother, and I could see his point—what is wrong with doing everything possible to give our children the best chance of success in life? My husband and I try to give them a good education and opportunities to develop their talents. Why do I feel uneasy about the prospect of parents being able to design a superior model of child?

Am I right to be troubled with this? And if so, why? Obviously, it's unlikely that everyone would be able to afford what will undoubtedly be an expensive procedure. But even if we

disregard the problems of unequal access to enhancement and pretend we will have a level playing field, is enhancement a good thing for our society to pursue? Do we want to live in a society where parents feel pressured to spend a fortune on cognition-enhancing drugs for children who are perfectly normal? (Why do I think of coaching when I say that?)

In order to grapple with these issues we need to consider questions that we tend to ignore in day-to-day life. Questions relating to how we, as humans, should consider ourselves in relation to our world. The big questions in life: How did we get here? Where do we fit in? Who made us? Perhaps we don't spend time thinking much about these things because the products of technology have so increased the pace of our lives. Whatever the reason, I believe that our rapidly advancing ability to manipulate the human body, and the ongoing march of technology, makes consideration of such issues unavoidable.

However, it's not easy to stand apart and critique the dominant preoccupations of one's own culture, because they speak to real human needs, fears and desires. It is easy to understand why people identify with these technological developments, when they promise at one level to prevent real human suffering. Furthermore, we are all constantly bombarded by cultural images in advertising, TV, and films which suggest that our bodies are our own exclusive property and that we are free to do with them exactly as we see fit. That our bodies are malleable and constructable and that we can be whoever we want to be by joining the rush towards biological engineering.

Yet despite the difficulties, I think we need to stand back for a moment and con-

sider whether the race to be a designer human deserves the effort required to go for gold. Or whether the cost of progress is at a price we as a society are prepared to pay.

Now you may not have a problem with any of the examples I have mentioned this evening. But if you do feel a sense of unease regarding the use of technology to make ourselves stronger, smarter and prettier, let us explore this further. Why do we feel this way?

Consider the athlete. It is one thing to win the Olympic 100 metres final through disciplined training and hard work. It is something less to win it with the help of steroids or genetically enhanced muscles. As the place of enhancement increases, so our admiration for the achievement decreases. Or do we just shift our admiration from the athlete to the technician who made it all possible?

Will there be less satisfaction for us in our achievements when they cannot be attributed to our own efforts, merely our enhancements?

As I have already said, I recognise that it can be very difficult to scrutinise topics like this because they are so close to the heart of all our society holds dear. We know that if even just a fraction of their promise is fulfilled, biotechnology will give us some wonderful therapies, and we know that is good. But shouldn't we start thinking about *how* these technologies will be used, before we as a society go down this path? Do we want what began as a medical treatment to become an instrument for our personal improvement, merely yet another consumer choice?

Not all cultural images presented to us favour the designer human scenario. One example is the 1997 film, *Gattaca*. It portrayed a world where genetically engineered

babies were the norm. In a scene where prospective parents were in consultation with their obstetrician, he assures them that he is just helping them produce “the best baby they could possibly have”. The story features a child who is born in what they call ‘the old-fashioned way’ where the parents conceive a child normally and just take their chances. Vincent is a beautiful baby boy, but as the genetic profile is read out at birth, it turns out that he is a genetic disaster. As a result, his opportunities for education are limited and he is destined to a life of menial labour. He doesn’t qualify for health insurance. In the world of *Gattaca* there are scanners everywhere which prevent the ‘invalids’, like Vincent, going where only the ‘valids’, or the genetically superior, are wanted.

While *Gattaca* is not one of the all-time great movies, it brings into focus the realisation that when we are no longer all in the same boat regarding the vicissitudes of life, we can lose our sense of solidarity with our fellow citizens. Consider insurance. Since none of us knows if or when we will get sick, we all pool our resources and end up subsidising each other’s health costs. But this whole system works only because we cannot know or control what will happen to us health-wise. Last year’s Federal Government inquiry into the privacy of genetic information⁶ was largely prompted by the possibility that discrimination could occur if insurance companies had access to our genetic profiles. Insurance in Australia is a multi-billion dollar concern. Insurance companies exist to make a profit, it is only to be expected that they would be interested in this extension of our medical histories. But think, if genetic

enhancement were to become routine, would we continue to promote the social solidarity which we now enjoy? Would the genetically superior enhanced beings want to subsidise you, the basic model?

There is already a cultural shift taking place, moving away from supporting families with special needs children. A colleague of mine in the United States has come across two cases where children with inherited genetic disorders were refused treatment on the grounds that their physical and mental problems were previously known conditions. They were refused treatment because their parents elected not to abort them after prenatal screening had indicated a problem. Such families have been viewed as a burden to society, one which some people apparently don’t want to subsidize.

So much for reproductive freedom. And so much for the idea that this whole enterprise is a matter of individually making our own choices to suit ourselves. We’re all in this together.

But insurance issues are not my main concern. I want to think more deeply about what is happening when we contemplate genetic engineering and enhancement. I would like to suggest that in such enterprises what we are trying to do is recreate ourselves. We are trying to turn childbearing into a manufacturing process which we can control. We possess a drive to mastery over the biology of the human species.

Consider this quote from the *Sydney Morning Herald* last year:

...biotechnology is only necessary because evolution has left us with

shoddily built bodies that constantly break down, leaving us with headaches and backaches, cancers and coronaries, schizophrenia and depression. So why shouldn't we try to improve our genome?⁷

According to this view, evolution, or God, depending on your belief system, has messed up. It is up to us to overcome all human ailments. This picture is one of absolute self-possession which sees finite embodiment itself as a problem which needs to be overcome. We are increasingly loathe to accept our limits as finite, created human beings. We find it very, very hard to accept our own mortality and our normal decline as death approaches.

Do you think I am overdoing it? Consider this quote from the World Transhumanist Association's website.

Humanity will be radically changed by technology in the future. We foresee the feasibility of redesigning the human condition, including such parameters as the inevitability of aging, limitations on human and artificial intellects, unchosen psychology, suffering, and our confinement to the planet Earth.

Transhumanists advocate the moral right for those who so wish to use technology to extend their mental and physical capacities and to improve their control over their own lives. We seek personal growth beyond our current biological limitations.⁸

And so it goes on, highlighting the hope for immortality, the defeat of death itself. To

their credit they see a need for community debate over this issue, but with the intent to make sure they are not hindered in their attempts to (in the words of Julian Huxley) "fulfil their *real* destiny". They discount any attempt to thwart their desires as ignorant technophobia. It might make sense if this is all there is, if we only have one go at this life with this one body. But even if you do want to live forever, what about everyone else – do you want the child rapists to live forever, too? And do you want to live forever in this world, with its pollution, its limited resources and its inequities? I'm not so sure it's a good idea.

Now, you might be sitting there thinking that my transhumanist buddies and I are off with the fairies and that all this biotechnology talk is the product of teenage techno-geek imaginations. But you would be gravely mistaken. Much of what I have mentioned tonight is already possible, and much more is being done to make it all a reality. Consider that Australian governments have invested over \$3 billion to develop nanotechnology in this country⁹. The US Government has invested US\$961 million in their National Nanotechnology Initiative for this year alone¹⁰ and it is predicted that nanotech-related products will total \$US1 Trillion within ten years' time. This is no longer the realm of science fiction.

So, what do you think? Do you think that we should have access to any surgery or bodily manipulation we individually choose? I read an article about a doctor in the USA who thinks he should be able to attach wings to one of his patients if that's what the patient wants and no-one gets hurt.¹¹

Do you perhaps feel a little uneasy? But

do you find that sometimes the uneasiness is difficult to define? Listen to Professor Leon Kass of the University of Chicago as he articulates his opposition to another form of technology, the cloning of human beings.

We are repelled by the prospect of cloning human beings not because of the strangeness or novelty of the undertaking, but because we feel, immediately and without argument, the violation of things that we rightfully hold dear. Repugnance, here as elsewhere, revolts against the excesses of human wilfulness, warning us not to transgress what is unspeakably profound. Indeed, in this age in which everything is held to be permissible so long as it is freely done, in which our given human nature no longer commands respect, in which our bodies are regarded as mere instruments of our autonomous rational wills, repugnance may be the only voice left that speaks up to defend the central core of our humanity. Shallow are the souls that have forgotten how to shudder.¹²

Now I recognise that repugnance is not itself a moral argument. But Kass suggests that we seek the reasons for our initial hesitancy before familiarity brings unquestioning acceptance.

When we strive for mastery over the human race, what we are rejecting is the idea that everything we are and all we can achieve as humans is in fact *given to us*. However much effort we apply to developing and exercising our talents, essentially our talents are not of our own making. Recognising the 'givenness' of

our talents makes us humble. It makes us aware that not everything in this world is open to any use we may devise. Obviously in part this is a religious sensibility, but I would suggest to you that it extends beyond religion.

It is difficult to account for what we admire about human achievement without drawing on this idea. Consider the Olympics. What is the goal of sport? I would suggest that athletic excellence is what we value. We may give lip service to those who try hard, but in the end we remember those who win. And athletic excellence is often due to that inborn talent which is no doing of the athlete who possesses it. We have even found a gene to prove it.¹³

This is an uncomfortable fact for our society. We want to believe that success, in sports and life, is something we earn, not something we inherit. But effort isn't everything. I may train harder than Jodie Henry, the champion Olympic swimmer, but no-one is going to think I deserve her place on the team once they see me in the pool.

This idea of giftedness persists in parenting. To appreciate children as gifts is to accept them as they come, not as objects of our design but, as they say in secondhand furniture shops, as is. Parental love is not dependent on the attributes of our children. You can choose your friends on their attributes, but we do not choose our children. In a way, the unpredictability of their genetic makeup helps us love them as they are, as we have no preconceived ideas as to what to expect. Contrast this with the parents of a clone.

And this is where I think we find ourselves as we seek the moral objection underlying the whole philosophy of enhancement. It is less in the perfection it seeks than the

human disposition it expresses and promotes. The problem is not the perfect model itself. It lies in the attitude of the parents who seek to master the mystery of procreation. Who lack the humility to accept that a newborn baby is not the product of their skill but a marvel of creation, with all its complex reflexes there from the start.

Now let me assure you that I am not decrying the parent who seeks to cure disease or repair injury in the child. These are noble and right ambitions for any parent. This is not an attempt at mastery so much as a desire to nurture.

Yet if bioengineering does allow the transhumanist ideals of 'self-made man' to come true, it would be difficult for us as a society to continue to consider our talents as gifts for which we are indebted, rather than achievements for which we are responsible. This development would transform our moral landscape, making us a less humble society. One less welcoming to the imperfect who come, by birth or accident, among us.

And if you think you do want to play God, consider this scenario. A doctor wants advice about the termination of a pregnancy. He tells his colleague that the father had syphilis, the mother tuberculosis. Of the four children born the first was blind, the second died, the third was deaf and dumb and fourth also had tuberculosis. She is pregnant again. She's wondering if the pregnancy should be terminated. What do you think?

If you answered yes, you would have murdered Beethoven.

My point is this—our limitations, which are a result of our finite human existence, make it impossible for us to know what will be for the best. So if right and wrong are so

unclear, how are we going to decide what we should do? Do we want the scientists to decide? The government? We shouldn't be naïve. The way things are going now, biotechnology will be driven as much by markets as by ethics and science.¹⁴ If we are talking about remodelling the human race, surely this is a debate which we all must have, balancing competing goods and competing risks. We all need to think it through, and if we do decide as a society to go down the path of enhancement, we need to do it with our eyes open to the risks. We need to have this debate now, before it is too late. We're talking about the society we want for our grandchildren and our children and our ourselves.

What do you think? How do you work out right from wrong? Do you think this world is all there is? That physical perfection will mend your life? That it is better to be a perfect individual than a fellow citizen? Are you perhaps unsure? We need a moral compass, don't we, to help us in our decision making.

In this lecture I have considered the consequences of enhancement as one way to decide right from wrong. I actually don't think that's the best way to do it. As I've already noted, we can't predict the future, for one thing. I also think it's questionable whether the more comfortable, the more attractive, the more perfect should be our goal. I think we're mistaken in some of our initial assumptions.

I don't think that our finite embodiment is a problem. This is what it means to be a human being. We're flesh and blood. Our frailty is part of the package. It makes us dependent on each other, it makes us more tolerant of each other.

Of course the death of a child, or anyone else's premature death is a tragedy, one might even say an abomination. But apart from the aberration, those of us who do live out our years surely find them sweeter, more interesting, because they *are* numbered. We are more likely to make the most of those opportunities and experiences which are less likely to come our way again. We say of some things, such as moments with our loved ones, that we wish they could go on forever. But in our hearts we know their value is in part a product of their fleeting nature.

In the Old Testament part of the Bible, the psalmist says: "Teach us to number our days, that we might gain a heart of wisdom".¹⁵

And this is one way we can find our way through the maze of rights and wrongs. Christians use the Bible as a moral compass and a source of understanding who we are as human beings. The Bible teaches that God created us; that, in whatever way it was done, God is responsible for our existence. It also teaches that death is not the end for the human being, a view that most people throughout most of history have adhered to. We learn from the Bible that there is something eternal, something spiritual, about this life that we have.

And finally, the Bible also teaches that human beings desire relationships. We may enhance our bodies, but if our friendships and marriages and families are not enhanced as well, we remain dissatisfied. What we long for is deep connection with other beings, and biotechnology will not fulfil this desire. I suggest that this desire is a spiritual issue, and has to do with our longing for a relationship with God. Such a longing deserves greater attention than many of the things to which

we commit our time. I urge you to pursue this longing. Can I urge you to read the Bible and discover for yourself how humans beings are designed?

ENDNOTES

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