

The Myth of Techno-Science and Human Identity



By Susan White

**Susan White is
Harold and
Alberta Lunger
Professor of
Spiritual
Resources and
Disciplines at the
Brite Divinity
School, Fort
Worth, Texas.
Her recent books
include *Liturgy
and Technology
and The
Groundwork
of Christian
Worship.***

At the threshold of the third millennium many of us feel as if we have indeed settled in a foreign country. It's a country in which a sheep can be cloned from a single strand of DNA and a 64-year-old woman can give birth through in vitro fertilisation. It is a country where dead people can be frozen until a cure for what ailed them is found and where the ashes of the dead can be placed in a rocket and sent into outer space to be scattered. It is a country where the information on the Internet doubles every six months and where an IBM computer can beat a grand master at chess in just nineteen moves. Here Susan White reflects on the implications for human identity brought about by the application of science and technology to nearly every conceivable aspect of human existence.

There is a prayer by John Wesley that is not expressed in our words but is, I think, written for our times:

*Seek though our steps,
O Lord, that we stagger not
at the uneven motions of the
world, neither censoring our
journey by the weather we
meet with nor turning out of
the way for anything that
befalls us. Teach us, O Lord,
to use this transitory life as
pilgrims returning to their
beloved home, that we may
take what our journey
requires and not think of
settling in a foreign country.*

His humble plea that we might not stagger at the uneven motions of the world strikes a chord.

During 1999 we are being asked to imagine tomorrow. We might think together about how we, who are a people with a particular story to tell and a particular story to live by, might

bring that story to bear on the public conversation about the kind of future we will inhabit together. I want to ask about the ways in which another story, the story which science and technology tells, might contribute to this conversation and in what ways it challenges authentic Christian living and imagining.

Most of the conversations you will hear about the relationship between the Christian life and the world of science and technology tend to focus on questions of ethics or of belief.

There is no doubt, as we try to make our way without stumbling through this foreign country, that we must forge for ourselves a useable ethic for the third millennium.

I believe, however, that these tasks are set within a larger conversation that revolves around the question "How do we understand the nature of our human identity as we are carried into the third millennium on a wave of high technology and

techno-science?" This is not so much an ethics or a doctrine question, although it certainly has both ethical and doctrinal implications. It is more in the nature of a spirituality question, a question of how we might understand ourselves as human under God; how we might approach God and how we might approach the disciplines of godliness; how we must approach one another in a way that takes account of both the techno-scientific social location in which we find ourselves in the 21st century and this remarkable text, this biblical narrative with which we struggle to stay in relationship.

Questions

It is almost impossible these days to avoid the questions that science and technology raise for those who are trying to understand human identity.

Here is just one recent example. At the beginning of this year, an American physicist called Richard Seed announced that he was intending to set up a clinic in Chicago which would be offering infertile couples the opportunity for human cloning. He said that he was just 18 months and £³/₄ million away from achieving that goal. It is not so much Seed's potential for success or failure that is of interest to us here but his interpretation of his venture.

When Dr Seed was asked how this project fitted into his own acknowledged Christian faith he said, "We human beings are soon going to have as much knowledge and almost as much power as God. God made us in his own image and God's plan for humankind is that we should be one with him and what I am doing is a significant step in that direction. I personally believe that a literal communion between humankind and God will transpire and that it will take anywhere from 50 to 200 years through human cloning." When asked by the interviewer if perhaps he shouldn't slow down and reflect more carefully on what he was proposing, Seed replied simply, "You can't stop science".

Whether Richard Seed is right or not in his theological interpretation of what he is accomplishing in human cloning, he is at the very least talking in a way that makes sense to people at

the turn of the millennium. He is talking within a world-view that has become commonplace, a world-view that we might call the myth of techno-science.

It is a myth with its own presumptions and aspirations, a myth with a compelling view of the future and with a method for arriving at that future, and it is a myth that presents us with a host of questions. They are questions about human limitation and human power, the nature of human knowledge, the meaning of creation and the creation of meaning.

Certainly one of the anchors of our human identity has always been our relationship with and our understanding of our own human bodies. Our sense of bodily identity has always been shaped by a number of social forces, but if you were to make a list of those social forces which are shaping our interpretations today you would surely want to put science and technology and more particularly bioscience and biotechnology right at the head of that list. They are currently among the loudest and most persistent voices telling us who and what we are and who and what we can or ought to be. So if we are going to speak meaningfully about the impact of the techno-scientific world-view on our human identity then we need to look at the impact of the biosciences and the biotechnologies on the images, values and ideals we use to understand the human body.

Value

At the end of every year when I was a child our local newspaper would run a piece giving the current market value of a human body, calculated by totalling the going rate for the magnesium, carbon, potassium, sodium, calcium and so forth in the average human being. It usually amounted to about \$1.27.

I remember as a little girl reading and pondering this bit of mundane information and it had an enormous effect on me. It made me think about my own mortality, it made me feel just the way I always feel now when I hear the words of the Ash Wednesday service. "You are dust and to dust we shall return." But now things have changed dramatically. Thanks to advances in biotechnology the human body has become a much

more valuable commodity. Now blood types sell for \$6,000 a pint, healthy kidneys can fetch anywhere from \$10–50,000 a piece, a single human eye goes for \$60,000. A woman's egg is worth more and more every year although I am sorry to tell you that the price of sperm has stabilised at \$40 an ounce.

It is projected that in the next 12 months the three largest US pharmaceutical companies will apply for patents on more than 3,000 different genes with a net worth projected of upwards of \$1 billion. The commercialisation of the human body and its component parts has happened so gradually over the past quarter century or so that we have hardly noticed it. But we can, I think, stick some land-marks on the journey from 127¢-worth of basic minerals to what one author has called the "human body shop".

Landmark

One of these landmarks was the 1996 US federal appeal court ruling in the case of the Community Blood Bank of Kansas City v United States Federal Trade Commission, that human blood could be technologically and legally defined as a commodity; the sale of which could be regulated under federal trading and standards practices. Almost immediately the medical and religious communities raised serious concerns about this ruling.

But, in spite of these concerns, further court rulings in different areas of the economics of human body parts almost universally were settled in favour of the understanding of the human body as a commodity with a fixable market value and consequent rights to ownership and transfer.

This trend towards the increasing commodification of the human body is just one small example of the ways in which science and technology are shaping the future of our human identity; redefining who we are and what our purpose is within the complex economic structures of bioscience.

There are two important kinds of changes, revolutions really, in our relationship with our human bodies that have been engendered by contemporary science and biotechnology which

made an impact on this question of human identity.

The first of these is that which results from what we know about the body and the second from what we can do with the human body.

It seems very strange to us now, but, as with so many revolutions, the most recent revolutions in our knowledge about the human body began with a whimper and not a bang. In this case, the initial volley was a little article which appeared in the British science journal *Nature* in 1953. In it an American and an Englishman, both young scientists at Cambridge University, reported having discovered what they called a beautiful new structure; a long twisting double helix of molecular material which was located along the chromosome of every living cell. It was DNA, described as a fundamental building block of life, and Francis Crick and James Watson proposed that the four chemicals which made up this double helix arranged themselves in a vast variety of patterns to form those things which we call the human genes. Forty years later, in 1992, our governments – yours and mine – announced that they were contributing a total of £300,000 to the human genome project, a computerised world-wide effort to complete a full human genetic map. It is anticipated by the year 2005 that more than one hundred thousand genes in the human genome will have been fully deciphered.

Up to the middle of the 19th century the scientific study of the human body was looked upon as a branch of theology. Like all other aspects of natural science, anatomy was used to disclose the true nature of God and to support the veracity of the biblical accounts of creation.

Compare this older perspective of the human body as a window onto the reality of God with the opening statement in Francis Crick's recent book *The Astonishing Hypothesis*, which he wrote after 40 years reflection on the meaning of the DNA revolution he himself had begun in 1953.

After quoting the traditional definition of the soul from the Roman Catholic catechism, Crick says "the astonishing hypothesis [his astonishing hypothesis] is this;

that you, your memories and your ambitions, your sense of personal identity and free will are in fact no more than the behaviour of a vast assembly of nerve cells and their associated molecules."

I might add here that Crick himself threatened to give up his professorship at Churchill College, Cambridge in 1985 because the college had been given some money and had the audacity to propose building a chapel. The chapel stands and Professor Crick is still there as well.

In *The Astonishing Hypothesis* Crick attempts a purely scientific investigation into the biological basis of human identity, but his work is part of more extensive research being done in academic settings into the substance of human consciousness, the so called brain-mind question. This research is, however, not solely for the purpose of advancing our understanding of human anatomy, although it certainly has done. Research into the physiology of human consciousness is also undertaken in order to advance the creation of both artificial life and artificial intelligence.

Watershed

In 1987 researchers gathered at Los Alamo, New Mexico to put these new sciences of artificial intelligence and artificial life on the map. According to one observer the event celebrated a technological and scientific watershed. Deepening understanding of the biological mechanisms along with the exponentially increasing power of digital computers had brought humankind to the threshold of duplicating nature's masterpiece – a living system out of non-organic material.

Scientific materialism, the idea that all things can be understood fully and finally by understanding the natural forces and processes that organise them and acted upon them, had come of age.

Many people are now saying that through the ever closer analysis of human biology we are swiftly moving ourselves towards what Hans Morveck has called a post-biological age in which silicone-based devices will surpass human beings in virtually all those areas we now call human.

Within the next century, Morveck says, "computers will mature into entities as complex as ourselves and eventually into something transcending everything we know in which we can take pride when we call them our descendants."

These forms of non-organic life will reproduce themselves. Each generation will be better and smarter than the last, more flexible in responding to its environment and more responsive to outside challenges that are presented to it.

It would be very nice to think that the impact of these attempts to create artificial life out of silicon chips were confined to the fairly rarefied world of the computer super nerd. Most people we know have no trouble distinguishing between life and a machine, do they?

Thirty-eight million of us to date have bought a Tamagotchie, a cyber-pet. In case you have been in the cave for the past few years, the stated object of owning a cyber-pet is to keep it alive. You do this by giving it cyber-food and cyber-exercise and cyber-water and cyber-love and affection.

In the market research which the developers of the little machine did after the first wave of consumer interest, they discovered that there was one major flaw in the design. They found that many owners experienced considerable grief and distress when their cyber-pet died. Many consumers were saying that because of this they were reluctant to purchase another one and reluctant to recommend that their friends purchase one. In the world of consumerism that is called a disaster.

So a design change was implemented and in the new and approved Tamagotchie when the cyber-pet expires through lack of cyber-love and attention and cyber-food and water a little angel is seen to float to the top of the screen. It hovers around for a while before fading away. Market research showed that consumers were much more satisfied with the new and improved model.

As you can begin to see already, the scientific search for the material basis of human life and the growing interest in reduplicating the essential processes of life in the new sciences of artificial intelligence and artificial life raises a world of

▶ questions which bear on human identity.

What does it mean to be alive? What is a human being? What is a human soul? Does it have a supernatural or biochemical origin? Is there a strictly biological component to religious experience and if so is it reproducible in the laboratory? Does piety have some evolutionary advantage in the human species and if so will one generation of artificial life someday discover that it does and begin to pray?

The questions go on, but increased knowledge about our human biology is not the only thing generating serious questions in this area of our human identity. It has also increased power over our human biology that is generating serious questions about our human identity at the turn of the millennium.

Let me take you back just a few years to the autumn of 1990 and to the paediatric intensive care unit of the National Institute for Health in Maryland in the US. There on the operating table lies a little four-year-old girl. She is undergoing a transfusion, one billion human cells are being introduced into her blood stream. This child was born without the gene which regulates those things that are essential to the immune system allowing us to fight off disease. The human cells which she is receiving contain that missing gene.

In the space of the 28-minute transfusion, medical and biotechnological history was made in the first successful gene therapy treatment. An hour later the patient was sitting up eating Smarties.

Of course since this more or less altruistic beginning, the darker side of gene therapy and genetic engineering has become all too evident and these have become the subject of intense debate by theologians and public policy makers; debate over the patenting and selling of individuals' genes, the implanting of human genes into other animals for the purposes of drug testing and for the production of valuable human enzymes and hormones, the removal of defective genes from human embryos and the recombination of genetic material to create new "improved species".

One of my scientist friends says that where her father was always trying to build a better

mousetrap she is busy trying to build a better mouse.

Of course, when we extend our field of enquiry to various issues relating to the beginning and the end of both individual and corporate human existence, the debate becomes even more intense.

In some ways, of course, all of this is just the latest chapter in a long history of the biotechnological intervention in what we might call the natural processes of human life from leeching to radiation therapy and from acupuncture to incubator. We have, throughout the ages, sought various way and means to improve the quality of human living, yet most contemporary observers are beginning to say that there is something radically, qualitatively new about work at the threshold of the third millennium; a new capacity to manipulate the most basic fundamental structures of the human body which is resulting in a new vision of what it means to be a human being.

Science Fiction

Until very recently, the extended contemplation of questions in the area of genetic engineer and biotechnics have been the province of science fiction.

Questions of human power and human biology have been given voices. We look back and feel a kind of knowing sympathy for Victor Frankenstein, the tragic hero of Mary Shelley's 1818 novel, who, reflecting on the days before his creation turned monstrous says, "when I found so astonishing a power placed within my hands I doubted at first whether I should attempt the creation of a being like myself or one of simpler organisation".

In the past few years, new voices have entered this debate about our power over the human body ever since the Dupont Corporation marketed the first patented animal in 1988 under the trade name Uncomouse. Those who have seen the profit potential in genetically altered plants and animal species have been offering their own peculiar point of view. Insurance companies have now begun shaping the debate as well, with increased calls for genetic testing on a wide scale in order to minimise their own risk and increase their corporate profits.

The bioscientist and the adventure capitalist are moving a particular vision of human identity forward as they seek to redefine our human biology for their own particular end.

In one of his particularly profound moments, the 18th century philosopher Thomas Hobbs said that the ultimate power in any society is the power to name names and to enforce definitions. In the light of that, it seems to me that the question for us is what will have the power, what will be the thing that names names and enforces definitions on us as human beings as we move into the third millennium?

Who will name the name human being? Who will enforce on us the definition of what a human being is? We have talked about the power of techno-science to do these things, to use its power to name names and to enforce definitions and to move us towards a particular future in which we will be required to play a particular role.

For many people who try to imagine tomorrow there is simply no alternative to the techno-scientific myth of human identity. As political commentator Edward Rothenstein observed, "science and technology are this year's religion with everyone a prophet."

But, as people of the technical story, we are seeking an alternative foundation on which the public debate about human life in the new millennium might rest. We are asking if the dominant myth, the religion of techno-science, the story it tells, can be transfigured and redeemed by the story we tell.

If it can, we might indeed be able to do something other than be swept along by it. We might actually find in it a decisive and positive role for ourselves in forming a vision for human life in the future. ■

This is an edited version of one of two White lectures given at Bible Society's *Imagining Tomorrow II* consultation. Both are available on audiotape. *The Myth of Techno-Science & Human Identity* and *Redeeming the Myth & Human Identity* are available from Bible Society priced £4.50 each (incl. p&v/VAT).