

More than a bag of biodata - The mystery of life.

Making new kinds of animals, plants or even humans is within our grasp using gene technology and British companies are leading the way. One such company is British Biotech, whose share price hit a new high this week, valuing the company at no less £1.7 billion.

The speed of progress is astonishing. There is little doubt that we will one day be able to locate genes which influence height, hair colour, skin pigmentation and possibly even intelligence or creative ability.

450,000 artificially mutated animals are born in the UK each year. Many of these creatures have been made by adding human genes to make them grow faster, or to turn their bodies into human medicine factories, or to make organs suitable for transplant.

Sheep and goats have been combined to make geep.

The same techniques could be used to make combined humans and monkeys. Or perhaps we could blend a seagull and a giraffe to see what happens. These sort of experiments are common. Fish have been born with human and mouse genes for example.

Experiments limited - only by the imagination

Edinburgh scientists have made a whole series of identical sheep, with the potential to create a flock of thousands of perfect clones. Human embryos have already been cloned using other methods. How far should we go? Where do we draw the line?

Some of the deepest answers are not to be found in a biotech laboratory, but in the twilight zone between life and death.

Doctors like myself who are involved in the care of the dying are confronted daily by the fact that life is indeed a mystery.

Here is a woman lying in the bed, bounded in space and time. Her pulse is weak and life is fading fast. She is lying quietly on her side as I am holding her hand. She is at peace, she knows where she is going and has no pain. I think she is deeply asleep but when there is a small noise she squeezes my hand.

Her breathing is shallow now and her pulse is hard to find. At times I almost wonder if she has passed away, but no, she is still breathing. After a few minutes more I am sure the final moment is near - and am caught by surprise by a loud sharp breath. Then all is still again.

Death is not instant, despite all the images in films. Death is a gradual process. She is still there, but over the next twenty minutes or so something has gone. Almost all the cells of her body are still alive, but her presence is no more.

Her heart cells may still be contracting irregularly, her stomach is digesting food. Her skin cells are still living and her corneas could give a child sight. Her kidneys are still working, and her bone marrow is still producing red and white blood cells.

All the ingredients for life are there. The genes, proteins, chemicals, sugars, molecules and gasses are present yet she herself has gone. All around the room are vivid echoes of her past, and of her personality. I can almost hear her voice. But where is she?

This is a mystery, the most profound mystery of our existence and the real key to understanding our genetic code.

We see the same mystery in the moment of conception, when half the genes from a man and half the genes from a woman fuse together and the two become literally "one flesh".

But is a baby born today just a bag of genes? A unique blend of second-hand biodata ? A mere automaton programmed to grow, reproduce and die? A random mutant, produced by a chaotic anarchistic universe which proceeds with no logic, no purpose, no meaning, no beginning, no cause, and certainly no end?

As we study human life in the womb, or the last moments of earthly existence, or the majestic appearance of the galaxies in space, it becomes obvious to most people that there must be a God, a prime mover, an originator, a cause.

And if a prime mover, then a God who creates with exquisite detail and care, one who has designed conscious, caring, ethically aware, spiritual beings capable of the deepest thoughts and of relationships with himself.

You and I are surely more than the sum total of our genes. Our desire to "control and subdue" the earth by manipulating genes may well be part of what God intended when he gave us scientific intellect. However that desire needs to be tempered by an understanding that there is more to Life than life itself.

As stewards of creation, we urgently need gene technology to cure disease and feed the world. However, the stuff of life is too serious to be playing God by wantonly adding new genes to people, by cloning them, or by adding significant amounts of human genes to alter animals into our own likeness.

Either we control gene technology today, recognising that there is indeed a spiritual dimension to human existence or gene technology will redesign us.

Archive written in 1995.