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Xenotransplantation

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Rule over the fish of the sea and the birds of the air and over every living creature that moves on the ground. Genesis 1: 28

The fear and dread of you will fall upon all the beasts of the earth and all the birds of the air, upon every creature that moves along the ground, and upon all the fish of the sea, they are given into your hands. Everything that lives and moves will be food for you. Genesis 9: 2,3

What should we give eighteen year olds, when they come of age? A genetically modified pig. Wherever the eighteen year old goes, the pig goes. If there is a road traffic accident, the pig comes into its own. For a bacon and egg breakfast, the hen makes a donation, but the pig is totally committed. That total commitment would mean, if a pig's liver or kidney was needed to save the eighteen year old's life, then a xenotransplant (transplant from a foreign species) could be performed. The great advantage is that because of the gene modification, the organ will not be rejected, which is the major problem in organ transplantation.

This is not science fiction, but a serious possibility. The government set up the Xenotransplantation Interim Regulatory Authority, after the positive reaction to the Kennedy Report on the Use of Animal Tissues.¹ There is a shortage of 55,000 organs a year. People are suffering and dying. No amount of public health education or recruitment drives has made an appreciable difference to the number of us willing to fill in donor cards, which indicate our desire to leave our various organs for transplants to help others. Given the increasing success of organ transplants and the genuine improvement in life expectancy and the quality of life after transplantation, drug companies and doctors have been actively exploring alternative sources of organs. Instead of using human organs, artificial or animal organs are being considered and developed.

Three kinds of questions occur. Is it safe? Is it morally right or wrong? What does the Christian have to offer to the discussion?

Is it safe?

With the banning of “beef on the bone” and the disappearance from our supermarket shelves of genetically modified (GM) foods and additives, it’s clear that the public is deeply concerned about the safety of food and technological developments. The history of HIV and AIDS has warned us of the threat of pandemics and modern forms of “plagues” against which there may be little treatment or cure. BSE, CJD are recognised diseases, not esoteric names from obscure scientific journals.

The problem with taking organs from animals is the risk of the release of retroviruses. All of us, animals and humans alike, carry various retroviruses in our bodies. They are inert and apparently harmless, until and unless they are triggered by a foreign invasion by things like a transplanted organ. Once the retrovirus is released, there is no certainty that the results can be treated or controlled. Many notable scientists are extremely fearful that transplanting organs from animals may lead to a new form of “plague” against which humankind would be helpless and vulnerable.

The first test in any and every consideration of xenotransplantation is that of risk and safety. Thus far there is not sufficient evidence to warrant proceeding with such a transplant. The problem is that we may not discover the real risk until we perform such a transplant, but, if we do, the results may be dangerous for us all.

Is it morally right or wrong?

Behind the purely pragmatic questions of risk, safety and efficacy, lies a cluster of moral issues. These fall into two broad categories: concern about animals and the problems of pluralism.

1. Animal Issues

We all recognise that different animals have different capacities and levels of intelligence. The danger is of the so-called

“pathetic fallacy”, where we imagine that an animal is feeling the same kind of things that human beings experience. Our dog’s smile may be more wind than an expression of pleasure. We all agree that animals can and do experience pain, which is why we are concerned about the welfare of animals, the conditions in which they’re bred and kept and the arrangements for animal slaughter. We have high standards and severe penalties for those guilty of cruelty to animals. Most of society draws a distinction between the use of animals for vital medical experiments, where the information gained will make a real difference to human lives, and the testing of cosmetics on animals. We approve the former and reject the latter. We have a raft of legislation controlling what can and cannot be done to animals.²

We are especially concerned about the use of primates like chimpanzees and gorillas. This need not be because of some view of evolutionary relationships, but a recognition that primates have a degree of self-awareness, live and communicate in group contexts and clearly suffer pain and distress both physically and psychologically.

While we do set limits to how we treat animals, most of us still eat them and use their skins for clothes and other products, even inert valves for heart valve replacement operations. Many drugs are developed from animal secretions and these save and preserve human lives. Human lives seem more important than animal lives. But that’s no excuse for the abuse and exploitation of animals. If we eat bacon sandwiches, there seems little difference in the net result from having a pig’s liver transplanted except the nature of absorption.

Apart from a proper concern about the breeding, welfare and humane treatment of animals, there is a concern about changing the nature of the animal species. To what extent is a genetically modified pig still a pig? At what point in the transfer of genes

from humans to animals do we cross an unacceptable line and create a monster? It is interesting to reflect on the morality or immorality of monster creation and why exactly it is wrong.

2. The Problems of Pluralism

It's a truism to observe that we live in a pluralist society. Part of the problem for drafting legislation on the whole area of transplantation is the variety of moral perspectives and the deeply held and entrenched views on the extremes. This is not just the case of the use of animals, but in questions of natural law and technology, rights, duties and responsibilities.

Medical science enables us to do remarkable things. But just because we can do something does not mean that we ought to do it. There is no technological imperative. Many are concerned that doctors are "playing God". Certainly, they have remarkable power over life, death and the use of technology. But we do not reject aspirins for headaches, clothes for comfort or appendectomies when appendixes burst. It is extremely hard to define and describe what is "natural". Some suggest that the distinction between "ordinary" and "extraordinary" means might help us decide what is appropriate or inappropriate medicine. The problem with this distinction is that today's extraordinary technique is tomorrow's ordinary and commonplace treatment.

Western society seems obsessed with the idea of rights. But how far do such rights extend? Philosophers like Peter Singer argue that animals have rights and we need to weigh up the competing rights of humans and animals. The Nuffield Council Report has suggested that while there is no real justification for the notion of animal rights, there is a proper concern for the interests of animals³. These interests must be weighed over and against human needs and wants. Doctors have a duty and responsibility to

preserve human life. For the many folk who are suffering and dying because their organs are failing, there is the possibility of treatment by organ transplantation. But it is not clear that doctors nor society have the responsibility to preserve life at all costs and by all means. In other words, there are limits to what medicine ought to and can provide.

The conflicting nature of rights, duties and responsibilities is obvious in xenotransplantation where the risk and dangers to the public have to be weighed against the need to help individual patients and their families. Even if such animal-to-human transplants were allowed, there would need to be very strict surveillance of the patient and his or her contacts to ensure that no diseases develop and become a serious risk to others. Such life-time surveillance raises issues of individual liberties and freedom. While there are procedures for notifiable diseases, it is unclear as to whether these apply to the risk or mere possibility of disease.

Behind the various moral views and differing perspectives lies a cluster of questions about our attitudes to death, animals, technology, suffering and the allocation of resources.

Some Christian Perspectives

The Garden of Eden was a setting of perfect harmony. Human beings had a responsibility for the animal kingdom to care, protect, name and preserve. The Fall destroyed that harmony and humankind now struggles to treat animals appropriately. The onlooker might well suggest that some of us abuse and mistreat animals, while others seem to regard them as more important than people. After the Flood, there is a clear mandate allowing animals to be used for food, but that is no charter for exploitation and abuse. Nevertheless, human life has and should have priority over animal life. If it's a choice between saving Granny or my dog in a house fire, then Granny should win every time.

Where Christian teaching has much to offer is in looking at death, our fear of dying and the tendency in modern medicine to resist death at all costs. We will all die, so is such resistance wise, necessary or clearly limited? Death is not the end or the worst thing that can happen to people. *Do not be afraid of those who kill the body but cannot kill the soul. Rather, be afraid of the One who can destroy both soul and body in hell.* (Matthew 10:28) There is not just a time to die, but a time when as patients, families and doctors and nurses we let go and allow people to die in peace.

Christians delight in God's gift of knowledge, technology and human discovery, so it is not so much technology itself which is evil, but the ways we use and abuse that technology. There must be appropriate limits to the uses of technology and these relate to the Christian concerns to protect the vulnerable, to do no harm and to do what is good to and for people.

Christians need to try to develop some new perspectives to contribute to the debate over resource allocation. In relation to xenotransplantation, we need a) to draw attention to the risks and dangers of commercial exploitation and pressure, b) to ensure human dignity and integrity, c) to seek to bring relief of suffering to those in pain and distress and those who care for them, and d) to balance the needs and benefits of the individual with the need to protect society as a whole. Our knowledge is limited and we must not seek to go beyond what is safe. The story of the Tower of Babel reminds us of the dangers of human pride and technology. (Genesis 11: 1-9)

Brand new moral problems drive us back to reflect on tried and well-tested values and how to apply them to our modern world and in relation to the dilemmas we face. Discussion, debate, reflection and prayer together will enable us not just to decide for ourselves, but enable us to contribute to the public debate over xenotransplantation.

REFERENCES

1. Advisory Group on the Ethics of Xenotransplantation. (1996) *Animal Tissue into Humans*. Dept Of Health, Her Majesty's Stationery Office, Norwich.
2. Animal Procedures Act 1986.
3. Nuffield Council on Bioethics *Animal-to-Human Transplants: The Ethics of Xenotransplantation*. (1996)

Books for further reading

UK Xenotransplantation Interim Regulatory Authority Annual Report 1997/98

Advisory Group on the Ethics of Xenotransplantation

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David Cook *The Moral Maze* (London: SPCK, 1994)

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