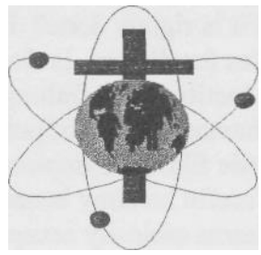
Genetic engineering: How far should we go in modifying animals?

SOCIETY, RELIGION AND TECHNOLOGY PROJECT

Church of Scotland



GENETIC ENGINEERING *How far should we go in modifying animals?*

Human proteins in Sheep's milk?)

Animal organs for human

Mice as models of human disease?

Animal genetic engineering is one of today's key issues. Scientists are increasingly able to make genetic changes in animals, and great benefits are being claimed, but many are asking whether we should be doing it, and how society should control such developments. In 1998 the Church of Scotland SRT Project produced a new book "Engineering Genesis", of a unique 5 year expert working group study of the ethical and social issues in non-human genetic engineering, involving prominent specialists in genetics, ethics, theology, sociology and animal welfare. This information sheet gives a few of our findings on animal issues.

What's New?

For centuries, humans have been doing a type of genetic engineering - selectively breeding animals and plants to enhance particular genetic traits, based on outward appearance, like leaner meat or an higher growth rate. Now it's possible to manipulate specific genes in the laboratory, adding, deleting or altering genes to produce some desired effect. For the first time we can mix genes across very different species. But it's not always straightforward. For example, although this should be more specific than conventional breeding, most attempts to genetically engineer farm animals to enhance production have not been promising, except perhaps in fish. Most applications so far are to find novel uses for the animal. And this raises the question of what are, and are not, acceptable changes for humans to make in animals.

Are We Playing God?

Some say that to tamper with genes at all hi this way is usurping our human position - playing God. How can we finite creatures know enough to make far-reaching changes to the stuff of life without violating what God has created? Are we not also fallen creatures, whose broken relationship with God means we have lost the moral sense of what is appropriate to do in nature? Instead we get carried away with pride at our technological achievements, and do not match them with good judgement about their use. Now this may be true, but why then draw the line at genetics, rather than any other intervention in nature? The inherent power hi genetic changes means we should act with caution and humility, rather than imply an absolute prohibition. Some equate the creation of transgenic species with Old Testament prohibitions of mixing kinds. But is changing one or two genes a wholesale violation? A sheep with one human gene is still primarily a sheep. Is the true nature of something in its detail or its whole essence? If it is in the detail, transgenesis will be unacceptable, as a change to a blueprint. If it is in the essence of the whole creature - a more biblical understanding - then the limited scale of most genetic alterations would not amount to crossing a line, but creating a chimera (a 50-50 genetic hybrid), or cloning by fusing one animal nucleus in the egg of another, might do.