one of which is that you should never harm another human, however weak and vulnerable they are. In this argument any research that destroys a human embryo would be wrong, however great the potential benefit. Cutting across these modes of thinking, some people argue that a key ethical test is to ask whether an action is going against nature, or phrasing it differently, whether it is against the way God has established things. If you believe that God established man-woman married partnerships partly for the purpose of creating children, then a natural law argument would conclude that any intervention in having children is morally problematic if it does away with intercourse between husband and wife. A relative newcomer to the ethical tool box is to look to virtue. Here people seek to develop virtuous characters believing that living well will cause you to reach ethical decisions and perform morally defensible actions. Many Christians point out that Jesus was much more interested in people developing virtues such as love and humility than he was given to issuing codes of practise and methods of tackling difficult questions. Bioethics is therefore important to Christians because of their care for creation and special respect for fellow humans. But bioethics alone will never solve all our questions, nor will Christians always reach the same conclusions when they are involved in bioethical debates. But living close to God, understanding the world he set in motion and thinking thoroughly will put us in a strong position to live well.

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Further information
www.cis.org.uk – Christians in Science

Suggested reading
Bryant, John. – *Beyond Human*. Lion, 2013
Moore, Pete. – *Genetic Engineering*. Wayland, 2007
Moore, Pete – *Stem Cell Research*. Wayland, 2011
Thinking about...

Bioethics

Dr Pete Moore

Biological sciences have proved to be a highly successful way of asking questions about living organisms and gaining greater understanding about the way they work. Biotechnology has taken those findings and used them in our daily lives, creating items from flavour-boosted tomatoes to so-called test tube babies. This chain of events is often portrayed either as wonderful progress or morally wrong. Bioethics has emerged to help us decide between the two.

In broad terms you can split the issues into two areas. First, are some areas so sensitive that they should never be explored? This was initially the case for the sequence of genetic information held in our cells, where in Feb 1975 scientists started a 16-month moratorium on further research, pausing until regulations were in place. It also has implications for the way that we scientists operate, setting guidelines on the use of animals in laboratory studies and of human subjects in clinical trials.

Secondly questions are asked about the application of scientific discoveries, because just knowing how to do something doesn't necessarily mean that doing it is unquestionably a good idea. For example, the agrichemical giant Monsanto has used genetic modification to create a herbicide-tolerant soybean. Farmers can spray to kill all weeds in the field while leaving the crop untouched. They get a high-value, clean crop and we get lower cost food. However this wipes biodiversity from the field and makes the soya hard to remove if it spreads to neighbouring fields. In addition, Monstanto's patent requires that farmers buy new seed from the company each year, therefore raising the costs of production. Others have used similar techniques to create vitamin-enhanced rice and anti-oxidant-enhanced tomatoes. Bioethics gives tools to aid deciding whether each crop should be used, but reaching a decision will never be simple.

The term bioethics was coined by Fritz Jahr in 1926, but the issues stretch back through all of recorded history. Ever since humans began planting crops and controlling the movements of animals, we have been involved in altering the living world. Deciding which individual plants or animals to breed soon starts to manipulate the next generations.

Christians see the desire to shape the world as fitting with the God-given mandate in Genesis 1-3, where humans are exhorted to bring meaning (name), tend (abad) and care for (shamar) creation. Christian bioethics operates on a grounding assumption that we have a huge scope for action, but there is also an assumption that we will find limits and boundaries to some aspects of our endeavour. As with all forms of ethics, bioethics presents a framework for asking questions about controversial issues. A classic mistake is to think that it provides absolute answers. Very often, however, ethical thinking reveals just how complex the issue is, rather than clarifying a moral course of action.

To make things more complex, people start with different underlying assumptions. You can see this if you ask whether technology should play a role in getting pregnant. Some people test this by asking whether the research and technology have good consequences. In this consequentialist argument, experimenting on human embryos is good if it enables previously infertile couples to have babies. Utilitarian ethicists, however, add another layer to the thinking. They recognise that any benefit has come at the expense of harming embryos, and ask that we weigh up the damage and gain. The technique is moral only if the gain outweighs the damage.

Deontologists, take yet another view. For them there are basic rules (‘deon’ = duty) that need to be followed,