Cloning– what does it have to do with us?

Every so often a science story crops up on the t/v or radio news. Some of us will be interested and others will switch off or reach for the remote. In fact, few scientific breakthroughs (a new technique for making stronger concrete bridges, say, or improved dyes for clothing) ever make it onto a news bulletin, even though they may ultimately affect our everyday lives.

The stories that do make the news are often those that upset people, that make them think 'That's not right! They shouldn't be doing that!' *They* of course are the scientists most of us will never meet. But scientists are real people just like the rest of us. If we are to help them make the right choices about what science should be doing in our society, we need to understand the issues involved for ourselves.

One science story that did hit the headlines was about cloning – making an exact copy of an animal. Cloning is not all that difficult to do, because the instructions which control how we develop are in our cells. These instructions, called genes, are found in the nucleus - the control centre - of a cell. To make a clone, the nucleus of an egg cell is removed and replaced with a fresh nucleus taken from a cell of the animal to be cloned. The egg cell, which now has the full set of genes needed to make an exact copy of the animal, is put in the uterus to grow like any other embryo. Frogs have been cloned for many years. The first mammal to be cloned was Dolly the sheep in 1998. (A mammal is an animal such as a human being that has hair and feeds its young on milk.)

Cloning brings out strong reactions in many people, particularly when the discussion is about cloning human beings. Look around the hall and think about whether you'd like to see anyone in here cloned! Maybe you can think of a singer or football player you think would be a good candidate for cloning.

Scientists want to use cloning techniques to help people with illnesses. Polly, a sheep cloned after Dolly, has a human gene in her cells that causes her to make a chemical called Factor IX in her milk. This chemical is used to treat haemophilia, a disease that stops blood clotting properly.

If there were potential medical benefits from cloning full human beings, would that make it right? Cloning a person simply to help someone else medically would mean that a human life would be created for a particular purpose, rather than for its own sake. The cloned person would not be an individual in his or her own right. Many people think that cloning and experimenting on embryos are both very wrong. They believe that life is given by God, and it is not for us to interfere. Other people worry that in the future wealthy people could have themselves copied as they get older.

What limits should we put on the scientists who are experimenting with the cloning process in the fight against disease? For example, there is a rare inherited disease that causes blindness and epilepsy in people. If the nucleus were taken out of a very young embryo with this disease and put into a fresh cell, the cloned baby could grow normally. The original embryo would not continue to grow, so the process wouldn't result in two identical people. This way of treating the disease needs further experiments to find out if it works safely. No one knows for sure that these experiments will work.

We have to decide as a society whether experiments like these should be allowed to go ahead. We need to help our scientists and the politicians who vote on laws to make the right choices. At the moment a few scientists are allowed to carry out experiments on embryos of up to fourteen days old. Should this be allowed at all? If we do allow some experiments they may extend our medical knowledge, but how far should we let our scientists go?

You can make your opinions count by emailing your views to the special government group that decides what embryo and cloning experiments are allowed. The website address is www.hfea.gov.uk. This is the sort of issue that will change the world we live in. So next time a science story appears on the news perhaps we shouldn't be so quick to reach for that remote control!