

CLONING HUMAN BEINGS

By

William Reville, University College, Cork.

It didn't take long. The ink was scarcely dry on the report of the cloning of Dolly the sheep before the American physicist, Dr. Richard Seed, declared that he wanted to clone human beings within 2 years. He believes that 'this will be the first serious step in becoming one with God'. Seed's proposal is outrageous. The debate on the ethics of human cloning has scarcely begun. Even if human cloning was ethically acceptable, it would be wildly premature at this stage from a technical point of view. In any event, human cloning would offend against the sound biological sense of sexual reproduction.

Two organisms are defined as clones of each other if they are genetically identical. Cloning occurs commonly in nature by an asexual process. When an amoeba wishes to reproduce, it simply duplicates its genetic material and divides into 2 daughter cells, each of whom receives an identical copy of the parents genes. The daughters are clones of the parent. Mammals, on the other hand, produce offspring by sexual means.

Mammals contain body (somatic) cells -liver, muscle, etc., and sex cells - sperm in men, eggs in women. Every somatic cell contains a double set of genes, one from the father, and one from the mother. The sex cell contains only a single set of genes, some from the father, some from the mother. When a sperm fertilises an egg, the somatic cells of the offspring again contain full sets of genes from both parents. Sex fulfills several important biological functions. For example, it generates variety by combining characteristics of different people

In the everyday wear and tear of the life of a cell the genetic material suffers an inevitable level of background damage. Because genes are so important, they must be repaired when they become damaged. If the damage is not repaired it must be masked. Sexual reproduction plays a vital role in this process of genetic hygiene. During the sexual process, repairs are made to damaged genetic material. Also, existing damage (mutations) that has evaded the repair machinery can usually be masked. The offspring contains a full set of genes for all characteristics from both parents. Let us say the mother of a child has a defective gene for characteristic X. The likelihood is that the father's gene for X is good. The child will therefore have one good gene for X, which is usually sufficient to produce a normal X characteristic. Sex between brother and sister is taboo because of the greatly increased likelihood that both will have damaged genes for the same characteristics, masked in each, but coming together in the offspring to produce a sick child.

None of the genetic advantages of sex apply to reproduction by cloning. Cloning would be the ultimate incestuous relationship, whereby, in effect, you would marry yourself. It should never be introduced therefore as a widespread option for human reproduction.

Dr. Seed proposes to use the Dolly technique to clone human beings. Briefly, Dolly was cloned as follows. A cell was taken from the adult Dolly's udder and its nucleus (containing the hereditary material) was removed. An egg cell was taken from a second sheep, and its nucleus was replaced by Dolly's nucleus. This egg cell, bearing Dolly's genes, was implanted in the womb of a third sheep, who produced the famous lamb in due course.

But the above story is incomplete. It describes the case that worked, not the many that failed.

Many nuclei were inserted into many egg cells to produce embryos that were implanted into ewes. There was a high rate of miscarriage; 227 transferred adult nuclei were tried to produce one healthy lamb.

It is, therefore, from a technical point of view alone, far too early to carry out human cloning. The high failure rate would be unacceptable in a human context. Also, before cloning could be seriously contemplated for humans, extensive work would need to be done on a species that is much closer to humans than sheep, e.g. the chimpanzee.

But the whole idea of cloning human beings now is outrageous anyway because ethical norms have not been established in this area. It is not at all clear whether cloning of human beings will ever be ethically permissible, under any circumstances. Presently, public opinion is completely opposed to the idea. If a maverick scientist produced a human clone there would be a massive public outcry. Science as a whole would be blamed for 'sinning against nature' and politicians would be forced to introduce draconian controls on all sorts of scientific research.

Dr. Seed wants to clone human beings in order to help infertile people. Of course infertile people should be helped, and a variety of widely acceptable means are already available, ranging from adoption to in-vitro fertilisation techniques. To suggest that the problem of infertility is so desperately urgent that we must rush headlong at human cloning before we are ethically and technically ready, or rationally convinced, is ridiculous.

In the USA, President Clinton has instituted a 5-year moratorium on research into human cloning in federal-funded programmes and has asked for a similar moratorium on a voluntary basis in non-federal agencies. Dr. Seed is prepared to move to another State in order to carry out his plan. It is to be hoped that Dr. Seed's scientific colleagues will be able to persuade him to desist. If not, more effective methods will have to be employed.

Note: See postscript at end of 'The Ethics of Human Cloning' article.

(This article first appeared in The Irish Times, January 19, 1998.)