

## Is human reproductive cloning ethical and legal?

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A clone is an identical copy of something and is a term that first became familiar to the public from the biosciences. Cloning simply means the creation of an exact genetic replica of a small segment of DNA, a cell or a whole organism. Identical twins are an example of human clones that are created naturally. For the last ten years, the subjects of animal and human cloning have been discussed very intensively worldwide. There are mainly two types of cloning: *Reproductive* and *Non-reproductive (Therapeutic)* cloning. Reproductive cloning refers to the process by which an animal is created which had the same nuclear DNA as a previously existing animal. Reproductive cloning has been around for a number of years, with the tadpole being the first animal to be cloned in 1952. Concerns over the possibility of producing a human clone (Reproductive cloning) were increased in 1996 when first cloned adult mammal, Dolly, the sheep was produced by the scientists in Scotland using somatic cell nuclear transfer (SCNT). Many complex legal and ethical questions have been raised since then. The debate of human cloning is a slippery slope, as it has social, religious, political as well as ethical aspects to it. Despite years of intense academic and public debate, there is little clarity. The notion of "human dignity" is commonly The argument is that human reproductive cloning should not be carried out because human clones are also likely to exhibit abnormalities due to

inappropriate epigenetic reprogramming. A significant problem of reproductive cloning is the high rate of deaths and failure to produce viable offspring. More than 100 nuclear transfer procedures could be required to produce one viable clone. For example, Dolly was the only survivor from 277 embryos cloned in the laboratory and produced by Ian Wilmut at the Roslyn Institute in Scotland. Dolly died in 2003 at the age of 6. The procedures used in cloning human embryos are very similar to the cloning of animal embryos. This can be achieved by separating the embryo and duplicating one into two. Using this technique, scientists can make perfectly identical twins. Hall and Stillman attempted to clone human in 1993 without prior approval. In November 2001, scientists from Advanced Cell Technologies (ACT), a USA biotechnology company, announced that they had cloned the first human embryos for the purpose of advancing therapeutic research. In January 2003 a biotechnology group called Clonaid associated with the Raelian movement, a religious sector, announced the birth of a cloned baby named "Eve" but this has never been confirmed independently. The human reproductive cloning would be ethically justifiable in at least some cases involving infertile couples, provided that it could be performed without an elevated risk of anomalies.

Human reproductive cloning is almost universally opposed. Judging from the official documents dealing with the legal aspects of human reproductive cloning there seems to be a nearly worldwide consensus that reproductive cloning is incompatible with human dignity. Taking Islamic jurisprudence principles, such as the rule of necessity for self preservation and respect for human beings, the rule of *la darar wa la dirar* ('the necessity to refrain from causing harm to oneself and others') and the rule of *usr wa haraj*, one may indicate that if human cloning could not be prohibited or opposed, it gives way to various harmful consequences including family disorder, chaos in the clone's family relationships, physical and mental diseases for clones and suffering of egg donors and surrogate

mothers. Although Dolly was a symbol of both the great possibilities of science and bright future in the field of biotechnology, even then most countries do not have specific cloning laws and are moving towards a strict ban on human cloning as far as the production of human being is concerned. International organizations have taken strong stands to prevent human reproductive cloning and inheritable genetic modification. The Council of Europe's Convention on Human Rights and Biomedicine (1997) bans inheritable genetic modification, human reproductive cloning, and research cloning. UNESCO, the European Parliament, the Group of Eight industrial nations, the World Health Assembly, and the United Nations have also adopted various prohibitions on human reproductive cloning. On December 12, 2001 the United Nations General Assembly began elaborating an international convention against the reproductive cloning of human beings. To date, human reproductive cloning and inheritable genetic modification are illegal in nearly 50 countries. Similar legislation is pending in other nations.

In the **UK**, the Human Fertilization and Embryology Act 1990 completely prohibits certain activities like cloning. As per this law, embryo 'means a live human embryo where fertilization is complete. The problem was pointed out that 'the reconstituted cell' which grew into Dolly was never fertilized and, there was no fusion of egg and sperm; it was artificially created. The British government introduced legislation in order to allow licensed therapeutic cloning in a debate in January 2001 after an amendment to the Human Fertilization & Embryology Act 1990. However on November 15, 2001 a pro-life group won a High Court legal challenge that effectively left cloning

unregulated in the UK. Currently therapeutic cloning is allowed under license from the Human Fertilisation and Embryology Authority. In the **United States**, there is no law regulating human cloning. Most Americans oppose human cloning for reproductive purposes, citing moral reasons. But the newest battle for "therapeutic" cloning, where embryo cells are used to develop cures for Alzheimer's, Parkinson's, spinal cord injuries and cancer, has scrambled alliances and intensified debate about technology and the origins of life. **Australia** had prohibited human cloning, though as of December 2006, a bill legalising therapeutic cloning and the creation of human embryos for stem cell research passed the House of Representatives. In **Asia** (China, India, Thailand and Vietnam), human reproductive cloning is prohibited while cloning for therapeutic or research purposes is allowed.

Amongst the various fields of scientific technology, biotechnology has advanced immensely and offers a wide range into the scientific research such as human cloning which is basically an out come of stem cell research and related to the production of a new individual from the embryo of an existing one. Reproductive cloning is not used as a safe mode to reproduce humans because of many negative aspects and legal complications. Most European countries have already banned it, and others are considering a proscription. While allowing fundamental research in the field to progress, we need a wide debate on human cloning. We need to think about what, if any, circumstances might warrant cloning, as well as the circumstances under which it should never be allowed.

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