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Why Human Cloning Must Be Banned Now

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Since Scottish scientists succeeded in cloning the sheep known as Dolly, the prospect of human cloning has catapulted its way into the public consciousness. In early 2000, an Italian and a U.S. scientist announced their intention to clone human babies for infertile couples. The duo recently announced their plans to begin implanting cloned human embryos into women – a step they may have already taken by the time this article is published. On July 31, 2001, the U.S. House of Representatives passed the "Human Cloning Prohibition Act of 2001" (H.R. 2505) by a bi-partisan margin of 265-162 with support from liberal, progressive, conservative, pro-life, and pro-abortion members. This bill, which Rep. Bart Stupak (D-MI) and I wrote, is designed to ban human cloning for both "research" and "reproductive" purposes. Despite the fact that President Bush said he would sign this bill into law, Senate Majority Leader Tom Daschle (D-SD) prevented the bill from even being considered in the Senate. On Sunday, November 25, 2001, scientists at Advanced Cell Technology of Worcester, Massachusetts announced that they had created the first human embryo clones for the purpose of destructive research. It is now more important than ever to ban human cloning.

H.R. 2505 specifically bans "asexual reproduction" which is accomplished by "somatic cell nuclear transfer" technology, the technique that was used to produce Dolly. The bill does not ban scientifically and medically useful cloning practices such as the cloning of DNA fragments (molecular cloning), the duplication of tissue or cells in culture (cell cloning), or whole-organism or embryo cloning of non-human animals. Nor does the bill ban laboratory practices such as parthenogenesis or "twinning."

While most cloning advocates want to create cloned embryos for embryonic stem cell research (and oppose the creation of clones who would be implanted and carried to term), others are racing to produce the world's first cloned human baby. Indeed, scientists such as Panos Zavos and Severino Antinori stated in mid-2000 that they expected to begin implanting cloned human embryos into women within the next several months. They were enthusiastic about pursuing such a feat despite the serious genetic problems encountered in animal cloning, the known risks to the mother, and the great potential for serious birth defects. Ninety-five to ninety-seven percent of animal cloning attempts still end in failure, and the scientists who cloned Dolly failed 276 times before they succeeded in producing a single live-born clone of an adult sheep. Most scientific experts believe that attempts to clone humans will result in even higher failure rates. Scientists such as Ian Wilmut (who produced Dolly) and Rudolf Jaenisch (of MIT) have concluded that the most likely cause of abnormal development in cloned animals is faulty reprogramming of the genome. When the nucleus of a somatic cell is introduced into an enucleated egg, the DNA in the nucleus has to be "reprogrammed" in order for a human being to develop fully. If this reprogramming of the nuclear DNA does not go exactly right, abnormal gene expression of one or some of the more than 30,000 genes can result.

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Fortunately, the majority of Congress is outspokenly opposed to human cloning for reproductive purposes. However, as evidenced in Senator Daschle's move to delay consideration of H.R. 2505, there is no such consensus when it comes to banning the cloning of embryos for research purposes. However, this type of human cloning is also grossly unethical for at least three reasons.

First, research cloning can only be justified by the utilitarian calculus that prizes the lives of the millions of people who could potentially be treated or cured as a result of the research over the lives of the embryos who would be destroyed in order for the research to proceed. However, it is never ethical to sacrifice one human life for the real or potential benefit of others. Second, it is unethical to view a human being – regardless of its age – as a means to an end. Even supporters of embryonic stem cell research and other embryo research have long been opposed to the "special creation of embryos solely for the purpose of research." However, this is precisely what is involved in research cloning. To evade this criticism, proponents are now beginning to claim that human cloning for purposes of research does not create human embryos, but only "activated cells." Others are urging that the term "cloning" should not even be used to refer to this process. As one scientist from Johns Hopkins stated in his recent testimony before the Senate, research cloning should be called "nuclear transplantation,"not "cloning." Many in the Senate have also sought to abandon the phrase "therapeutic cloning" (another popular term for research cloning) because it refers to cloning and could therefore conjure up opposition.

Third, research cloning will undoubtedly lead to a new exploitation of women. In order to manufacture enough cloned embryos to create a sufficient number of viable stem cell lines, scientists will need to obtain massive quantities of women's eggs. To do so, women must be injected with superovulatory drugs and undergo an invasive procedure. The *Washington Post* reported recently that the side effects of the injections are abdominal pain and nausea; in 3 to 5 percent of cases hyperstimulation of the ovaries occurs, causing severe abdominal pain, and on rare occasions surgery is required which may leave the patient infertile. Contrary to women who assume the risks associated with egg donation in order to undergo *in vitro* fertilization, women who take such risks for the purpose of research cloning would not be motivated by the desire to have a child, but, oftentimes, by the desire for financial gain. Indeed, Advanced Cell Technology paid $3,500 - $4,000 to each woman who donated eggs for their failed cloning experiments. It is likely that women of lower economic means will be exploited in this way.

> **"Human cloning for any purpose opens the door to a 'Brave New World,' and we must shut that door now."**

In addition to the above ethical considerations, research cloning should be forbidden because it increases the likelihood of reproductive cloning. Preventing the implantation and subsequent birth of cloned embryos once they are available in the laboratory will prove to be impossible. The most effective way to ban reproductive cloning is to stop the process at the beginning, with the creation of cloned embryos. Since the overwhelming consensus is that reproductive cloning should be prohibited, steps must be taken to ban research cloning as well. It is nonsensical to believe that we can ban one without also banning the other.

Finally, research cloning is likely to fall woefully short of its alleged promise. The *Washington Post* business section recently quoted William Haseltine, chief executive of Human Genome Sciences, Inc., as saying (with regard to embryonic stem cell therapies) that "the timeline to commercialization is so long that I simply would not invest. You may notice that our company has not made such investments, and we have been offered the opportunity many times." Furthermore, a recent *New Scientist* editorial stated that "policy makers continue to enthuse about therapeutic cloning even though the majority of scientists no longer think it is possible or practical to treat patients with cells derived from cloned embryos. They have already moved on to investigating the alternatives." While embryonic stem cell research has yet to produce a single therapeutic modality that has proven to be clinically beneficial, the morally unproblematic alternative of adult stem cell research has already yielded several therapies that have been used to treat cartilage defects in children; restore vision to patients who were legally blind; relieve systemic lupus, multiple sclerosis, and rheumatoid arthritis; and cure severe combined immunodeficiency (SCID). Finally, given that most scientists have predicted that human clones would be plagued with undetectable but harmful genetic abnormalities, such abnormalities might also be present in the tissues or cells derived from cloned human embryos. There are no current or foreseeable methods available to assess whether the genome of a cloned embryo is free of such defects.

Human cloning is a benchmark for public policy, and the legislative decisions made regarding it will significantly impact the future of many areas of scientific research. The public is being told that research cloning is good because it will yield miraculous cures; however, even if scientists conclude that such cures will likely not result, research cloning will still be defended by those who wish to justify it on the basis of "scientific freedom." This appeal will also likely be heard in the coming debates over artificial intelligence, germline therapy, transgenics, etc. However, scientific freedom is not a fundamental right. If we fail to ban all forms of human cloning, society's continued ability to regulate or ban future scientific research will be seriously diminished in the name of autonomy and utilitarianism.

Human cloning for any purpose opens the door to a "Brave New World," and we must shut that door now. The Senate will likely take up this legislation in February or March of 2002. However, we who favor a comprehensive ban on human cloning will have a tough fight on our hands, as the bill must now compete with Senator Dianne Feinstein's recently introduced bill to ban only reproductive cloning. You can help make a difference! Contact your Senators by phone, e-mail, or letter. Please voice your support for H.R. 2505 at town meetings and in op-eds and letters to the editor in your local papers. ■