

# Genetic engineering industry and humanity



**ASSIGN  
BUSTER**

What is our government's stance on the genetic engineering of humans?

According to the links consulted, the government of the United States is cautiously allowing some genetic engineering research to proceed, such as gene transfer research seeking to correct or treat disease.

There does not appear to be a coherent policy on permitting trait selection for reproduction purposes though ethical questions of this nature are starting to be asked. President Bush, has said " Our children are gifts to be loved and protected, not products to be designed and manufactured ", which is certainly a more definitive stance than is present in regulation or law presently, and so appears opposed to genetic engineering for the purpose of selecting traits of offspring.

<http://www.whitehouse.gov/news/releases/2002/04/20020410-4.html>

Summary of Regulatory environment.

What is our government's stance on cloning?

At present, there isn't any specific law banning Human cloning per se. However, due to the extreme public response and with President Bush's ban on federal funding for such research, it could be said that the government is hostile toward human cloning.

This stance is based on the ethical consideration of Human Life, and was summed up by President Bush:

I believe all human cloning is wrong, and both forms of cloning ought to be banned, for the following reasons. First, anything other than a total ban on human cloning would be unethical. Research cloning would contradict the

<https://assignbuster.com/genetic-engineering-industry-and-humanity/>

most fundamental principle of medical ethics, that no human life should be exploited or extinguished for the benefit of another. (Applause.)

Yet a law permitting research cloning, while forbidding the birth of a cloned child, would require the destruction of nascent human life. Secondly, anything other than a total ban on human cloning would be virtually impossible to enforce. Cloned human embryos created for research would be widely available in laboratories and embryo farms. Once cloned embryos were available, implantation would take place. Even the tightest regulations and strict policing would not prevent or detect the birth of cloned babies.

Third, the benefits of research cloning are highly speculative. Advocates of research cloning argue that stem cells obtained from cloned embryos would be injected into a genetically identical individual without risk of tissue rejection. But there is evidence, based on animal studies, that cells derived from cloned embryos may indeed be rejected.

Yet even if research cloning were medically effective, every person who wanted to benefit would need an embryonic clone of his or her own, to provide the designer tissues. This would create a massive national market for eggs and egg donors, and exploitation of women's bodies that we cannot and must not allow.

I stand firm in my opposition to human cloning. And at the same time, we will pursue other promising and ethical ways to relieve suffering through biotechnology. This year for the first time, federal dollars will go towards supporting human embryonic stem cell research consistent with the ethical guidelines I announced .....

## President's Bioethics Council report on Cloning

What are some possible new genetic modifications we are likely to see soon?

We are likely to see an explosion of gm crops and animal food products and even ' biopharm' ( Animals designed so they produce drugs or other chemicals) breeds of certain species. For example, according to the FDA, " new versions of familiar foods--ones that are custom " built" to improve quality or remove unwanted traits. Insect-resistant apples, long-lasting raspberries, and potatoes that absorb less fat are among the more than 50 plant products under study now that are likely to reside soon on grocers' shelves."

According to press reports, genetic researchers studying the limited gene pools of isolated communities such as the Amish and Mennonites are accumulating valuable insight into the genetic markers of a number of diseases including Sudden Infant Death Syndrome. This research may bring about numerous genetic treatments for these diseases.

Genetic research in limited Gene pool populations is yielding tremendous research benefits. From the Associated Press.

## University of Virginia discusses future uses of Biotechnology

What are some laws that may be introduced to handle the legal issues of genetic engineering? Look at both Human and agriculture laws.

Laws or regulations on labeling, bio-containment and review processes for genetically modified (transgenic) animals and plants are likely in the near future. In Canada herbicide-resistant canola is becoming a " super-weed" in

prairie areas. Stricter farming regulations and requirements the GM crop must meet are likely to result.

The US Senate moved in a near unanimous manner to begin the process of preventing the world portrayed in the film Gattica from becoming a reality by passing S306 " Genetic Information Nondiscrimination Act of 2005" Which would prevent discrimination in employment or insurance on genetic basis. Something of this magnitude probably needs to be approached as an amendment though. Legislation can be repealed. Currently this measure is waiting on action in the House of Representatives. The bill is supported by the NIH and by the whitehouse.

Other laws designed to prohibit the traffic and trade of human beings or organisms based on human genetic code, as well as attempts to create human/animal hybrids are probably to be expected, and are on the Policy agenda of the President's advisory Committee for Bioethics.

Director of National Human Genome Research Institute comment on Senate Bill.

Contains the targeted legislative goals of the Presidential Administration's Council on BioEthics.

## JOURNAL

Stopping cloning or genetic engineering would be nearly impossible now. The ' idea' is already established, and it has been shown that " it can be done." Suppression of this technology would require a worldwide coalition more effective than the current anti-proliferation mechanisms set up for nuclear technology. After World War II and the power

of Nuclear weapons began to be understood, the United States attempted to suppress the information to prevent other nations from developing their own programs. One after another of the allies developed their own weapons following the Soviet Union's Development.

Suppression has been mostly successful only with nations volunteering to remain non-nuclear or accepting large economic rewards for remaining so. However three (possibly five) nations have developed weapons programs (Pakistan, India, North Korea) in the last 6 years; additionally, Israel is suspected of having undeclared weapons for some time, and Iran has announced the intent to develop a peaceful nuclear program for power production, which some suspect would be a cover for a weapons program. Research into this area by 3rd world countries is made easier for knowing that the result is attainable.

The difficulties in monitoring become apparent when one considers that the world was taken by surprise when both Pakistan and India announced their new capabilities within months of each other. The United States admitted to being flatfooted and having no intelligence at all about the developments. Recent experience in Iraq in attempting to track and account for Sadaam's mobile chemical laboratories and work centers show that similar facilities used for genetic research could be very difficult to find and shut down.

The frightening thing about technology is that humanity typically utilizes it in conflict before turning it to more peaceful purposes; this has been true of all our history, but is especially characteristic of modern technology. Interchangeable parts, making mass production possible, was first used to produce thousands of rifles. Rockets were first used to deliver explosives,

long before they were used for exploration. Computers were first used for calculating artillery ballistics, and then for assisting in simulations of various weapons effects (and still are used for this).

Aircraft, though initially a curiosity, were quickly developed from little more than kites to devices that have come to dominate modern warfare in a space of two decades and continue to become more sophisticated in both military and civilian applications. Genetic Engineering, has so far been pacific in its uses in the 21st century but the closely related eugenics sciences, especially in Nazi Germany, have ominous implications for the mis-use of geneticscience. Having direct access to genetic materials of humanity and other organisms, some may attempt to tailor disease organisms to attack certain genotypes in an effort to eliminate an ethnic enemy or “inferior.” Doubly troubling is the emergence of useful nanotechnology; together nanotechnology and genetic engineering could create complementary and wonderful advances or equally horrible and devastating weapons that can wreak havoc not only on human life but the entire biosphere and the current balance of species in the environment.

Indeed, genetic engineering may be a difficult test of humanity’s maturity. Even peaceful uses require the utmost scrutiny. Because we don’t know all the rules in this field yet, unintended consequences are certain to occur. This field will require the best from our scientists, researchers, and regulatory agents to ensure that the promise of the technology is realized while minimizing or eliminating its dangers.