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Remarks: “Law & Ethics in a Brave New World:

What Should Government Do About Cloning and Stem Cell Research?”

It is a pleasure to join you today to discuss how the federal government should address existing and emerging biotechnology issues.

The twentieth century was one of remarkable advances in health care, science, and so many other fields.

America, with her free markets and open economy, has truly proven to be a land of innovation and opportunity.

Perhaps nowhere was this more evident over the past century than in the practice of medicine and the treatment of patients. Life expectancy in America has improved dramatically, with advances in vaccines, surgery, and anesthesiology.

These advances did not happen in a vacuum though. In their research, scientists and medical professionals were bound within a widely-respected, and widely-acknowledged ethical framework.

At no time were scientists unfettered by ethical constraints in their research. Respectable scientists have never had carte blanche on research.

Scientists don't have to be Christian or Jewish or even have a belief in God to be successful within the ethical framework of their profession, but they have always had a traditional, professional moral code, by which all researchers and medical professionals have been bound.

The framework stemmed from the ancient guidance of the Hippocratic Oath—that famous oath taken for millennia by medical researchers and practitioners, which Hippocrates summed up elsewhere:

“As to diseases, make a habit of two things—to help, or at least do no harm.”

What was Hippocrates getting at?

Hippocrates was getting at the fact that an informed, moral conscience must especially guide one's actions in the fields of medicine and research.

The reason why Hippocrates says this is that even in the ancient, pre-Christian era, enlightened philosophers were able to recognize that human beings possess a unique value, a value far exceeding that of other creatures.

As such, since ancient times, it has been recognized that human beings are an end in themselves, and cannot be used as a means to an end.

So, when a physician assists a patient, his or her intention must be to help the patient. In some cases—such as chemotherapy—the attempt to help may involve some long- or short-term harm to the patient, but the goal is to restore the patient to health.

In recent years however, the professional moral code has faded as a new skepticism among scientists, in particular, has emerged:

Skepticism about God; Skepticism about the sacredness of human life; Skepticism about the value of human life; Skepticism about the very ethical code—the Hippocratic Oath—that has guided medical professionals and researchers for more than two millennia; and even Skepticism about when life begins.

Today, some scientists—perhaps still uneasy about, or trying to justify, the thought that they are killing young humans—place an arbitrary starting point for human life.

For some that point is when the child completely leaves her mother's womb, as we see with defenders of Partial-Birth Abortion. For others, it is at some point during gestation, but well after the embryonic stage.

However, if you really get down to the science—and pure science is merely about the pursuit of truth—you see that life begins at the beginning.

In fact, science unambiguously answers that human life begins at the beginning, whether through natural or artificial means.

A young human embryo is a distinct new being. It is not a dog or a mouse; it is a unique human being, albeit a very, very young one. That is how science answers the question of “When does the life of a human begin?”

Then, we are confronted with the great moral question of our age: “Do we respect human life?”

Do we want a culture that embraces life, or do we want a covenant with death?

If we respect human life, then we must strive to cherish and protect it. Accordingly, a respect for human life mandates that we pursue cures through ethical research—meaning research that treats all humans as ends in themselves.

Along these lines, I have found that people are much more receptive to life and favor morally-sound research, such as adult stem cell research, when they realize that young human lives hang in the balance.

We have seen that research can work very well within ethical boundaries, and at times it is

appropriate for the government to play a role to ensure that research is ethical.

During this period of great skepticism existing among scientists on matters of moral guidance in research, I believe the “government of the people, by the people, and for the people”—as Lincoln phrased it—has the responsibility and duty to step in and provide boundaries to ensure that human life is afforded full respect in research.

Let me be clear: I fully support medical and scientific research that is ethically sound. I believe the government should support such research, and I have supported increasing the budget for the National Institutes of Health.

Moreover, I believe we should continue funding such research, even with the tight budgets and deficits of recent years.

However, the federal government has only a finite number of taxpayer dollars. We cannot fund every research project. We should only fund those research projects that are ethically sound and promising.

Clearly, the most promising research with the most immediate applications for treating humans is to be found in adult and other non-destructive, non-embryonic research.

Currently, there are no clinical applications with embryonic stem cells.

However, there are at least 58 current clinical applications of Adult Stem Cell treatments in Humans. —I have to say ‘at least’ because more are being published every day.

With Adult Stem Cells, there are treatments for:

- Cancers
- Neural Degenerative Disease and Injury
- Ocular Disease
- Auto-Immune Disease
- Cardiovascular Disease
- Anemias and other Blood Conditions, like Sickle cell anemia, and
- Wounds and Injuries, like gangrene

With the numerous advances using adult stem cells, one wonders at times why there is such a push by scientists for federal funding of destructive human embryonic stem cell research and human cloning—which is also known as somatic cell nuclear transfer, or just SCNT.

Bear in mind that there are no federal prohibitions on destructive human embryonic stem cell research, as witnessed by various state efforts. However, despite there being no cures, there is a continual call by scientists for finite taxpayer dollars to be used for their human-destructive research.

Sadly, in these scientists’ efforts, they often prey upon the hopes and fears of the ill and their

families. They make all sorts of claims to the effect that unless action is taken, research will be stymied and cures for the sick will be delayed.

Typically, these stories highlight California's Proposition 71, which allows for scientists to do as they wish with an abundant source of state taxpayer funds and no strings attached, as an exemplary model for an enlightened society.

Focusing on cures, the stories raise hopes, but disappoint the gravely ill.

Rarely do these scientists talk about the work of scientists like Denise Faustman at Massachusetts General Hospital and Harvard Medical School.

Through her diabetes research, Dr. Faustman has developed a promising technique, using ethically-sound non-embryonic sources, that regenerates the diabetic pancreas, showing "permanent disease reversal."

Dr. Faustman's work has already won Food and Drug Administration approval for limited testing of this technique on people.

Dr. Faustman's research is absolutely "terrific," according to Robert Goldstein, chief scientific officer for the Juvenile Diabetes Research Foundation (JDRF). Mr. Goldstein paid the compliment to Dr. Faustman during a friendly exchange in a Senate hearing that I chaired last July.

Nevertheless, JDRF has rejected Dr. Faustman's grant applications three times. Three times. Why did this happen?

As noted in a recent National Journal article:

"If Faustman's work is proved valid, it could lead to a cure for juvenile diabetes at a modest cost, generating incalculable benefits for millions of people around the world ... cut revenues for pharmaceutical companies, which take in roughly \$1.3 billion a year in the United States from the sale of insulin-related products ... And ... affect funding for rival researchers in the \$500 million-a-year diabetes research sector, including those active in JDRF."

While I oppose destructive embryonic stem cell research because it results in the untimely termination of a young human life; it also seems to me that we should shift finite taxpayer funds to areas of research that will most quickly work to alleviate suffering—especially when such research is ethically-sound. This is something we can all support.

With so many promising avenues of ethical research, on which we can all agree, there are two pieces of federal legislation in the area of bioethics, which I am advocating:

- (1) The Human Cloning Prohibition Act (S.658); and
- (2) The Human Chimera Prohibition Act (S.1373), which I have recently introduced.

These two pieces of legislation, if enacted, would serve to steer science in an ethically-sound direction toward cures.

First, the bipartisan Human Cloning Prohibition Act, which I have introduced with Sen. Mary Landrieu would be an effective ban on human cloning.

This legislation is the only bill in the U.S. Senate that would ban cloning and is cosponsored by over one-quarter of the Senate.

Counterpart legislation has passed the U.S. House of Representatives twice by large margins.

The bill would also bring the United States into conformity with the recent vote at the United Nations, where the General Assembly called on all member states “to prohibit all forms of human cloning” by a strong 84 to 34 margin.

Our cloning ban is necessary because without it, anyone with the know-how and resources can—and will—proceed to experiment on and clone human beings without worrying about any legal repercussions.

Through this legislation, we take a stand against those that would turn young human beings into commodities and spare parts. We should not use human life for research purposes.

Let there be no doubt. Science affirms that the young human, at his or her earliest moments of life, is a human.

It is wrong to treat another person as a piece of property that can be bought and sold, created and destroyed, all at the will of those in power.

The issue of human cloning—and specifically how we treat the young human—will determine the kind of future we will give to our children and grandchildren.

The essential question is whether or not we will allow human beings to be produced, to pre-ordained specifications, for their eventual implantation or destruction, depending upon the intentions of the technicians who created them.

Now, there are some who will continue to tell you that they oppose ‘reproductive cloning,’ but then turn around and call for ‘therapeutic cloning’ or ‘SCNT.’ Whether intentional or not, to argue that there are different ethical categories of human cloning creates a distinction that simply does not exist.

All human cloning is ‘reproductive.’ The question is simply: What do you do with the young, cloned human?

Do you implant it and bring it to birth—like the sheep Dolly—or do you do research on and kill the young human being, as advocates of so-called ‘therapeutic’ cloning would have us do?

Any other so-called human cloning bans, outside of the Brownback-Landrieu Human Cloning Prohibition Act, are not enforceable.

Once the young human has been cloned, you cannot distinguish it from any other human embryo produced by IVF or embodied sexual intercourse.

If so-called ‘therapeutic’ human cloning proceeds—and there are no laws in the U.S. against it—one of these human clones will be implanted, and there is nothing we can do to stop human cloning once we reach this point.

Even if we detected a clonal human pregnancy, nothing could be done about it. Any remedies or punishments would be highly unfeasible.

President Bush has been unambiguous in his call for the enactment of our legislation, and I am certainly grateful for his support.

The second piece of bioethics legislation, which I am advocating, is the Human Chimera Prohibition Act (S.1373), which would prohibit the creation of the most ethically challenging human-animal hybrids.

Human chimeras—long considered science fiction or mythology—have become a reality. These hybrid creatures blur the line between humans and animals and gravely compromise human dignity.

As reported by National Geographic in January, “Chinese scientists ... in 2003 successfully fused human cells with rabbit eggs. The embryos were reportedly the first human-animal chimeras successfully created.”

Americans have always recognized that humans possess a unique dignity.

To create a human that is less than fully human or to create an animal that possesses particularly unique human aspects—such as a human brain or human reproductive organs—is a violation of this dignity.

Further, there are public health concerns that should lead us to place limits on chimeras.

For example, there are an increasing number of infections moving from animal populations into humans—such as the Avian Bird Flu or SARS—that threaten human health. Chimeras can make it easier for the transmission of both human and animal diseases.

The Human Chimera Prohibition Act is a modest piece of legislation that both (1) addresses the human-animal hybrid challenge to human dignity, while also (2) recognizing that some types of chimeras: raise fewer ethical questions; do not compromise human dignity; and may present opportunities for ethical medical research and advances.

Examples of these other types of chimeras include animals created with human elements—excluding human brains and reproductive organs—and the use of animal parts, such as heart valves from pigs, being transplanted into human patients. Chimeras of these types would be allowed under the legislation.

This legislation is complimentary to the cloning ban, and is meant to be a consensus piece of legislation. It was drafted with input from both sides of the political spectrum and only bans the most egregious chimeras. Specifically, the legislation only bans:

- (a) human embryos that are not fully human;
- (b) human eggs fertilized with animal sperm;
- (c) animal eggs fertilized with human sperm;
- (d) human eggs with an animal nucleus;
- (e) animal eggs with a human nucleus;
- (f) eggs with both human and animal chromosomes;
- (g) animals with human reproductive organs; and
- (h) animals with human brains.

Now is the time to act on the chimera bill; most scientists don't want to go down this route. This legislation presents a way for both sides to open a dialogue on significant bioethics issues.

I would like to conclude my remarks today with the thought that it is time for all of us to pause, think, meditate, pray and take stock of where we are in the area of bioethics.

We really are moving at a frightening pace toward that world, so frighteningly described in Huxley's *Brave New World*.

It is our duty and responsibility to look out for the downtrodden and those who have no voice. They are the ones who are getting trampled now, and they are the ones that will be hurt the most if we continue to move toward the *Brave New World*.

Thank you very much, and may God bless you.