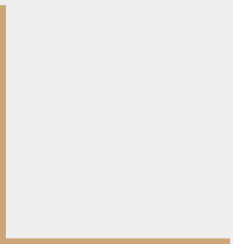
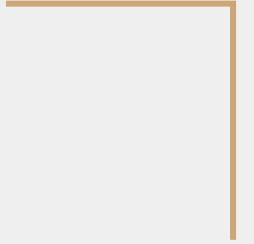


The Ethics of Embryonic Stem Cell Research

Introduction



GOALS

1. Articulate and evaluate the central moral principles in support of human embryonic stem cell research.
2. Articulate and evaluate the central moral principles against human embryonic stem cell research.
3. Understand some new technological approaches that might resolve this moral debate.

OUTLINE

1. A Brief History of a Political Impasse
2. The Moral Case for Human Embryonic Stem Cell Research
3. The Moral Case against Human Embryonic Stem Cell Research
4. A Technological Resolution?
5. Conclusion - Reframing the Debate



A BRIEF HISTORY OF A
POLITICAL IMPASSE



A Brief History of a Political Impasse

1998

Thomson
isolates human
embryonic stem
cell.

2001

President
George W.
Bush's executive
order

2009

President Barack
Obama's
executive order

A Brief History of a Political Impasse

“If human embryonic stem cell research does not make you at least a little bit uncomfortable, you have not thought about it enough.”

A Brief History of a Political Impasse

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A Brief History of a Political Impasse

“[We] should allow federal funds to be used for research on these existing stem cell lines, where the life-and-death decision has already been made...[this would enable] us to explore the promise and potential of stem cell research without crossing a fundamental moral line by providing taxpayer funding that would sanction or encourage further destruction of human embryos...”

A Brief History of a Political Impasse

“If we’re trying to study the complexity of the immune system using these cells, [this number] won’t even begin to give us a flavor of the whole spectrum of humans in our society.”

Diane Krause, Yale University School of Medicine

A Brief History of a Political Impasse

“There's a moral line that's been crossed by the President, and it was an important one, I think. And that was a principle that has even been upheld in our federal laws on fetal tissue research after abortions; that it was never the policy to say you could fund research where life was destroyed at any stage for the sake of that research.”

Richard Doerflinger, deputy director of pro-life activities with the U.S. Conference of Catholic Bishops

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A Brief History of a Political Impasse

“...our government has forced what I believe is a false choice between sound science and moral values. As a person of faith, I believe we are called to care for each other and work to ease human suffering. The majority of Americans...have come to a consensus that we should pursue this research. That the potential it offers is great and with proper guidelines and strict oversight, the perils can be avoided.”

A Brief History of a Political Impasse

NIH FUNDING HUMAN STEM CELLS, FY 2002-2008
(IN MILLIONS)

SOURCE	2002	2003	2004	2005	2006	2007	2008
EMBRYONIC	\$10	\$20	\$24	\$40	\$38	\$42	\$88
NON-EMBRYONIC	\$171	\$191	\$203	\$199	\$206	\$204	\$297

A Brief History of a Political Impasse

NIH FUNDING HUMAN STEM CELLS, FY 2009-2015
(IN MILLIONS)

SOURCE	2009	2010	2011	2012	2013	2014	2015
EMBRYONIC	\$142	\$165	\$123	\$146	\$146	\$166	\$180
NON-EMBRYONIC	\$397	\$414	\$394	\$504	\$431	\$443	\$445

A Brief History of a Political Impasse

1997

1998

2001

2009

2013

SCNT
and
Dolly
the
sheep

Thompson
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human
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President
George W.
Bush's
executive
order

President
Barack
Obama's
executive
order

SCNT
and
human
embryos

A Brief History of a Political Impasse

The debate(s) about human embryonic stem cell research are debates about important values...

1. Knowledge concerning human development
2. Therapeutic possibilities for individuals suffering from disease, disability, and injury.
3. Federal funding for public health.
4. Embryonic life.



THE MORAL CASE FOR hESC RESEARCH



The Moral Case for hESC Research

There are two primary *moral* arguments for hESC research:

1. Advancing Scientific Understanding of Developmental Biology
2. Advancing Therapeutic Modalities

The Moral Case for hESC Research

Advancing Scientific Understanding of Developmental Biology

1. Studying hESC will enable scientists to grasp more clearly the various processes and mechanisms that are involved in embryological development.
 2. Achieving scientific understanding is itself a moral good that ought to be promoted.
-
3. So, scientists ought to pursue hESC research.

The Moral Case for hESC Research

Advancing Scientific Understanding of Developmental Biology

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 2. Achieving scientific understanding is itself a moral good that ought to be promoted.
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3. So, scientists ought to pursue hESC research.

The Moral Case for hESC Research

Advancing Therapeutic Modalities

1. Studying hESC could lead to the discovery and production of therapies that effectively address human suffering.
 2. It is morally good to pursue research that leads to the discovery of therapies that effectively address human suffering.
-
3. So, scientists ought to pursue hESC research.

The Moral Case for hESC Research

Advancing Therapeutic Modalities

1. Studying hESC could lead to the discovery and production of therapies that effectively address human suffering.
 2. It is morally good to pursue research that promotes the discovery of therapies that effectively address human suffering.
-
3. So, scientists ought to pursue hESC research.

The Moral Case for hESC Research

So, there are two basic arguments for hESC research both of which lead to important questions about our moral responsibilities.

1. Advancing Scientific Understanding of Development Biology
2. Advancing Therapeutic Modalities



THE MORAL CASE AGAINST
hESC RESEARCH



The Moral Case against hESC Research

1. hESC research involves the intentional destruction of living human embryos.
 2. The human embryo is an innocent human person.
 3. The intentional destruction of innocent human persons is intrinsically morally wrong.
-
4. Hence, it is intrinsically wrong to destroy a human embryo.

The Moral Case against hESC Research

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The Moral Case against hESC Research

“Most humans practice a kind of dualism, seeing a distinction between mind and body. We all automatically confer a higher order to a developed biological entity like a human brain. We do not see cells, simple or complex--we see people, human life. That thing in a petri dish is something else. It doesn't yet have the memories and loves and hopes that accumulate over the years.”

Michael Gazzaniga, Professor of Psychology, University of California (Santa Barbara)

The Moral Case against hESC Research

1. Assume that the human embryo is not a person.
 2. It follows from this that if there are persons, then personhood is something that a human being acquires at some point in human development.
 3. But there is no non-arbitrary point where one could draw a line in human development before which there is a living human being who is a non-person and after which the same being is a person.
-
4. So, if the human embryo is not a person, then there are no humans who are persons.

The Moral Case against hESC Research

“Allowing unrestricted research on human embryos would establish a clear precedent that it is acceptable to use one class of human beings...solely as a means to benefit the interests of another class of persons. Not since slavery has such instrumentalization of human beings been seriously considered as a morally acceptable course of action.”

Maureen Condic, University of Utah School of Medicine

The Moral Case against hESC Research

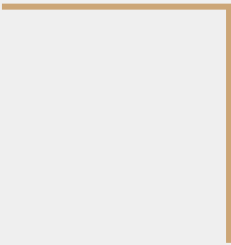
The Basic Question:

- Is the human embryo a human organism deserving the protection we accord all innocent human persons or is the human embryo a resource to be used in order to alleviate suffering and advance knowledge?

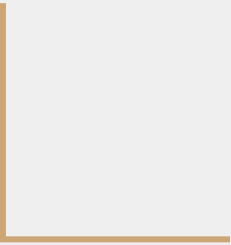
Tension: Justice v. Compassion

The Moral Case against hESC Research





A TECHNOLOGICAL RESOLUTION?



A Technological Resolution?

In 2009, researchers discovered how to convert a somatic cell back into a pluripotent state.

- Does it satisfy the moral goal of advancing scientific understanding of human development?
- Does it satisfy the moral goal of developing therapeutic modalities?
- Does it satisfy the moral concern with honoring the dignity and worth of all human life?

CONCLUSION

Conclusion

1. The political questions
2. The moral questions
3. The philosophical questions
4. The scientific and technological questions