

genetic control

The Stem Cell Debate:

In 1998: James Thompson UW and John Gearhart of Johns Hopkins independently isolated and cultured human embryonic stem cells.

What they are:

- *Human embryonic stem cells* are undifferentiated cells produced at the blastocyst stage of fetal development.
- A stem cell becomes an *adult stem cell* once it becomes differentiated, or specialized. This means that they become the cells that will develop into organs, like the heart, and liver.

Before stem cells are differentiated, they can be made to be any of the specialized cells.

Where they come from:

- Thompson obtained his stem cells (with consent) from surplus embryos left over from fertility treatments.
- Gearhart obtained embryonic germ cells from aborted fetuses, and cultured them to produce stem cells. Both methods yield the same results as getting the cells directly from a living blastocyst.

How they can be used in treatment:

- Stem cells are useful first because we can just make more: they can be replicated forever without dying or accumulating genetic errors.
- By culturing embryonic stem cells, then, one can create as many blank slate cells one needs that can then be used to potentially treat an enormous number of disorders and diseases. E.g Parkinsons, diabetes, damaged spines, damaged retinas.
- On the horizon: the possibility of growing custom-matched organs for transplant.
- Adult stem cells are even useful. Adult bone marrow stem cells have been used to regrow damaged heart tissue after a heart attack. Adult neural stem cells have shown promise in helping with brain injuries.

Some ethical issues surrounding stem cell research

The argument that human embryos have a special moral status.

1. If Stem cell research is morally justified, then destroying human embryos is morally justified.
2. It's not the case that destroying human embryos is morally justified.
3. Therefore stem cell research is not morally justified.

The argument for premise 2:

1. Human embryos have the potential to develop into human beings.
2. If (1), then human embryos have the moral status of human beings.
3. If human embryos have the moral status of human beings, then it is not the case that destroying human embryos is morally justified.
4. Therefore, it's not the case that destroying human embryos is morally justified.

The extended moral culpability argument:

EMC: It is always wrong to benefit from a morally wrong act.

1. Abortion is morally wrong.
2. If abortion is morally wrong and EMC, then it is morally wrong to gather stem cells from aborted fetuses.
3. It is morally wrong to gather stem cells from aborted fetuses.

Genetic Intervention: Screening, Counseling, and Diagnosis.

a *genetic disease* is one in which genes, or the ways in which they are expressed are causally responsible for particular biochemical, cellular, or physiological defects.

Genetic predispositions are not themselves genetic diseases. At best they can be regarded as causal conditions that in conjunction with other causal conditions, (likely to be unknown)

Genetic Screening: we will restrict the term to refer to public health programs that test or survey target populations with the aim of detecting individuals at risk of disease for genetic reasons.

Some charged questions surrounding genetic screening, counseling, and diagnosis:

1. Is there a right to have children who are likely to be impaired?
2. Is society justified in requiring that people submit to genetic screening, counseling, or prenatal diagnosis?
3. Do physicians have an obligation to inform their patients who are prospective parents about the kinds of genetic tests that are available?
4. Do patients have the right to be informed of all of the results of a genetic test?
5. Should public funds be used to pay for genetic tests when an individual is unable to pay?

An exercise: For each of the above questions:

1. Say of each utilitarianism, deontology, and Rawls, how they would answer the question
2. For each answer say why you think someone having that particular view might answer that way. I want good detailed answers here that are specific to the views.
3. Which of three do you think gives the answer with the best supported reasons?