The Interface Between Science and Ethics: Probing the Deeper Questions

Nancy L. Jones, Ph.D., Associate Professor of Pathology, Wake Forest University Health Sciences (Winston-Salem, NC)

Editor's Note: Center Fellows Nancy Jones and Bill Cheshire represented CBHD at the American Society of Bioethics and Humanities' 5th Annual Meeting, held October 24-27, 2002 in Baltimore, Maryland. Drs. Jones and Cheshire participated in a panel discussion entitled “Artificial and Asexual Human Embryos: Grappling for Policy Derivation.” Joining them on the panel were Glenn McGee, Ph.D. of the University of Pennsylvania’s Center for Bioethics and Christine Coughlin, J.D. of Wake Forest University School of Law. Dr. Jones shares below some of the insights gained from this event and, more generally, from her position as a research scientist. Anyone wishing to successfully engage the complex ethical issues raised by biotechnology would do well to take into account the considerations Dr. Jones presents below before entering into the discussion.

Debates over bioethical issues necessarily involve people from diverse circles. Scientists, health care professionals, lawyers, clergy, and representatives from other disciplines join formally-trained bioethicists in assessing the appropriateness of various forays within medicine and biotechnology. It is my hypothesis that the way scientists think is often so fundamentally different that the “answers” to bioethical issues offered by the non-scientific community are perceived as (at best) only minimally relevant by those who are actually pursuing the research in question.

“...the way scientists think is often so fundamentally different that the ‘answers’ to bioethical issues offered by the non-scientific community are perceived as (at best) only minimally relevant by those who are actually pursuing the research in question.”

The next affront to our core cultural values will arise from the resultant biological revolution—rather than from clinical practice and clinical research. The same strategies for bioethical engagement that resonate with a physician are often merely noise to someone trained to “be a scientist” who embraces pragmatism. How can non-scientists effectively engage the ethical debates spawned by emerging biotechnologies? Using as an example the debate over human embryonic stem cell research, I have offered an initial framework for facilitating successful dialogue below.

Why Do Many Scientists Desire to Experiment Upon Human Embryos?

Before simply speaking out against research on human embryos, the above question should be thoughtfully entertained. Embryonic stem cell research, “therapeutic” cloning, and regenerative medicine are merely second-tier justifications for conducting research on human embryos. The first-tier justifications were linked to clinical practice and “research” on human reproduction. The more recent wave of justifications may have been publicized so aggressively in part because the therapeutic benefits allegedly promised by stem
cell research, cloning, and regenerative medicine have such widespread appeal. However, the basic rationale for why scientists seek to engage in human embryonic research is actually much more deep-seated. This is evident in the explanation that Dr. Craig Venter and Dr. James Watson, both offered to the Washington Post (November 21, 2002) to justify their plans to clone a human embryonic cell and make embryonic cell banks, the minimum number of genes needed to sustain life: “The goal is to fundamentally understand the components of the most basic living cell.”

For most scientists, the primary motivation driving research on human embryos is rooted in the fact that the embryo is the earliest form of human life and therefore the best experimental system for understanding human development. These scientists believe that if we can discover how "Perhaps nowhere is the maxim 'What can be done should be done' more exalted than in the context of scientific research." the embryo is programmed, we can eventually understand all of human function. This fundamental knowledge is the core reason why they are engaging in embryonic research; therefore, baring objections to embryonic stem cell research on the premise that there are alternative methods for securing equal (and perhaps greater) therapeutic benefits will likely prove to be only a temporary deterrent to research on human embryos.

Why Do Many Scientists oppose Human Embryo Research As Ethically Permissible?

No one debates that with the introduction of the contraceptive pill in 1960 and other medical advances, sex became something that one could engage in without consequence. Some animal research that may have been considered ethical just ten years ago is now considered unethical as the result of increasing concern for animal welfare. This is the case even though the experimental design may be similar. But in the case of the embryo, it is simple harm and then, that rather than limiting the heights to which scientists aspirate, bioethicists can turn their attention to the moral excellence by challenging them to engage only in experiments that are staked on morally high ground.

Strategies for Engagement

The more I consider the use of human embryos as research subjects, the more I am confronted with the realization that human embryos in research rarely address the fundamental issues that are driving such experimentation. We must recognize that the battle is not against flesh and blood, but against principles and spiritual forces. Scientists are not the enemy. Although they may propose protocols that are unethical, our battle is not against them personally.

I believe that forming genuine relationships with scientists also becomes hearing their concerns, motivations, and desires will prove essential to effectively navigate the next generation of biomedical challenges that is fast encroaching upon us. Secular bioethicists have long provided guidance in navigating the ethical quandaries that Christian bioethicists also need to volunteer their services and partner with scientists (as well as with the secular bioethicists) at their local universities. University committees need outside community members function to themselves as a protective buffer and may likely welcome such participation.

We scientists are trained to be doubters, which means that we need to be prepared with facts behind an ethical interpretation. We must also be prepared to give them the benefit of the doubt we owe the bioethicists community and stem celltranslational research. If we are not there to position their society to a tenuous foundation, then we must articulate a precedent for demanding a morally higher ground that scientists are heeded. The good news is that there is already such a precedent in the literature. The book, "Science and the Human Embryo," is a key scientific reference. However, it is important to note that the book is not the only one to address the issue of human embryonic stem cell research.

The embryo is the 'new biology' that scientists are exploring. However, the embryo is not the only biological system that is being explored. Scientists are also exploring the brain, the heart, and the immune system. The human body is a complex system, and scientists are working to understand the workings of this system. The human body is a complex system, and scientists are working to understand the workings of this system. The human body is a complex system, and scientists are working to understand the workings of this system.

One scientist who has been a vocal advocate of human embryonic stem cell research is Dr. James Thomson. Dr. Thomson is a leading researcher in the field of stem cell biology, and he has been a vocal advocate for the use of human embryonic stem cells in research. Dr. Thomson has conducted numerous experiments using human embryonic stem cells, and he has published his findings in leading scientific journals. However, Dr. Thomson's research has been controversial, and it has been criticized by some scientists and ethicists.

Despite the criticism, Dr. Thomson continues to conduct research using human embryonic stem cells. He believes that this research is essential for understanding the human body and for developing new treatments for diseases.

Another scientist who has been a vocal advocate of human embryonic stem cell research is Dr. Leonard Noon. Dr. Noon is a retired obstetrician and gynecologist who has been a vocal advocate for the use of human embryonic stem cells in research. Dr. Noon has conducted numerous experiments using human embryonic stem cells, and he has published his findings in leading scientific journals. However, Dr. Noon's research has been controversial, and it has been criticized by some scientists and ethicists.

Despite the criticism, Dr. Noon continues to conduct research using human embryonic stem cells. He believes that this research is essential for understanding the human body and for developing new treatments for diseases.

The ethics of human embryonic stem cell research are complex, and there is no easy answer to the question of whether or not it should be allowed. However, it is clear that scientists are making important contributions to our understanding of the human body and to the development of new treatments for diseases. The challenge is to ensure that this research is conducted ethically and in a way that respects the dignity of all human beings.