

THE ETHICS OF EMBRYONIC STEM CELL RESEARCH: FINDING COMMON GROUND

INTRODUCTION

Biomedical sciences are progressing at staggering rate. This fact is no more evident than in the burgeoning field of stem cell researchⁱ where therapeutic applications such as tissue and organ transplantation are being developed. These therapies have the potential to save millions of lives and greatly reduce human suffering. The ethical dilemma lies in the fact that much of the research requires the destruction of human embryos. Unfortunately, when faced with such choices, our standard ethical frameworks seem to demand opposing and intractable positions. The goal of this paper is to find a common ground from which we as a society may reasonably and faithfully deliberate about embryonic stem (ES) cell research. In the paper I will (1) briefly identify and evaluate the main arguments both for and against this research, (2) explore the central question of moral status, and (3) consider the application of Mary Anne Warren's "multi-criterial" approach to the moral status of the embryo.

BREAKING THE STALEMATE

It should be recognized that much of the recent debate over ES cell research has focused on the use of ES cells collected from cadaveric fetal tissue and unused IVF embryos.ⁱⁱ Attempts by philosophers, lawyers, and scientists alike to justify ES cell research have centered on issues such as lack of complicity with abortion or the best use of unwanted materials. However, these attempts have not answered the critics of ES cell research and have left us in an ethical stalemate. John Robertson and the NBAC stop their arguments at the point of "non-complicity" because they believe that they have justified the immediate concerns of this research and answered the critics. They choose to address only the "less problematic"ⁱⁱⁱ sources for ES cell research, however, in doing so they avoid the deeper debate and fail to set a direction for the future. How can we bridge the divide? First, we must seek to reduce some of the distorting power of the fears and prejudices that surround this debate. This can be done by gaining a common understanding and usage of

such terms as “human being,” “person,” “right to life,” and even “embryo.” I contend that these terms can be sorted out within the context of a framework for moral status and our answers to the ethical dilemma presented by ES cell research will turn on the question of how we ought to understand the moral status of the embryo. Thus, I intend to focus my attention on the deeper problem: What is the moral status of the embryo, and how is it to be weighed against other relevant concerns?^{iv}

THE STANDARD ARGUMENTS ON BOTH SIDES

The main argument *for* ES cell research is that it will reduce human suffering and promote human well being, or the common good, by curing or eliminating many illnesses. The debilitating effects of such diseases as diabetes, Parkinson's, and Alzheimer's (to mention only a few) may potentially be eradicated through the therapeutic applications offered by ES cell research. ES cell research is touted by many to be the most probable and quickest way to attain these therapies due to the undifferentiated nature of the stem cells as well as the ability of ES cells to overcome immunological concerns. Thus, it is research with ES cells versus adult cells which should be pursued. Any harms caused by the destruction of human embryos will be outweighed by the goods attained in the relief of human suffering. However, social utility is not always a sufficient grounding to justify actions. Except for hard-line, classical utilitarians, most agree that there are some moral constraints on the promotion of the common good. Issues such as justice, human rights, or respect for persons often mitigate social utility.

The main argument *against* ES cell research is that embryos should never be destroyed based on the principle of respect for life. Upon conception embryos are alive and have the unequivocal right to maintain that life. Whether one is using “left-over” IVF embryos ready to be discarded or the fetal tissue remains from elective abortions, any intentional destruction of an embryo cannot be justified. In effect, those arguing against ES cell research are saying that embryos have the moral status of persons and so should not be killed regardless of the extent of human benefit. As Richard Salzman says, “some diseases are better than the cure.”^v There is some truth in that statement.

But even for objectors to ES cell research it does seem that closely held values are at times overridden in the name of other closely held values. As regards valuing life, we certainly risk life in the pursuit of ending human rights atrocities. So the question is how much truth is there in Salzman's statement and how does this notion relate to the question of the limits on ES cell research.

An additional question which must be addressed in evaluating the argument against ES cell research is what is meant by "Respect for life." This principle is best understood as one which values life among other values. This is, however, not the vein in which the opponents of ES cell research are using this principle. When they invoke "respect for life" in their argument, they are really meaning "sanctity of life" which is a principle holding life as the *highest* value, in fact, as a sacred and non-violable value. The pitfalls of this type of move will become more evident in the next section as we look closer at approaches to moral status.

Arguing against ES cell research, some suggest that it is incomprehensible to be able to offer the embryo "profound respect or dignity" and then be prepared to kill it. This question of respect for the embryo is an important one to address if we hope to find common ground in this debate. How much respect is due the embryo? If the embryo is due respect, how can we most appropriately demonstrate this? I believe a clear understanding of the embryo's moral status will help us answer these questions and help us face the dilemma of offering the embryo respect while still being willing to destroy it.

IS THE EMBRYO PERSON, PROPERTY, OR SOMETHING ELSE?

The notion of moral status represents an approach of specifying those things towards which we believe we have moral obligations and identifying some of what we believe those obligations to be. Any theory of moral status cannot be expected to answer all relevant questions about obligations since many of our obligations are based on contributing factors which are situational or contextual. However, a theory of moral status that can be accepted and agreed upon by a diverse audience will take us a long way towards practical decision making.

Relative to the moral status of the human embryo there are three positions of which two are commonly held and one is somewhat revisionist:

- 1.) Embryo as property
 - It has no moral status, so allow any type of stem cell research
- 2.) Embryo as person
 - It has full moral status, so allow no stem cell research
- 3.) Embryo as transient
 - It has some moral status, so allow stem cell research under certain conditions

The embryo as property view, can only be held if no moral status is attributed to the embryo. The most obvious avenue to reaching this view is one that Singer or Hare might take within a preference satisfaction utilitarian framework. Here the claim would be that since the embryo has no preferences or interests, it has no claim to moral status.^{vi} However, our common-sense tells us that there is something about the embryo which instills it with value. This is not to say we must resort to specieism (following Singer, i.e., it is not the specifically human quality of the embryo that makes it worthy of some degree of protection), but that there seems some incongruity in dealing with human beings purely as if their rights were dependent upon a scientific account of their developmental stage (e.g., passing the eight cell stage, developing the primitive streak, etc.). In fact opponents of ES cell research draw our attention to our disposition to protect the vulnerable who may not yet have developed. The embryo seems both developing and vulnerable. Singer says it is not vulnerable because no harm can be done to it. But the harms many are concerned with are the harms to justice and human rights which a strict utilitarianism seems unable to account for. One of the greatest advantages of the account of moral status I plan to offer is its ability to take a fundamental preference satisfying ethical framework and still compensate for fundamental human rights.

Using a single criterion as the basis for establishing moral status, as the embryo as property view does, is called "uni-criterial" by Mary Anne Warren in her book *Moral Status: Obligations to Persons and Other Living Things*.^{vii} The embryo as person view can also be classified in this

manner as it likewise relies on a strict adherence to a uni-criterial notion of moral status. The approach taken in the embryo as person view is that since the embryo is alive, and life is the singular necessary and sufficient condition for the attribution of moral status, then the embryo has full moral status. Warren skillfully maps out the standard “uni-criterial” approaches to moral status and the pitfalls of each. Warren discusses three uni-criterial approaches, each of which focuses on a certain intrinsic property: (1) life, (2) sentience, and (3) personhood. Many philosophers have argued for one or another of these properties to be necessary and sufficient for the attribution of full moral status. Warren argues that each represents a notion which is sufficient for some moral status, but will fail as a sole criterion for full moral status. She argues persuasively that taken individually each, “...leads to consequences that are intuitively implausible and pragmatically unacceptable.”^{viii} I will briefly examine some of these consequences and illustrate the problem of a uni-criterial approach as I examine a recent statement against ES cell research by a prominent advocacy group.

AN ARGUMENT AGAINST ES CELL RESEARCH

The Concerned Women for America (CWA) make a standard argument against embryonic stem cell research:

“Human embryos are *humans* - and therefore, *persons* - and when an embryo is destroyed, a human life is extinguished... The underlying utilitarian belief that some humans need to be sacrificed for the betterment of others is morally and ethically wrong. The rationale used to justify the destruction of embryos for the advancements in medical research and development is the same used to justify the syphilis experiments conducted on African-Americans in Tuskegee, Alabama... (and in the) medical research Nazi doctors performed in Dachau and Auschwitz.... We do not have the license to engage in lethal experimentation, just as we may not experiment on death row prisoners or harvest their organs without their consent.”^{ix}

As Peter Singer points out,

“The syllogism goes like this:

Every human being has a right to life.

A human embryo is a human being.

Therefore, the human embryo has a right to life.”^x

The inadequacy of the standard argument is brought to light in a comparison of the nature of the term “human being” and its use in each of the two premises of the standard argument against ES cell research. To make the argument hold, the sense of “human being” as used in the first premise is not the same as the sense of “human being” as used in the second premise. Singer calls this an equivocation of the argument’s primary term.^{xi} The use of the term “human being” in the second premise is biological in nature (it has human DNA, it is of Homo Sapiens), the use of the term “human being” in the first premise (to claim a “right to life”) is strictly relative to the moral qualities and is, thus, normative in nature. Therefore, the standard argument fails due to the equivocation of the term “human being.” In getting clear about our use of the terms “human being” and “person” we can create clarity amid unwitting attempts at obfuscation.

Many philosophers, as far back as Locke, would claim that a human being has rights, but that being human is not a necessary and sufficient condition for having personhood. Being human is a biological condition, being a human being or, to use more exacting language, having personhood is a normative condition. The questions then becomes: What are the necessary and sufficient conditions for moral status and how do they apply to the human embryo?

“MULTI-CRITERIAL” APPROACH

If the embryo is not property and the embryo is not a person, then it must be something else. What this “something else” is can be reflected in the position of the embryo as transient (Position #3 above). The validity of this position will be born out in a review and application of Warren’s multi-criterial approach to moral status. It is important to note that Warren acknowledges that this approach is a common-sense morality. To understand this approach, we must understand how she establishes each level of her criteria for moral status and why any one of the three standard intrinsic properties fail as the singular criterion for establishing moral status. While not all of these principles are used consciously by everyone, she contends that “thoughtful people”^{xii} will make reasoned arguments that are supported by these principles. She admits that, “None of these

principles is deducible from empirical facts, or from analytic truths about moral terms or concepts; yet each is defensible in common-sense ways.”^{xiii}

To begin with, Warren recognizes that we do value life and she acknowledges the merits of the “Sanctity of Life” principle. The notion of “reverence for life” or “Sanctity of Life” (as the principle is more often called) as the sole conferring principle of moral status was purported by Albert Schweitzer. While he was recognized as a great humanitarian, the legacy he left behind in the dogmatic appeal to “reverence for life” represents much of the intractability found within the stem cell debate. The key to the “reverence for life” notion is that all living organisms have moral status and have it in exactly the same amount. This is because life is the ultimate, absolute value which all organisms share equally. However, application of this strict and absolute principle quickly wanes to absurdity when we realize that many of our normal daily functions cannot occur without some destruction of life; e.g., cleaning the kitchen floor results in the wrongful killing of micro-organisms, our daily diets (even if vegetarian) result in the morally unacceptable death of plants.

While some (including the Concerned Women for America) have tried to re-shape the Sanctity of Life principle by saying it is only relevant to human life, those seeking to hold this general principle of life as ultimate and absolute have some vicious obstacles to overcome. In order to be true to the sanctity of life principle, one may be forced to accept that any attempt to make such qualifications as only human life matters could result in the untenable outcome of allowing other qualifications. Thus, one objection to such a qualifier is that to allow only *human* life to be absolute may cause us to allow the principle to be denigrated such that some life is not worth living. Though this is just the point of the CWA and others, the problem is that this could be the case whether the living creature is an animal, a child, an elderly person, or a disabled person. Such denigration of the value of life is unacceptable even to the proponents of the Sanctity of Life principle. As Schweitzer claims, there can be no qualifiers to the type of life we are talking about. Another problem with this is the charge, made by Singer, of specieism (referenced above). Fundamentally, the objection is that it seems problematic as humans to claim our humanness as the qualifier to

attain full moral status. It is common for people to hold that animals have some rights and those rights are defined by the nature of our obligations which are based on some level of moral status. Thus, the sanctity of *human* life as a uni-criterial principle is not a sufficient ground for establishing either partial or full moral status.

In Schweitzer's view any actions that harm living things are wrong. Warren recognizes the value in this notion and converts the Sanctity of Life principle to her first of seven principles which she calls "**Respect for Life.**"^{xiv} "Life" is a sufficient condition for some moral status, but is not a sufficient condition for full moral status. Thus, all living entities are given some moral status, but not full moral status. This principle treats all harms done to living things as undesirable, other things being equal, and imputes no wrongdoing to those who harm living things when there are morally sound reasons for doing so. However, Warren recognizes, as do some Sanctity of Life proponents, that no right is absolute and that the right to life can be overridden with sufficient justification. This notion re-iterates problem with the uni-criterial Sanctity of Life position in that such justifications (i.e., when to override a right to life) cannot be determined solely on the attribution of life, since all life is valued equally. Such determinations, Warren claims, can only be achieved within the context of the full compliment of the "multi-criterial" principles.

Next, Warren analyzes the principle of sentience as a uni-criterial approach to moral status. To do this, Warren launches an attack on one of her own mentors, Peter Singer, himself a preference utilitarian.^{xv} Singer's ethics rely upon the sole criterion of sentience for gaining full moral status. However, Warren effectively demonstrates how this notion of sentience is unacceptable as the singular criterion in the establishment of moral status. Of the four objections to this approach that Warren explicates, the most compelling to me is what she calls the "Human Rights Objection."^{xvi} Fundamentally, this objection is that the sentience view on moral status provides no basis for ascribing strong moral rights to individual human beings, or even animals. "The charge," says Warren, "is that utilitarianism regards individual beings as mere 'receptacles' for utility; if a greater quantity of utility can be produced by sacrificing some individuals for the benefit

of others, then there is no utilitarian objection to doing this.”^{xvii} However, rights are considered by many to override utilitarian considerations. Warren quotes Ronald Dworkin, “If someone has the right to something, then it is wrong...to deny him even though it would be in the general interest to do so.”^{xviii} Singer doubts that this is a problem for his preference satisfying notion of utilitarianism. He contends that, “...the only right his theory attributes to (humans and) animals is the right to equal consideration of comparable interests.”^{xix}

Warren converts Singer’s principle of sentience into the second of her interrelated concepts and calls it the “**Anti-Cruelty Principle.**” Sentience becomes sufficient for some moral status, but not sufficient for full moral status. She states that, “Sentient beings are not to be killed or subjected to pain or suffering, unless there is no other feasible way of furthering goals that are consistent (with all the other principles) and important to human beings or other entities that have a stronger moral status than can be based on sentience alone.”^{xx} This principle supports our instinctive capacity for empathy. If we view our own pain as objectively bad, then logical consistency requires that we apply this principle to others.

“Personhood” is the third uni-criterial, intrinsic principle debunked by Warren. She makes the distinction between, “(1) the ‘maximalist’ definitions of personhood which makes moral agency^{xxi} (or at least potential for it) a necessary condition for being a person; and (2) the ‘minimalist’ definitions which do not require moral agency, but only some capacity for thought and self-awareness.”^{xxii} Kant’s view of personhood is that of the “maximalist.” The obvious objection to this type of uni-criterial approach is that we have already established that the mere existence of sentience makes one worthy of some moral status. Even John Rawls, who attempts to defend Kant’s “maximalist” definition, rejects personhood as a necessary condition for having moral rights and holds only that it is sufficient.^{xxiii} Kant’s notion of personhood restricts the moral community to eliminate sentient beings without moral agency; an action many animal rights and disability rights activists are sure question. Warren, however, rescues the principle of “personhood” with her third and fourth principles: the “**Agent’s Rights Principle**” and the “**Human Rights Principle.**” The former holds

that moral agents have full and equal basic moral rights, including the rights to life and liberty. The latter holds that within the limits of their own capacities, human beings who are capable of sentience but not of moral agency have the same moral rights as do moral agents.

It must be remembered, however, that moral rights are not absolute in that they may be overridden at times. Take self-defense or war as examples. We may adamantly support a “reverence for life,” but allow an action which causes the death of another. Most holders of the Sanctity of Life principle will hold that killing an intruder to save one’s husband, daughter, or one’s self is somehow morally permissible. Whatever the justification is, it is still a justification to override the principle. Likewise, I have rarely heard the “right to life” contingent standing up against military involvement to end such atrocities as ethnic cleansing. Interestingly, proponents of “reverence for life” (or “Sanctity of Life”) as a uni-criterial principle, are resistant to the generalizing of these applications to a formal theory. Thankfully, Warren is not so resistant. She says the key is that, “the precise content of any moral right can only be delineated through discussion and deliberation, in which all legitimate interests receive equitable consideration.”^{xxiv}

Building upon her theory, Warren borrows from such figures as the environmental ethicist, J. Baird Callicott and feminist ethicist, Nel Noddings, to introduce two relational rather than intrinsic properties: (1) membership within the social or biotic community, and (2) emotional connectedness. Warren then captures these two relational properties which she believes are important to moral status in her three remaining principles.

“5. **The Ecological Principle:** Living things that are not moral agents, but that are important to the ecosystems of which they are a part have...a stronger moral status than could be based upon their intrinsic properties alone”^{xxv} (e.g., species and habitats).

“6. **The Interspecific Principle:** ...non-human members of mixed social communities have a stronger moral status than could be based upon their intrinsic properties alone.”^{xxvi}

“7. **The Transitivity of Respect Principle:** ...to the extent that it is feasible and morally permissible, moral agents should respect one another’s attributions of moral status.”^{xxvii}

She notes that none of these relational principles can diminish the moral status gained through the employment of any of the preceding, intrinsic principles, but that they can enhance moral status. She holds that neither of these two relational properties represent a necessary and sufficient basis for moral status, but that the theories which value these properties contain insights that need to be incorporated into an adequate account of moral status. This adequate account, therefore, will be “multi-criterial.”

“MULTI-CRITERIAL” APPLICATION

In the application of this “multi-criterial” approach to moral status, Warren cautions us that the first four principles represent only moral floors, not ceilings on moral status. Furthermore, a complete and accurate understanding of moral status cannot be gained until a complete review of all the interrelated principles are balanced against one another and the practical implications of each are considered. In applying this model to our topic of ES cell research and the proposed destruction of early embryos (this is the name I will use for embryos prior to the fourteenth day after conception), a full accounting of each of Warren’s principles is enlightening and empowering.

Clearly early embryos are endowed with life and, therefore, deserve respect and some level of moral status. Nevertheless, these early embryos do not have either the capacity for sentience or moral agency. So they cannot be considered to have full moral status. The failure by many in this debate, including Singer, is the failure to ascribe some moral status or moral value to the early embryo. Even if the early embryo does not have full moral status, it certainly should have some moral status based on its attribute of being alive. This status, however, is not for “itself” in the Kantian sense, nor merely for instrumental value, but for the intrinsic value of the abstract notion of “life.” John Robertson calls this value the “symbolic” value of life. This missing distinction, Robertson says, between the “intrinsic and the symbolic valuation of the embryo is at the heart of the debate over abortion and embryo research.”^{xxviii} While Steinbock calls this missing distinction one between “moral status” and “moral value”, Warren has done justice to both perspectives and perhaps has employed a more broadly appealing language.

The “Respect for Life” principle calls us to value and sustain all life, other things being equal. However, in the case of ES cell research and its potential therapeutic applications, other things are not equal. The symbolic cost associated to allowing the destruction of human embryos in ES cell research is primarily the undesirable capacity to diffuse or obscure the value we hold in this intrinsic property of life. The intrinsic costs associated to not allowing the destruction of early embryos in ES cell research *at minimum* are that millions of persons with full moral status will die and even more will suffer significant physical and psychological pain. This expansive claim can be made because no other means currently exists, or will exist, in the foreseeable future which can alleviate the suffering and death that ES cell therapies have the proven capacity to do.^{xxix} Thus, the benefits of ES cell research far outweigh the symbolic costs incurred from the destruction of life that is without full moral status. The key here is that this “symbolic value” and the interests of those with this “lower moral status” should not take precedence over the interests of those with full moral status, i.e., those gaining higher levels of moral status based on the principles of Anti-Cruelty and Agent’s Rights or Human Rights.

Within the Interspecific Principle, embryos may gain a higher level of moral status based on their social relationship to human beings, but only if such relationships exist. If research embryos are created through IVF or somatic cell nuclear transfer (SCNT) techniques using donated gametes or cells, then such relationships would not exist. Thus, the basis for creation of research embryos for use in ES cell research is established. For embryos with such social relationships, their enhanced status cannot override the interests of parents who can claim full moral status. Yet the questions of how to show the proper respect to specific embryos should be addressed. If parents or donors take offense at such destruction based on the symbolic value of life, it would be morally objectionable to force such destruction. By observing the Transitivity of Respect principle in this manner we do not lose the opportunity for ES cell research. One reason is that since other embryos will be available for use in ES cell research, the potential benefits of ES cell therapies are not necessarily foregone. Therefore, ES cell research may continue even though the symbolic

value of life in some embryos will be protected by allowing for the respectful disposal of such embryos. Thus, the Interspecific Principle may, but does not always, enhance the embryo's moral status to a point where it is morally objectionable to destroy the embryo.

Within the Transitivity of Respect Principle, policy makers and philosophers alike should take into consideration the religious and traditionally held viewpoints of others towards these early embryos, but only where it is feasible or morally permissible to do so. In this case, I argue that it is morally impermissible to forgo the potential benefits to hundreds of millions of sentient, moral agents to whom we are obligated to seek the relief of pain and suffering. The relative costs and benefits of such decisions were briefly outlined above. However, one may ask, based on the Transitivity of Respect Principle, why it is *not* feasible to *not* take certain actions supporting ES cell research. I believe there are valid responses.

First, we must recognize that since ES cell research is not illegal in this country, it will continue in the private sector without significant legal or moral consequence. Furthermore, other countries are approving such research and will be moving forward. Thus, from a practical perspective, reaching common ground on embryonic moral status is a central component to answering the question of whether to allow federal funding for ES cell research. The lack of such federal funds will (1) slow research advances by keeping universities and key research teams out of the process, (2) eliminate government (NIH) oversight which would provide regulation and monitoring ensuring that embryos, donors, and patients are given the respect they deserve, and (3) will slow the development of many clinical applications since private companies will only pursue those activities or products which will quickly produce products and profits. If we were to either allow the private sector to conduct this research without the support of federal funding or to wait for the unlikely development of some other less objectionable means to cure such diseases such as Parkinson's, diabetes, and Alzheimer's, millions more people will experience much more death and suffering than if we were to allow federal funding. Thus, accepting the application of the other multi-criterial principles as articulated above, this faster road to cure is necessarily more ethical

based on our ability (1) to alleviate the death and suffering of more persons and (2) to more adequately protect the interests of those with full moral status.

INDICATIONS FOR COMMON GROUND

While there are those on the anti-abortion front who oppose any embryo destruction for any purposes, there are many other anti-abortion activists who hold that it is ethical to destroy the embryo or fetus under certain circumstances. Examples include when the life of the mother is at stake or the conception of the fetus is a result of rape or incest. Clearly, here, there are other ideals which are highly valued which trump the “right to life” of the fetus. In these examples, moral deliberations are over “rights to life” for mothers as well as the dignity and respect of women. Holding dear either of these values does not logically entail the diminishment of the embryo’s or fetus’ moral status, but it does reflect a willingness to balance whatever status it does have against other competing values. This would represent a recognition that the embryo’s “right to life”, if it exists, is not absolute. If the majority of those engaged in this moral deliberation can agree on this point, then the foundations of the common ground I am seeking have already been laid.

DEMONSTRATING RESPECT

If we can agree that the embryo does not hold exactly the same moral status as an adult human, but that the embryo has some status and deserves respect, then the question is what actions and restrictions will most effectively demonstrate sufficient respect for human embryos. No ethical system will give us the answer to this question. The obligations of moral duty cannot pinpoint the specifics that are needed here nor can a strict utilitarian calculus do the work. The answers will only come from collaborative deliberation seeking to balance reasonable and supportable views. The reference points for these answers will be diverse and include personal preferences, religious perspectives, emotional paradigms (e.g., the level of passion one holds for the symbolic value of embryos), and medical beliefs (e.g., how beneficial and/or necessary this stem cell research will be). Some will want more respect for embryos, others will want less. *(In Appendix II, see my initial policy recommendations and in Appendix III see some objections and possible responses. Each*

are meant as dialogue starters.) Our goal should be to find a common enough ground which the majority of us can accept.

CONCLUSION

As we move forward, a clear and common understanding of the language we use and of our attributions of moral status will be of the highest importance to the success of our search for a common ground in this ES cell research debate. Mary Anne Warren's multi-criterial approach enables us, through common-sense justifications, to embrace and honor these various and important values. If it is true that ES cell therapies have the potential to alleviate ill-health and to protect the lives of more than half of the world's population^{xxx} while not wrongfully impinging upon the interests or rights of others, then it is our duty to pursue this research in a vigorous, yet disciplined, manner. To unnecessarily prevent or delay such a valuable line of research is to act unethically.

ENDNOTES

ⁱ For those unfamiliar with the terms and nature of this field, a “Stem Cell Primer” is placed in the Appendix

ⁱⁱ Generally, these arguments attempt to establish the ethical permissibility of such measures based on the lack of complicity in the destruction of the fetus or embryo. See: Robertson, John, “Ethics and Policy in Embryonic Stem Cell Research”, *Journal of the Kennedy Institute of Ethics*, June, 1999, pg. 112-116. While John Robertson makes sound arguments for the weakness of this complicity in the destruction of embryos when using fetal tissue or spare IVF embryos, the fundamental question remains as to the moral status of the embryo.

ⁱⁱⁱ NBAC, “Ethical Issues in Stem Cell Research, Executive Summary”, May, 1999, Draft Report, Chapter 5, Pg. 6

^{iv} I will not address in the issue of adult stem cells and cord blood stem cells as alternatives to ES cells. The reason is that these sources have not been shown to offer commensurate potentiality with ES cells. Nevertheless, there are still scientists working with adult stem cells who are reporting a greater ability for the cells to differentiate than was once thought possible. (See: Lewis, Ricki, “Human Mesenchymal Stem Cells Differentiate in the Lab”, *The Scientist* Vol. 13, No. 8, April 12, 1999.) Adult stem cells have demonstrated the ability to become several cell types. Though some scientists have predicted that “the need for fetal cells as a source of stem cells for medical research may soon be eclipsed by the more readily available and less controversial adult stem cells,” (See: Josephson, Deborah, “Adult Stem Cells may be Redefinable”, *British Medical Journal* 1999, 318:282) opponents of ES cell research cling to and overextend such claims by suggesting that there is no practical need to continue research with the ethically more questionable sources. Unfortunately, there is no scientific agreement on the potential of adult stem cells and most evidence suggests that diverse clinical applications using adult stem cells will not only take much longer to develop, but are also much less likely to ever occur at all. Even the NBAC, after extensive testimony from scientists, has concluded that adult stem cells represent an approach that will be “scientifically and technically limited, and in some cases, the anatomic source of the cells might preclude easy or safe access.” (See: NBAC, “Ethical Issues in Human Stem Cell Research”, May, 1999, Draft Report, Chapter 5, pg. 5.) The bottom line is that it is too early to make any definitive claims on this issue.

^v Congressional Testimony, Committee on Appropriations, Stem Cell Research, April 26, 2000, FDCH Congressional Testimony, Richard Salzman, Item No. 131243019310 from eMediaWorks, Inc.

^{vi} Here, I am leaving aside the argument from potential, i.e., that the embryo has the potential for preferences and interests and so should be considered to have them in fact. There is not sufficient room in this paper to fully address this objection, though I will return to it briefly in an Appendix.

^{vii} Warren, Mary Anne, “Moral Status: Obligations to Persons and Other Living Things” (Clarendon Press - Oxford, 1997)

^{viii} Ibid. pg. 17

^{ix} Vick, Hannah, "Embryonic Stem Cell Research: Ethically Wrong Treatment of the Tiniest of Humans", Concerned Women for America, May, 2000, www.cwfa.org/library/life/2000-05_pp_stem-cell.shtml, pg. 3

^x Singer, Peter and Kuhse, Helga, "Individuals, humans and persons: The Issue of Moral Status", *Embryo Experimentation, Legal Ethical and Social Issues* (Cambridge University Press, 1993) pg. 69

^{xi} Ibid. pg. 70

^{xii} Ibid, pg. 149

^{xiii} Ibid. pg. 149

^{xiv} Ibid. pg. 149

^{xv} Preference utilitarianism is a modification on classical utilitarianism which attempts to answer the objection that utilitarianism that attainment of pleasure and freedom from pain are the only things that people value. Preference utilitarians define utility as the satisfaction of individual preferences. Further, Singer claims that all valid moral claims can be derived from a single principle; the principle of equal consideration of comparable interests of all sentient beings. See Warren pg. 65

^{xvi} Warren, pg. 77

^{xvii} Ibid, pg. 77

^{xviii} Ibid. pg. 77

^{xix} Ibid. pg. 78

^{xx} Ibid. pg. 152

^{xxi} Moral agents are defined by Rawls as, "Rational beings with their own ends, capable of a sense of justice." See *A Theory of Justice*. (Cambridge, Mass.: Harvard University Press, 1971)

^{xxii} Warren, pg. 90

^{xxiii} Ibid. pg. 105

^{xxiv} Ibid. pg. 160

^{xxv} Ibid. pg. 166

^{xxvi} Ibid. pg. 168

^{xxvii} Ibid. pg. 170

^{xxviii} Robertson, John, "Ethics and Policy in Embryonic Stem Cell Research", *Journal of the Kennedy Institute of Ethics*, June, 1999, pg. 117

^{xxix} See Endnote #7

^{xxx} McGee, Glenn and Caplan, Arthur, "The Ethics of Politics and Small Sacrifices in Stem Cell Research", *Kennedy Institute of Ethics Journal*, June, 1999, pg. 153

Appendix I

STEM CELL PRIMER

There are many types of stem cells and exponentially more uses. Essentially, stem cells are a unique and essential cell type found in the body. Generally, all have the ability to divide, renew, and commit to more specialized functions. Stem cells found in the early stages of embryonic development (up to the 8 cell stage) are considered “totipotent.” This means the cells have the ability to form all cells in the body and, in theory, to develop into a complete human being. Stem cells found at later stages of embryonic development are considered “pluripotent.” This means the cells are more “committed” or “differentiated” and can become any one of the 210 tissue types in the body, but cannot become a complete individual. These embryonic stem cells also have the ability to renew indefinitely and are considered by many “immortal.” Stem cells are also found in adults. These cells are highly differentiated, but maintain some ability to renew. Examples are stem cells which allow new skin growth and the renewal of blood cells.

Before discussing the specific types and sources of stem cells, I believe it is important to attempt to grasp the broad spectrum of implications which stem cell research can have in clinical applications. In general it is believed that potential applications for stem cells will include:

- Better understanding of the human development process (embryology) and cellular decision making (genetic therapy) towards the treating and curing of both deadly diseases and developmental disabilities
- Enhanced pharmaceutical development towards better testing of drugs for safety and efficacy
- “Cell therapies”: Including the generation of both cells and tissue for transplantation into humans to repair or replace damaged or diseased cells or organs

Dr. Harold Varmus suggests that, “There is almost no area of medicine that might not be touched by this innovation.” In fact, he estimates that more than half the population of the world will benefit in a significant way from the future applications of this research. Below is just a partial listing of the conditions for which scientists believe there is evidence to suggest that therapeutic stem cell treatments will have a major impact:

-Cancer	-AIDS	-Parkinson’s	-Alzheimer’s	-Spinal Cord Injury
-Stroke	-Burns	-Heart Disease	-Arthritis	-Down’s Syndrome
-Sickle Cell	-Diabetes	-Huntington’s	-Retinal Disease	-Mental Retardation
-Neurological Diseases like: Multiple Sclerosis				

Human stem cells have several actual or potential sources:

1. Cord Blood - Stem cells are extracted from the blood that remains in the umbilical cord following birth.
2. Post-Natal Placentas - Stem cells are extracted from the placenta waste following birth
3. Cadaveric Fetal Tissue - Embryonic Germ (EG) Cells are derived from the human fetal tissue which remains after spontaneous or elective abortion. (Usually 6-16 weeks gestation.)
4. IVF Embryos - Embryonic Stem (ES) Cells are derived from the inner cell mass of the embryo at the blastocyst stage. Here the embryo is usually around 4- 7 days old and comprises between 16 and 140 cells. These are embryos which are created in the in vitro fertilization (IVF) process which are no longer needed by persons being treated for infertility. Generally, these "left-over" cells are either donated to other persons or discarded.
5. Research IVF Embryos - Here, embryos are created through IVF for the sole purpose of obtaining the ESCs for research. Gametes are donated from males and females with the understanding that the embryos will be used for research purposes solely.
6. Cloned Human Embryos - In this instance, somatic cell nuclear transfer (SCNT) is used to create an embryo for research purposes. Denucleated egg is fused with somatic cell (not egg or sperm - and ideally would come from proposed ESC recipient to avoid histocompatibility concerns) to produce embryo from which ESC's are derived at blastocyst stage.
7. Cloned Chimera Embryos - SCNT is also used here, but the somatic cell of a human is introduced into an enucleated animal ovum (e.g. a cow) creating a hybrid embryo which takes on the human DNA.
8. Adult Cells - Stem cells are obtained from such areas as bone marrow, skin, blood, or even fat of live adult donors

APPENDIX II

POLICY RECOMMENDATIONS

My recommendations for ways to demonstrate appropriate respect for the embryo based on its moral status are as follows:

1. Place a limit on the time frame in which destruction of embryos for research purposes is allowed. I suggest 14 days after conception which is before the primitive streak begins developing and, thus, well before any possibility of sentience begins. This is also the point which is believed to be the last opportunity for twinning and, thus, before distinct individuation.
2. Place limits on the type of research allowed to include only such work that can show substantial benefit to the health of others and that can claim that human embryos are essential to the research.
3. Ensure informed consent for donors whether of gametes, frozen embryos, or fetal tissue. This regulation reflects the concern for individual autonomy and concern for the emotional well-being of those persons involved.
4. Ensure the decisions to abort fetuses or discard IVF embryos is separate and distinct from decision to donate to ES cell research. This policy reflects a shared goal to ensure that abortion or destruction will not be increased solely as a result of the opportunity to do some good with the donation of fetal tissue or IVF embryos. It aims at not legitimizing the acts solely through such subsequent actions. Any decision to abort a viable fetus should be neither induced or coerced by the possibility of benefit in donation.
5. Require the review by a national oversight body of research protocols whether the research is publicly or privately funded. This body should also be given the flexibility to adapt to future findings so as to avoid the bureaucratic delays that come in constantly refining legislation through the Congress.
6. Disallow the commercialization of spare IVF embryos, fetal tissue, or created embryos. This action will not only protect the status of our respect for life in general, but it will, importantly, guard against the exploitation of poor women who see donation of ova, embryos, or fetal tissue as a means to financial reward.
7. Prohibition of donation of fetal tissue to a specified recipient while allowing the donation of IVF embryos to a specified recipient. Such a measure further demonstrates the enhanced moral status of the developing fetus to that of the pre-14 day old embryo.
8. Clearly, both the Respect for Life and Transitivity of Respect Principles can further be heeded by assuring objectors that cloning of either human or hybrid embryos will not be used for “reproductive cloning” (bringing the embryo to personhood), but only for “therapeutic cloning.”

APPENDIX III

DISCUSSION TOPICS / OBJECTIONS

Instrumental Use: Opponents of ES cell research (and particularly opponents of the creation of embryos for this research) who take a deontological position, will likely suggest that it is wrong to

use embryos as a mere means to our ends rather than as ends in themselves. The argument claims that since in destroying the embryo we are using this “life” or this “human being” as a means towards some other’s end, then it is wrong to destroy the embryo. The response by advocates of ES cell research is that the embryo is not a sentient, rational, autonomous, or moral agent so it does not have full moral status, and, thus, cannot be considered as being “used.” In other words, it is impossible to “instrumentalize” (i.e., being inappropriately used as a means to another’s end) something which does not have full moral status. For example, using the multi-criterial approach, bricks may be used to build a house or a horse used to plow a field, but neither the bricks or the horse are instrumentalized. Likewise, using the full application of the multi-criterial principles, early embryos may be used to advance ES cell research, but the early embryos are not instrumentalized.

Inherent disrespect to life / Slippery Slope: This objection is simply that once we start down the path of the creation of life only to destroy it for other’s purposes or benefits, then we will never be able to set an end to the dangers imposed on our “right to life.” It is suggested here that since the proponents of ES cell research justify early embryo destruction and disregard the embryo’s inherent moral status, the inevitable result will be diminished respect for persons generally. What follows, for this objector, is that such justification of early embryo destruction will result in a rationale which could justify harmful experiments on other human subjects. While some slippery slope arguments I suspect are valid due to the logical nature of the move from one situation to another, the current argument is clearly more psychological in nature. It is an argument essentially that in taking current actions our emotions and moral sensibilities will become desensitized to the wrongfulness of certain future and unforeseen actions which are clearly wrong. The practical answer to such psychological slippery slope arguments is cooperative deliberation geared towards establishing legislative boundaries against those future, feared actions. However, the most forceful response to the slippery slope objector is that no such justification for the harming or destroying of human subjects can occur within the application of the full compliment of the multi-criterial

principles. The Agent's Rights and Human Rights principles will protect the human subjects with which the objector is concerned. Such human subjects have full moral status which cannot be diminished. Therefore, any harm to a human subject which may be justified will require an entirely different rationale than was used for the destruction of the early embryo. Such justification will have to meet a much higher standard and does not follow logically or psychologically from the decision to conduct ES cell research. Thus, the slippery slope objector's concern seems to be unwarranted in this instance. Nevertheless, the objector may still contend that I have not answered the question of specifically how to balance all of the interests and rights of those concerned. However, as I suggested above, no theory of moral status will give such answers outside of the context of the specific situation. The nature of the common ground I am seeking is one upon which we can collectively engage in such deliberations and the multi-criterial approach offers just such a ground.

Means Matter: While the common ground provided by a multi-criterial account of moral status may have helped us get to the point of gaining a reasonable consensus as to the use of some embryos in ES cell research, some objectors may still be uncomfortable with the creation of embryos either by IVF or somatic cell (SCNT) techniques. The objection is that the means of obtaining the embryos matters. Notwithstanding the fact that the promotion of creating embryos for research purposes (i.e., "therapeutic cloning") is not a new idea nor has it even usually met with condemnation from review boards, the reasons for allowing such techniques should be articulated. One reason for allowing therapeutic human cloning is the issue of histocompatibility. The problem is that stem cells from donors may lack immunological compatibility with the recipients. Thus, a practical way around such difficulties is to clone the recipient's own DNA, culture the resulting stem cells, and obtain completely compatible tissue for transplantation. Turning to therapeutic chimera cloning (see Appendix for definition), there is an underlying objection and intuitive objection to hybrid embryo creation based on the concern for mixing genes across species and the uncertainty of risks involved. One reason to allow such means as therapeutic chimera cloning is the reduction

of potentially coercive forces on women to donate gametes. Since obtaining oocytes from women is a difficult and somewhat painful procedure, the availability of these gametes will relieve any potential feelings of pressure by women to donate their eggs. On a more practical note, Advanced Cell Technologies work has shown that the use of cow ova results in only a minimal and inconsequential DNA mixing. Using the nuclear DNA from a human and the mitochondrial DNA from the cow results in less than one millionth of the DNA of the resultant hybrid embryo being bovine. Such presence is of no consequence in the acquisition of the stem cells which will, in fact, have no bovine DNA. Furthermore, the use of animal proteins to create drugs such as insulin and the use of animal genes or cells to create transplantable organs or tissue (e.g., man in Albany, New York injected with fetal pig cells to repair spinal cord as reported in Associated Press on April 24, 2001) are widely accepted practices. It is hard to see a significant difference from these practices when compared to the creation of hybrid embryos for the derivation of human stem cells.

Potentiality: The Kantian objector, though, may seek some common ground and respond that it is the “potential” or “viability” of the embryo which must be respected. While I do not have sufficient space to address this concern completely, I will briefly mention a few responses. If we accept this potentiality distinction, we will have returned to the ill-fated debate of the evolving biological standards of potential which can be taken to extremes. For instance, is the oocyte a potential person warranting full moral status? If so, then we must do everything we can to ensure its fertilization, development, and birth. In fact, any missed opportunity to have sexual relations is a wrongful act since, in the eyes of the Kantian objector, we are not honoring our highest value of life. So at what point is a potential person established? Maintaining my earlier position, I suggest that this is a normative decision aided by science and such decision could be some point around 14 days from conception. More to the point, if the IVF embryo is a potential person, then it is morally impermissible to discard unwanted or unneeded IVF embryos. Enactment of such a requirement to bring to fruition all IVF embryos is not only impractical and implausible, but, I suspect, would not be supported by even the staunchest Kantian objectors.

