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Framing the Public Discussion of Stem Cell Ethics

In the spring of 1996, two years before James Thomson first isolated and characterized pluripotent human embryonic stem cells, Michael D. West approached myself and my colleagues at the Graduate Theological Union in Berkeley. In particular, he sought conversation with Professor Karen Lebacqz and then-doctoral student, Suzanne Holland, along with me and colleagues at the GTU's Center for Theology and the Natural Sciences. West was then CEO of the Geron Corporation; and he would be the one to take the pioneering lead in the search for "immortal lines" of regenerating cells. West wanted counsel from theologians about the ethics of stem cell research.

This little historical fact is quite significant. At no point can one say that the science was proceeding without a connection with ethics, and we mean ethics grounded in theological reflection. Public ethical discussion is open and exploratory, to be sure; but research scientists as well as policymakers

have from the beginning been seeking out theological input.

Theological reflection and moral deliberation are requested by the public square

"Stem cell researchers have been confronted with the most serious religious and ethical challenge to science since the debate around nuclear fission," writes Laurie Zoloth. "In the largely secular pluralistic world of the academic science community, one is led to ask: Why do religious and philosophical arguments so dominate the debate on stem cells?"¹ To this question about the public policy debate over stem cells, what follows will provide an answer.

One fascinating element in public policy discussion over stem cells is that religious voices are being heard. The opinion of theologians is being asked for. However, the way theological opinions are received by scientists and by public policy makers differs from the way they are received in the church. Within the church, what theologians say is assumed to carry some authority. Because the Bible is an authority, and because theologians interpret the Bible, the words of theologians might be considered the Word of God, at least indirectly.

Not so in the secular public arena. In the public arena a wide variety of religious opinions is solicited. Not only Christian theologians are consulted. So also are spokespersons for Judaism, Islam, Buddhism, Hinduism, and native religious traditions.

The public square is pluralistic. Theologians are invited to speak, but not with authority. What theologians say about ethical matters is considered to be their perspective, their opinion. Even if theological opinions are taken seriously, they are not taken by themselves as definitive.

For those ethicists who think of the church as a community of theological reflection and *moral deliberation*, this should come as good news. Within the churches, topics such as stem cell research could be diagnosed and prescriptions tendered. Once this moral deliberation has reached some level of maturity, then it could be shared with scientists and the wider public. Such careful reflection and deliberation would be welcome in the public square.

This is true in principle. And sometimes it is true in practice. However, all is not peaceful in the laboratory or the public square. Unfortunately, some religious mouths have shot off their opinions before the requisite period of theological reflection and careful moral deliberation. Ethical voices have sounded like moral machine guns, blazing through the public square, cutting down the innocent as they go about their work. Ethical terrorists strike fear into the hearts of scientists in their laboratories. Researchers understandably defend themselves by hiding and avoiding dangerous public zones.

On the one hand, the new and complex science requires theological reflection and moral deliberation at the same level of newness and complexity.

Scientists as well as public policymakers were at first welcoming of religious contributions at this level. On the other hand, ethical terrorists have so shot up the public square with premature judgments accompanied by claims to apodictic authority that apply only within the church and not without, that many of those in science and in politics have fled the scene.

Be that as it may, our time calls for integrity on the part of our churches' theologians and ethicists. It calls for a period of gathering the facts, assessing what has been gathered, ferreting out implications for understanding human nature within creation and before God, and then proceeding to provide moral guidance in such a way that healthy-minded persons can find an appropriate path to follow. Robert Benne grasps the church's opportunity and accompanying responsibility to speak to the wider social order: "The church should provide a vision of the common good that is both hopeful and realistic."²

Unfortunately, competing ethical frameworks are non-compossible

The lingering smoke in the public square due to the firings of ethicists' guns leads to moral confusion. Boston College's Lisa Sowle Cahill sniffs the smoke. "Public debate sometimes seems to be caught in an impasse between the value of embryos and the promised benefits of stem cell research."³ So also does Harvard's Ann Kiessling

and colleague Scott Anderson. "The people with the most to gain are those patients who are sick or dying from one of the diseases targeted by stem cell therapy. For them the long-windedness of the debate is often unbearable."⁴ Can we simply fire shots at all the theologians? "There are simply too many diametrically opposed theologies—many claiming to be the actual word of God—to reach a consensus."⁵ Now, this is the smoke of confusion. In what follows, I hope some of the smoke will clear.

I submit that we have confusing smoke because it appears that ethicists are engaged in a public shoot-out like Wyatt Earp at the OK Corral. It was on October 26, 1881, in Tombstone, Arizona Territory, that Wyatt Earp, his brothers Morgan and Virgil along with Doc Holiday, shot at their enemies Billy Clanton and Frank and Tom McLaury. These enemies shot at each other. Could this be an analogue to today's ethical shootout? No. A closer look will show that today's ethical gunslingers are fighting in separate corrals. Only a few stray bullets now and then take a victim.

How best can we describe the current debate over stem cells? I recommend that we think of the separate corrals as separate ethical frameworks. Each framework provides a set of theological assumptions regarding human nature and regarding ethical goals. Within these frameworks moral deliberation takes place. The development of moral guidance rises up to articulation, but their respective contexts remain co-present, so to speak. What is said

(*das Gesagte*) cannot be extricated from what is unsaid (*das Ungesagte*), to call to mind the hermeneutics of philosopher Hans-Georg Gadamer.

These frameworks of the unsaid are non-compossible. To be compossible, ethical frameworks would have to be compatible, consistent with one another. But they are not. They operate with different pictures of the human condition and different understandings of the central ethical question. The result is that discussants in the public conversation talk past one another. They do not engage. Or, to use our gunfight analogy, shots fired miss their targets by a mile.

Now, within each framework one could imagine a moral argument that would support stem cell research and a moral argument that would oppose it. The framework provides the background assumptions within which moral reasoning takes place. Having said this, however, each of the three frameworks we will diagnose has become identified with one or another moral position. As we will see shortly, embryo protection and nature protection have become identified with the anti-stem cell camp. The medical benefits framework has become identified with support for stem cells and the larger program of regenerative medicine.

What are the ethical frameworks in the stem cell debate?

According to my diagnosis and that of my Berkeley colleagues who have been working on this, the

three non-compossible frameworks within which the current public controversy over stem cell research is being argued are these: (1) the *embryo protection* framework, (2) the *nature protection* framework, and (3) the *medical benefits* framework. Within each framework one may argue either in favor of or against support for stem cell research, even though the first two are dominated by opponents and the third by advocates.

Those firing from within the embryo protection corral are deputies of the Vatican and, in America, their evangelical allies. During the era of the George Bush administration, the White House operated from within this ethical framework. The central question of this framework is this: is human embryonic stem cell research a form of abortion? Vatican Catholics and American evangelicals answer yes. Because they have taken a previous stand against elective abortion, they feel they must commit themselves to shutting down this kind of scientific research. The destruction of the blastocyst constitutes the destruction of a human individual, or at least a potential human person. This is immoral. Scientists are dubbed "baby-killers." Stem cell scientists promote the "culture of death," to use the words of Pope John Paul II. Although stem cell research on adult stem cells could be deemed moral, research on hES cells is uncompromisingly immoral.

In the nature protection corral we find philosophers and social critics who have been opposing various forms of genetic science since the 1970s.

The fight against stem cell research extends battles fought earlier against recombinant DNA, germline intervention, the Human Genome Project, gene patenting, and cloning. The fundamental question of this framework is this: will the manipulation of human genes dehumanize us? The correlate questions are these: does the manipulation of human genes constitute Promethean *hubris* on the part of our scientists? Do scientists exhibit excessive pride by trying to make nature better? Do scientists risk violating our inherited genetic essence? Are scientists playing God? Would success at altering human nature by extending the human life span and such changes risk placing our society on a downward slippery slope toward the feared *Brave New World*, originally described in 1931 by Aldous Huxley?

When nature protectionists articulate their moral position, they say no to scientists who want to get into our DNA with wrenches and screwdrivers and try to make it better. Attempts to improve human life through genetic manipulation risk a violent response on the part of nature. They risk so violating nature that we will eventually suffer from this loss of our inherited essence. So go the arguments of those who oppose "playing God" in the laboratory. This includes, among many others, Leon Kass, former chair of the U.S. President's Council on Bioethics (COB).

The third corral has a sign on it: "Medical Benefits." Those in this ethical framework begin with the question: could regenerative medicine provide

FRAMEWORK	<u>Embryo Protection</u>	<u>Nature Protection</u>	<u>Medical Benefits</u>
ADVOCACY GROUPS	Vatican Catholics Evangelical Protestants Orthodox Christians	President's Council on Bioethics	Patient Advocacy Groups
SPOKESPERSONS	White House	Leon Kass, Jeremy Rifkin	All Jewish and most Christian theologians
CRITERION	Abortion Nonmalificence	Post-Human Technoscience Nonmalificence	Medical Benefits Beneficence

Three Ethical Frameworks

a leap forward in the relief of human suffering and the enhancement of human flowering; and, if so, is this opportunity a sufficient moral warrant for supporting stem cell research? What frames the moral reasoning here is the presence among us of millions if not billions of persons who suffer from genetic-based diseases or traumas such as heart disease, Parkinson's, Alzheimer's, spinal cord injury, diabetes, and others. When an opportunity to relieve suffering arises, the public policy question arises: should we muster resources for the possibility that we might be able to help

large numbers of persons in dramatically decisive ways? Within the medical benefits framework we find advocates for stem cell research among our scientists and patient advocacy groups. We also find Christian and Jewish leaders who see public support as a social expression of love and justice.

These three are theologically or at least philosophically grounded ethical frameworks. There is a fourth. The fourth might be called the *research standards framework*. One might think of this as a secular framework, because it is shared by both public policy makers and laboratory researchers around the world. It spells out which procedures are deemed ethical, and in some cases even legal. It provides the criteria to meet when applying for grant funding. Frequently, a look at research standards through a magnifying glass will discern underlying theological decisions, hidden beneath secular or religiously neutral language.

In the chapters that follow, we will take a closer look at each of the three theologically based frameworks as well as the research standards framework.

3.

The Embryo Protection Framework

The National Council of the Churches of Christ in the USA frames the ethical questions surrounding stem cell research this way: "As with the abortion debate, much of the stem cell debate turns on the differing views we hold on the moral status of human embryos."¹ From the point of view of the NCC, the ethical focus is on the embryo, not the persons who might benefit from regenerative medicine. This is the basic orientation that distinguishes the *embryo protection framework*.

Ethicists within the embryo protection framework focus on the issue: does the embryo at the blastocyst stage outside a mother's body require protection from death at the hands of laboratory researchers?² Or, to say it another way: is stem cell research a form of abortion; and, if so, are laboratory scientists baby-killers?

As the reader can see, the targets of ethical concern here are not the potential patients who might benefit from regenerative medicine but rather the

potential persons whose lives will be aborted in the petri dish. The central question deals with derivation, not benefit. The decisive issue is the moral status of the preimplantation embryo—the *ex vivo* blastocyst in the petri dish—from which human embryonic stem cells are derived. The orienting ethical question of this first framework is this: does the blastocyst have morally protectable dignity and, if so, are we forbidden to dismantle it when pursuing medical research? One may answer yes or no to this question. The very posing of this question places the discussion within the embryo protection framework.

Opposition to stem cell research on the grounds that it is a form of abortion is most frequently associated with the Vatican, but is shared by many American evangelicals and Orthodox ethicists as well. Opposition to stem cells can be expected from the magazine *Christianity Today*, from denominations such as the Southern Baptist Convention or the Lutheran Church—Missouri Synod, as well as conservative political advocacy groups such as the “Center for Bioethics and Culture” network and “First Do No Harm.” Because of the worldwide attention given to the official Roman Catholic voice, this framework is often taken to be *the* religious framework.

What are the theological assumptions in the embryo protection framework?

Several key theological assumptions define those who oppose embryonic stem cell research based

on moral reasoning from within the embryo protection framework. The fundamental theological assumption is that human dignity is fully established at conception; and this applies equally to zygotes both within the mother’s body *in vivo* and *ex vivo* in the laboratory. What makes a human being a person is origin. Our origin at conception establishes our individuality, our dignity, and our moral protectibility.

Roman Catholic theologians offer the most complete description of this theological anthropology. What happens according to nature within a mother’s body is the meeting of three things: the mother’s egg, the father’s sperm, and God’s newly created soul. According to the late Pope John Paul II, when the sperm and egg unite to create a unique genome, then God creates an immortal spiritual soul and imparts it to the conceptus. Once the early embryo has its immortal soul, it then gains dignity. With dignity, we must protect it from destruction by medical scientists, even when it appears outside the mother’s body in a laboratory setting.

What impresses the Vatican is genomic novelty. Because the genome of the conceptus is neither that of the mother nor that of the father, but rather a brand new combination of the two, this gives it individuality. Only a human individual can receive a spiritual soul; and this individuality is established at conception.

Now, we might ask, does God impart this immortal and spiritual soul promptly for the

zygote while still at the single cell stage? Can we specify the exact moment of ensoulment? No, says the Vatican. Ensoulment cannot be discerned by science. It can be discerned only by philosophy. Ensoulment is metaphysical, not physical.

Does this mean the early embryo might make it to the blastocyst stage and still not have received its soul? Yes. If so, might it then be dismantled for use in stem cell research? No. Even if the soul is not yet present, it is still on the way. Once the unique genome has been established and an embryonic individual has been established, then the early embryo is ready for ensoulment. This potential for ensoulment or potential for personhood is sufficient to confer upon the blastocyst dignity and, thereby, moral protectability. In sum, potential ensoulment is sufficient to confer dignity and, thereby, to block human embryonic stem cell research.

The *genomic novelty position* was articulated already in the 1987 encyclical *Donum Vitae*, directed by the head of the Congregation for the Doctrine of the Faith.⁴ That director was Cardinal Joseph Ratzinger, now Pope Benedict XVI. This predates both the isolation of hES cells as well as the cloning of Dolly. Yet, what is said in 1987 continues to structure the Vatican position. *Donum Vitae* asserts that three elements are crucial to the creation of a morally defensible human individual: the father's sperm, the mother's egg, and a divinely implanted soul. *Donum Vitae* notes that at fertilization a novel genetic code—neither

that of the mother nor that of the father—is created. *Donum Vitae* takes this genomic novelty to be evidence of the presence of a unique individual, and thus reasonably the condition for ensoulment. Ensoulment is the event which establishes a divine moral claim, so that the destruction of the blastocyst constitutes not only murder but an offense against God's creation. Once a unique genome has been established, then it is morally incumbent on us to protect it from harm.

Pope John Paul II was a champion of human dignity. He defended dignity in the face of what he perceived to be a global "culture of death."⁵ By "dignity" he meant what the Enlightenment since Immanuel Kant has meant, namely, each human person should be treated as a moral end and not merely as means to some further end. When it comes to stem cell research, to sacrifice a future person at the blastocyst stage is to violate that early embryo's dignity. When U.S. President George W. Bush visited the Vatican in the spring of 2001, the pope extended application of the culture of death to include scientists researching. Even though medical advance is itself a good thing, said the Holy Father, protection of the early embryo takes moral precedence. Our first ethical responsibility is to do no harm—to embrace non-maleficence—toward the unborn.

To summarize the Vatican argument, the sequence from theological anthropology to moral reasoning goes like this: (a) the establishment of an individual person through genomic novelty;

(b) divine impartation of an immortal spiritual soul, or at least the potential for receiving such a soul; (c) the establishment of dignity, meaning that the early embryo should be treated as an end and not merely a means to the further end of medical research; (d) moral protectability from *ex vivo* destruction at the blastocyst stage; and, finally, (e) opposition to human embryonic stem cell research and therapy.

Some non-Catholics hold the Vatican position

Many non-Catholics rely upon the same basic moral reasoning. One Orthodox bioethicist, John Breck, reiterates the Vatican assumption with complete reliance on the principle of genomic novelty. In a statement on "Orthodoxy and Abortion," he writes, "The Orthodox Church has always taught that human life begins at conception, when a sperm unites with an ovum to produce a genetically unique living being."⁶ Genetically unique human beings should be protected from abortion. It would follow that genetically unique embryos in the petri dish should be similarly protected.

Evangelical Nigel Cameron of the Center for Bioethics and Culture rests his case on "human life with a dignity which is intrinsic and, therefore, with an inalienable moral standing." This permits extension of the abortion debate to early embryo research and other "issues of life and death *ex utero*."⁷ Missouri Synod Lutheran bioethicist Gilbert Meilaender

supports the Vatican position as well. With dramatic appeal, he writes, "The embryo is, I believe, the weakest and least advantaged of our fellow human beings." Then, citing Karl Barth, Meilaender adds, "And no community is 'really strong if it will not carry its . . . weakest members.'"⁸

In its "Resolution: On Human Embryonic and Stem Cell Research," the Southern Baptist Convention reiterates its opposition to abortion and then calls "upon the United States Congress to maintain the existing ban on the use of tax dollars to support research which requires the destruction of human embryos."⁹

It is important to recognize that the position taken by the Vatican and its friends within the embryo protection framework is characterized by the bioethical principle of *nonmaleficence*—it ethically frames the stem cell debate as a matter of avoiding doing harm. Regardless of what good might result for future suffering persons who might benefit from today's research, the issue of doing harm or avoiding harm to the embryo takes precedence.

When we remind ourselves of the ancient Hippocrates, who still inspires modern medicine, we recall he said to benefit, and do no harm."¹⁰ Non-maleficence picks up on the second half of his admonition. Another bioethical principle picks up on the first half, *beneficence*, which means we should pursue better health when the opportunity is open to us. Within the embryo protection framework, nonmaleficence trumps beneficence.

Can embryo protectionists approve use of discarded or spare embryos?

What about the discarded or spare embryos sitting in freezers of IVF clinics? It is estimated that from 400,000 to 500,000 of these fertilized ova will never be implanted in a mother's body. Eventually, they will deteriorate and be destroyed. Might we benefit by thawing some of these out and using them for stem cell research? Could this be deemed moral from within the embryo protection framework?

The yes answer could be identified as the *discarded embryo* position. Some refer to it as the *nothing is lost* position. To date, the preponderance of embryonic stem cell research has been conducted on these "excess" or "surplus" or "spare" embryos originally created for purposes of in vitro fertilization. In the U.S. and United Kingdom a half million such embryos exist in storage freezers. Those who hold the discarded embryo position believe it is morally licit to use for research embryos that will otherwise be destroyed. What is illicit would be the deliberate creation of embryos that would be destroyed for research purposes. Yale theologian Gene Outka draws a conclusion: "The creation of embryos for research purposes only should be resisted, yet research on 'excess' embryos is permissible."¹¹ Addressing the U.S. Senate in 2005, Senator Bill Frist said, "We should federally fund research only on embryonic stem cells derived from blastocysts left over from

fertility therapy, which will not be implanted or adopted but instead were otherwise destined by the parents with absolute certainty to be discarded and destroyed."¹²

Not all Roman Catholics are satisfied with the discarded embryo alternative. It looks too much like a compromise on their absolute claim. In fact, taking the Roman Catholic argument back a step, no church approval of IVF was ever given. Nor was church approval ever given of storing unused fertilized ova. IVF violates natural law; and the storing of frozen ova risks the death of potential human persons. Discarding frozen ova is a form of abortion. So when scientists take advantage of discarded or spare embryos, they are complicit in the earlier illicit act of creating zygotes that might never be brought through a pregnancy to birth. Pressing such spare zygotes into medical service does not redeem the scientists from complicity in baby-killing. Richard Doerflinger, spokesperson for the U.S. Conference of Catholic Bishops, holds this extreme view. He would say, "Intentional destruction of innocent human life at any stage is inherently evil, and no good consequence can mitigate that evil."¹³

What about the Orthodox? H. Tristram Engelhardt, Jr., an Orthodox bioethicist, defends the discarded embryo alternative with careful argumentation. The use of discarded embryos stored in IVF clinics is morally licit, because such use draws something good out of an otherwise immoral situation. "There is no bar in principle against using for a good

end something that has been acquired by heinous means, as long as one has not been involved in (1) employing these evil means, (2) encouraging their use, (3) avoiding their condemnation, or (4) giving scandal through their use. One can drink water from a well that was dug by unjustly forced labor."¹⁴

Engelhardt's own church bishops in the Orthodox Church of America, however, would disagree. The use of discarded embryos is illicit because the original wrong of killing a potential person cannot be redeemed when the remains are pressed into medical service. "The very act of destroying those embryos is evil, and we may not profit from evil even to achieve a good and noble end."¹⁵

These theological deliberations have spawned secular counterparts in the research ethics framework. It has become important to both U.S. federal guidelines as well as National Academy of Sciences guidelines that embryos not be created specifically for research. Research embryos must be created for some other purpose and then diverted into research. If one asks why, no scientific reasoning can explain such a policy. The above theological reasoning is the hidden explanation underlying the secular formulations.

Could adult stem cells provide pluripotency?

Many among the embryo protectionists argue that human embryonic stem cells are unnecessary. Scientists can get what they want, namely,

pluripotency and plasticity, from adult stem cells. If we could harvest adult stem cells from cord blood or nerves or other sources, then no blastocysts would need to be destroyed. Scientists could pursue regenerative medicine without becoming baby-killers.

Roman Catholic bioethicists are the ones most likely to lift up the prospect that adult stem cell use will make hES cell use unnecessary. "The progress and results obtained in the field of adult stem cells (ASC) show not only their great plasticity but also their many possible uses, in all likelihood no different from those of embryonic stem cells."¹⁶

Unfortunately, as we saw in the earlier chapter on the science of stem cells, this is not scientifically possible. Adult stem cells are in some cases multipotent, but this is insufficient. Multipotent cells are already destined to remain within their own already differentiated type. And, what is decisive, multipotent stem cells lack the plasticity to integrate into the host tissue. Adult stem cells "do not prove true stem cell plasticity."¹⁷ Research on the medical value of adult stem cells should continue, certainly; but they cannot become a replacement for pluripotent hES cells. This attempt to circumvent the ethical challenge by sidestepping blastocyst disaggregation lacks scientific support.

Just when does an individual appear?

Before we look at more differences in moral reasoning within the embryo protection framework,

let us return for a moment to the relevant science. Should the Vatican or John Breck rely on the concept of genomic novelty as the requisite for ensoulment and personhood in the way they do?

Other options are available. Traditional Jews date ensoulment at quickening, 40 days after conception. According to the Qur'an, Muslims can appeal to either 40 or 120 days after conception. In both cases, ensoulment takes place within the mother's body. It would not take place in a laboratory petri dish.

Identifying ensoulment with the establishment of a unique genome is questionable, because nothing like an individual person appears in early embryogenesis either in the petri dish or the mother's body. At the moment of conception a unique genome is established, to be sure. However, this is not the moment in which a new individual person is created. Nor is it the case that each new human person possesses a single unique genome. The science can be helpful here.

Three phenomena are well worth paying attention to. First, the mother's body does not necessarily honor the moment in which a unique genome is established with quite the respect the ethicists do. Estimates range from 50 percent to 80 percent of naturally fertilized eggs are flushed from the mother's body before they can adhere to the uterine wall. Ponder just how many unique genomes get flushed right out of the system! If the Vatican is serious about associating a divine soul with each and every zygote, and if the mother's body

by nature eliminates the majority of ensouled embryos, then theologically it would be difficult to see God's intentions as carried out by natural processes.

The second relevant phenomenon is twinning. The zygote is preformed. Each cell for a number of days is totipotent—that is, each blastomere can make an entire person, at least in principle. During the first few days the bunch of cells can divide into twins, quadruplets, or rarely octuplets. Each of these individuals would have the same genetic code. Monozygotic twins—what we call “identical” twins—are the result of such cell division. If identical triplets are born, we know that the early embryo had split into four and one of them was flushed from the mother's body at some point. Further, during these early stages, which can last up to 12 or 14 days, these divided embryos can recombine. Twins can become a single person again. All this is possible because the cells that are dividing during early embryo development are preformed, not yet differentiated, not yet committed to making one or more individual human beings. We must conclude that nature does not connect genetic uniqueness with the uniqueness of being a human individual.

The third phenomenon of interest is chimerism. A chimera is a single individual with two or more genomes. Within the mother's body, *in vivo*, frequently two or more eggs can be fertilized at the same time. If two separate fertilized eggs develop simultaneously and each creates its own

pregnancy, two babies will be born at the same time. We know these as “fraternal” twins—that is, twins with different genomes. Fraternal twins are the equivalent of any other pair of brothers and sisters. Yet—and here is the interesting point—this pair of zygotes can combine to form a single embryo. If brought to term, the resulting baby is a chimera, a single person with two genetic codes.

Now it gets even more fascinating. If the two fertilized ova are of the same gender, then the baby girl or baby boy may grow up, live a normal life, and never know that he or she began as fraternal twins. If, however, a male and female combine, then the resulting baby is a hermaphrodite. The term “hermaphrodite” combines the names of two Greek gods, the male Hermes with the female Aphrodite. Doctors may look at such a newborn baby and wonder, “Now, just what is it? A boy? A girl?” Frequently early surgery steers the newborn in the direction of one gender or the other. In such a case, a genetic test is likely to reveal two genomes, one with a Y chromosome and the other with two Xs.

One conclusion we might draw from these phenomena is this: if it is important that ensoulment and dignity belong to a single individual with a single genome, then nothing like this can be established at conception *in vivo*, let alone at the blastocyst stage *ex vivo*. Perhaps the 14-day rule might take this discussion a bit further.

Might the 14-day rule offer a compromise?

If we would like to press the theological logic tied to the human individual, adherence to the uterine wall accompanied by the appearance of the primitive streak between 12 and 14 days stand up and ask for notice. Conservative Roman Catholic bioethicist Norman Ford has taken notice. “In short, it can be argued,” says Ford, “the presence of the genetic code itself does not suffice to constitute a human individual, but that only its activation does, whereby specialized cells and membranes are produced to form and enclose an organized human individual about fourteen days after fertilization. If this argument is accepted, fertilization is not the beginning of the development of the human individual but the beginning of the formative process and development *into* one (or more human individuals). Ultimately this issue cannot be resolved in the first instance by appealing to the teaching of the Church, but only by reflection and critical analysis on all the relevant scientific information interpreted in the light of sound philosophical principles.”¹⁸

Ford is trying to find a compromise path the Vatican can follow. Not everyone is so patient. Impatient with those who seek to block stem cell research by protecting the early embryo, Ann Kiessling and Scott Anderson weigh in, supporting the 14-day rule as the minimum threshold for establishing individuality. “The moment when a

sperm and an egg meet provides a romantic starting point for life, but in reality that moment is pretty fuzzy . . . conception fails as a signpost for novel life. It is also clear that not every zygote is destined by nature to complete the journey. Along the way, problems may occur that cause up to two-thirds of all zygotes to be lost. . . . Until about day 14, the blastocyst has the potential to split and form twins. The idea of personhood before this time is counterintuitive."¹⁹

In principle, one could use this emphasis on individuation at 14 days to support opposition to abortion as well as support research on hES cells. If we understand opposition to abortion as the removal of a fetus from a pregnant woman's body, one could take a pro-life stand on abortion and still affirm that human embryonic stem cell research is morally licit. Ford himself does not follow this path; but it is a reasonable one to take, given Ford's reasoning.

Let us pause for just a moment to compare the abortion debate that broke out in the late 1960s with the contemporary stem cell debate. Commonly we would define elective abortion as the surgical removal of a fetus from a woman's body. Stem cell research does not involve the removal of a fetus from a woman's body. What laboratory scientists are interested in is the blastocyst at four to six days. Even *in vivo*, the blastocyst would not be adhering to the mother's uterine wall. These are notable differences.

The focus of opposition between pro-choice and pro-life arguments in the abortion debate is

the woman's right to choose. This does not apply to *ex vivo* research, at least not after her decision to donate her genetic material to science. What needs to be spelled out within the embryo protection framework is just how and how not the stem cell debate represents a reiteration of the abortion debate.

Arguing in support of stem cells from within the embryo protection framework

Recall that within the Vatican position we could distinguish between potential ensoulment and actual ensoulment. For the two recent popes, potential ensoulment is sufficient to establish dignity and moral protectability. On the basis of potential ensoulment or even potential personhood, might the logic go the opposite direction?

A potential person is not an actual person. Potential dignity is not actual dignity. Might we find room here for use of *ex vivo* blastocysts in medical research? Karen Lebacqz thinks so. She puts it this way: "First, the embryo or tissue must be valued. . . . To respect the embryo is to affirm that the value of the embryo or tissue is *not* dependent on its value for us or its usefulness to us. Respect sees a value in itself beyond usefulness. . . . Second, such an entity can be used in research and can even be killed. To do so is not in itself disrespectful."²⁰

In parallel fashion, Roman Catholic bioethicist Thomas Shannon gingerly works through the

issues to find a way to meet the Vatican concerns to protect human dignity while recognizing an opening toward stem cell research. Right after fertilization, Shannon grants, the zygote is a living entity. It possesses human nature. But this is a *common* human nature with an array of potentials. Even if personhood is one of the potentials, the activated zygote is not yet an individuated person; and thus it does not yet have dignity. Embryogenesis is a process, and dignity cannot be applied until we have an individual person. Individuation does not appear at conception, as the Vatican mistakenly assumes. "Persons," Shannon argues, "have a dignity; natures have a value. The dignity of the person grounds a more absolute standing. . . . The value of human nature does not generate the same level of protection. . . . Nonetheless, it is human nature and it is to be valued."²¹ In sum, one can hold a position that affirms an early embryo is a person in potential and, with an appropriate level of respect, still support embryonic stem cell research.

Gilbert Meilaender, whom we associated with a stricter embryo protection position above, finds such arguments for respect or value ascribed to the pre-differentiated embryo less than convincing. He recommends that, "If we forge ahead with embryonic stem cell research, we simply scrap the language of respect or profound respect for those embryos that we create and discard according to our purposes. Such language does not train us to think seriously about the choices we are making, and it is, in any case, not likely to be believed."²²

Meilaender is among those who would take a position contrary to that of Lebacqz and Shannon. Meilaender argues that the embryo—though obviously not a human being in the full sense—is still at minimum a *potential* human being; and this potentiality warrants protection. The blastocyst should not be treated as a means to some further end; to do so would be to ignore the continuous development of the individual from the embryonic to fetal and infant stages. It follows that human embryonic stem cell research should be halted. Meilaender can find support from Roman Catholic Lisa Sowle Cahill, who says, "The counterargument is that as long as an embryo is a developing life within a human genetic code, it is a person despite its uncertain identity and prospects."²³

Conclusion

Within the embryo protection framework, one might argue against stem cell research or in favor of research. Either way, the focal question has to do with the moral status of the *ex vivo* blastocyst. The central ethical concern here is nonmaleficence—that is, how to avoid doing harm to the early embryo. When we turn to the nature protection and medical benefits frameworks, we will see that moral reasoning pivots on a different center.

Jones, "Embryonic Stem Cell Lines Derived from Human Blastocysts," *Science* 282 (6 November 1998): 1145-47.

7. Both patents, 5,843,780 (1998) and 6,200,806 (2001) have the same name: "Primate Embryonic Stem Cells." Note that we human beings are here referred to as primates.

8. Michael J. Shablott, Joyce Axelman, Shunping Wang, Elizabeth M. Bugg, John W. Littlefield, Peter J. Donovan, Paul D. Blumenthal, George R. Huggins, and John D. Gearhart, "Derivation of Pluripotent Stem Cells from Cultured Human Primordial Germ Cells," *Proceedings of the National Academy of Sciences* 95 (November 1998): 13726-31.

9. Thomas B. Okarma, "Human Embryonic Stem Cells: A Primer on the Technology and Its Medical Applications," *The Human Embryonic Stem Cell Debate: Science, Ethics, and Public Policy*, ed. Suzanne Holland, Karen Lebacqz, and Laurie Zoloth (Cambridge and London: MIT Press, 2001), 3.

2. Framing the Public Discussion of Stem Cell Ethics

1. Laurie Zoloth, "Immortal Cells, Moral Selves," *Handbook of Stem Cells*, ed. Robert Lanza, 2 vols. (Amsterdam: Elsevier Academic Press, 2004), 1:747.

2. Robert Benne, *The Paradoxical Vision: A Public Theology for the Twenty-First Century* (Minneapolis: Fortress Press, 1995), 222.

3. Lisa Sowle Cahill, book review of *The Human Embryonic Stem Cell Debate* in *National Catholic Bioethics Quarterly* 2:3 (Autumn 2002): 559-62.

4. Ann A. Kiessling and Scott Anderson, *Human Embryonic Stem Cells* (Boston: Jones and Bartlett Publishers, 2003), 197.

5. *Ibid.*

3. The Embryo Protection Framework

1. The National Council of the Churches of Christ in the USA, "Fearfully and Wonderfully Made: A Policy on Human Biotechnologies," <http://www.nccusa.org/pdfs/BioTechPolicy.pdf>, lines 307-308.

2. A fuller exposition of this as well as the other frameworks will appear in a book I am currently preparing with two co-authors, Karen Lebacqz and Gaymon Bennett, tentatively titled, *Immortal Lines: Theologians Say "Yes" to Stem Cells*.

3. Center for Bioethics and Culture Network (CBC): www.thecbc.org. "First Do No Harm": www.donoharm.org.uk/.

4. Congregation for the Doctrine of the Faith, "Instruction on Respect for Human Life in Its Origins and on the Dignity of Procreation," (*Donum Vitae*) (22 February 1987), *Acta Apostolicae Sedis* 1988 (80), 70-102. See also: John Paul II, *Evangelium Vitae* (25 March 1995), *Acta Apostolicae Sedis* 1995, (87), 401-522.

5. Pope John Paul II, *The Gospel of Life* (New York: Random House, Times Books, 1995).

6. John Breck, *The Sacred Gift of Life: Orthodox Christianity and Bioethics* (Crestwood, N.Y.: St. Vladimir's Seminary Press, 1998), 259.

7. Nigel M. de S. Cameron, *The New Medicine: Life and Death after Hippocrates* (Chicago and London: Bioethics Press, 1991, 2001), 100-101.

8. Gilbert Meilaender, "Some Protestant Reflections," *The Human Embryonic Stem Cell Debate: Science, Ethics, and Public Policy*, ed. Suzanne Holland, Karen Lebacqz, and Laurie Zoloth (Cambridge and London: MIT Press, 2001), 142.

9. Southern Baptist Convention, "Resolution: On Human Embryonic and Stem Cell Research," cited in *God and the Embryo*, ed. Brent Waters and Ronald Cole-Turner (Washington, D.C.: Georgetown University Press, 2003), 180.

10. Hippocrates, *Epidemics*, 1:xi in W.H.S. Jones, *Hippocrates with an English Translation* (Cambridge, Mass.: Harvard University Press, 1959), 1:165.

11. Gene Outka, "The Ethics of Human Stem Cell Research," *God and the Embryo*, 31.

12. Frist's speech quoted by Michael Bellomo, *The Stem Cell Divide* (New York: American Management Association, 2006), 100.

13. Richard Doerflinger, "The Policy and Politics of Embryonic Stem Cell Research," *National Catholic Bioethics Quarterly* 1:2 (Summer 2001): 143.

14. H. Tristram Engelhardt, Jr., *The Foundations of Christian Bioethics* (Lisse: Swets and Zeitlinger, 2000), 261.

15. "Embryonic Stem Cell Research in the Perspective of Orthodox Christianity: A Statement of the Holy Synod of Bishops of the Orthodox Church in America," cited in *God and the Embryo*, 173.

16. Pontifical Academy for Life, "Declaration on the Production and the Scientific and Therapeutic Use of Human Embryonic Stem Cells," cited in *God and the Embryo*, 167.

17. Catherine M. Verfaillie, "Adult Stem Cells: Tissue Specific or Not?" *Handbook of Stem Cells*, ed. Robert Lanza, 2 vols. (Amsterdam: Elsevier Academic Press, 2004), 2:14.

18. Norman Ford, *The Prenatal Person: Ethics from Conception to Birth* (Oxford: Blackwell, 2002), 160, Ford's italics. See also Margaret A. Farley, "Stem Cell Research: Religious Considerations," *Handbook of Stem Cells*, 770.

19. Ann A. Kiessling and Scott Anderson, *Human Embryonic Stem Cells* (Boston: Jones and Bartlett Publishers, 2003), 194.

20. Karen Lebacqz, "On the Elusive Nature of Respect," *The Human Embryonic Stem Cell Debate*, 159.

21. Thomas A. Shannon, "Grounding Human Dignity," *Dialog*, 43:2 (Summer 2004): 117.

22. Meilaender, "Some Protestant Reflections," 145.

23. Lisa Sowle Cahill, "Stem Cells: A Bioethical Balancing Act," *America*, 184:10 (2001), 14-19.

4. The Nature Protection Framework

1. Philip Hefner, "The Genetic 'Fix': Challenge to Christian Faith and Community," *Genetic Testing and Screening*, ed. Roger A. Willer (Minneapolis: Kirk House, 1998), 76.

2. See: President's Council on Bioethics, *Monitoring Stem Cell Research* (2004) and *Beyond Therapy: Biotechnology and the Pursuit of Happiness* (2004) located online at: <http://www.bioethics.gov>.

3. Leon R. Kass, *Life, Liberty and the Defense of Dignity: The Challenge for Bioethics* (San Francisco: Encounter Books, 2002), 146.

4. *Ibid.*, 167.

5. Leon R. Kass and James Q. Wilson, *The Ethics of Human Cloning* (Washington, D.C.: AEI Press, 1998), 18.

6. See: Ted Peters, *Playing God? Genetic Determinism and Human Freedom*, 2d ed. (New York and London: Routledge, 2002), for an extensive analysis of the Promethean myth at work in modern society.

7. Kass and Wilson, *The Ethics of Human Cloning*, 18.

8. Jeremy Rifkin, *Algeny* (New York: Viking, 1983), 252.

9. Zoloth, "Immortal Cells, Moral Selves," *Handbook of Stem Cells*, ed. Robert Lanza, 2 vols. (Amsterdam: Elsevier Academic Press, 2004), 1:749.

10. "Embryonic Stem Cell Research in the Perspective of Orthodox Christianity: A Statement