

The Founders and the Ethics of State Science

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As a native Midwesterner, transplanted to the east, I'm glad to be back in the nation's heartland. It is especially an honor to be here at a time when the citizens of Missouri are contemplating such momentous decisions. In order to be of what help I can I want to turn away, at least for part of my time, from the flame and smoke of partisan contention and cast an eye back to an earlier era. As a political scientist, I have approached the current bio-ethical dilemmas about the use of stem cells derived from human embryos by first wondering what guidance the nation's founding documents might provide. Especially since any amendment to the Missouri constitution must not conflict with the nation's founding charter, a constitutional inquiry is a necessary beginning point. Now, it might seem to be an easy question to which the most obvious answer is: The U.S. Constitution offers no guidance on such a matter, since the Founders knew nothing of biotech possibilities like in vitro fertilization and human cloning. Not even a cutting-edge scientist like Ben Franklin imagined such projects. Although it is surely true that the technology is new, I intend to argue that our founding charter, particularly as expounded by Abraham Lincoln and undergirded by the Declaration of Independence, does offer principles that enable us to assess today's technology.

Before I get to that longer argument, I want to just say a word about the easy and obvious answer, namely, that the Constitution offers us no biomedical guidance. When the Constitution is silent, it simply means that the matter is one for the current generation

to address. We will, of course, do so through the political structures established by the Constitution. Accordingly, the silence of the Constitution might best be understood as an invitation to practice self-government as the Founders understood it.

And Americans are doing just that, struggling to meet the public policy challenge of biotechnology through the political branches of government. Federalism, in particular, is alive and well. While the U.S. Congress remains deadlocked over the issues of embryo research and cloning, the states have taken up the responsibility. Not surprisingly, they are all over the map in how they are addressing that responsibility. A number of states have forbidden or restricted research on embryos, among them South Dakota, North Dakota, Louisiana, Illinois, Michigan, Arkansas, Indiana, Iowa, and Virginia, while a few others have disallowed state funding for embryo research (Nebraska and Arizona). At the other end of the spectrum are states that both permit embryonic stem cell research and cloning for research purposes and take the further step of encouraging it through state funding. Those states are California, Connecticut, Massachusetts, and New Jersey. Following Prop 71 in California, other states may soon get into the business (including my state of Maryland).

Interestingly, both those states that forbid embryo research and those that endorse it, have acted to prohibit cloning if the intent is to produce children. To date, twelve states have banned research that would attempt to bring a cloned embryo to term, and two others, Arizona and Missouri, prohibit the use of state money for attempts to clone children. This agreement about the wrongfulness of cloning to produce children is perhaps not surprising. Despite the near universal support for such a ban, the U.S. Congress has not been able to enact it because of the division over embryonic stem cell

research and therapeutic cloning. It stands to reason that in those states where the majority will has been strong enough to decide the embryonic issue one way or the other, action against cloning to produce children followed as a matter of course. Along with the bans on using somatic cell nuclear transfer to produce children, states have adopted other non-controversial measures, for instance nine states have laws and policies that promote the donation and/or banking of umbilical cord blood, twenty-five states prohibit or restrict the purchase and sale of embryos and fetuses, and a number of states have proposed funding for adult stem cell research.

Most of the activity at the state level has been through ordinary legislation, although occasionally governors have acted by executive order (as in your neighboring state of Illinois). California, being the land of propositions and plebiscites, acted through a ballot initiative. Missouri and Florida have the distinction of pursuing the route of constitutional amendment. Amending the fundamental charter of government is a serious undertaking, maybe especially when done by the citizens at large. In speaking of amendments to the U.S. Constitution, James Madison insisted that “a constitutional road to the decision of the people ought to be marked out and kept open, for certain great and extraordinary occasions.” However, Madison also knew from his own experience that constitution writing and revision are, as he put it, “experiments . . . of too ticklish a nature to be unnecessarily multiplied.” He worried that recourse to the people in moments when public passions are agitated and running high would mean that “the *passions*, . . . not the *reason*, of the public, would sit in judgment.” “But,” Madison argued, “it is the reason of the public alone, that ought to control and regulate the government.”¹

¹ Federalist #49.

The U.S. Constitution lodges final authority not with the experts or the scientists, but with the people and the people's representatives. Our form of government demands attentive and informed citizens at all times, but the need for reasoned public debate and reflection increases when what is before the voters is not the selection of an individual of good character to represent them, but the actual measures and policies to be pursued. In the present case, the demands are especially great, since voters need scientific literacy in fields like embryology, genetics, and regenerative medicine, as well as powers of moral reasoning.

In the *Politics*, Aristotle defends the idea that the citizens should have a share in the highest offices: the offices of deliberation and judgment. The heart of his defense is an argument on behalf of the educated layman. There can be individuals who, while they “do not possess the art” (or science) in question, nonetheless “have some knowledge of its works.”² Moreover, Aristotle argues that, in some cases at least, the beneficiaries, rather than the experts, are the appropriate judges. In the realm of dining, for example, it is the diners themselves, and not the cook, whose verdict on the meal matters. Similarly, it is the citizens, not the scientists, who must determine what items to select from the biotech banquet, and what items to decline or even ban. This metaphor of a biotech banquet is perhaps not altogether reassuring, for most of us behave badly at smorgasbords. We overindulge, and the art of cooking is complicit in our overindulgence because it caters to our desires and tastes more often than it contributes to our health. For this reason, Socrates long ago suggested that cooking is not a true art, but a form of flattery and demagoguery. We know that the art of medicine, too (while it has a much stronger claim to being a true art), can nonetheless have a flattering side. In place of its

traditional end of health, medicine can substitute new and more expansive ends that appeal to us because they flatter our vanity. Think of cosmetic surgery which clearly serves the desire for bodily beauty rather than health. More serious, I think, is the subtle shift from a medical art that seeks the health of individuals to a medical art that seeks to abolish aging and conquer death.

So, the biotech banquet offers healthful items, delightful items, and perhaps also, some forbidden fruit. How are we to sort them out, and make the right choices, both individually and collectively? I would like to recommend to all Missourians the reports issued by the President's Council on Bioethics, particularly the 2004 report entitled *Monitoring Stem Cell Research* and the 2005 white paper entitled *Alternative Sources of Human Pluripotent Stem Cells*, both available through the Council's website at bioethics.gov. Reading them does not make one either a scientist or a bioethicist, but they do help each of us become an educated layman in Aristotle's sense, possessing the modest competence of the nonprofessional.

A large part of the Council's mission is to further public understanding and discussion of bioethical issues. To that end, the reports of the Council always include detailed and clear explanations of the science at issue and equally careful and clear presentations of the various moral arguments made on all sides. Members of the Council, despite their strongly held and opposing views, are all agreed on the importance of setting forth the full panoply of argument and counter-argument. Additionally, the reports seek to bring positions into dialectical conversation with one another.

One thing that the Council has been especially scrupulous about is the use of scientifically accurate and fair terminology. In defining key terms, the Council has sought

² *Politics*, Book 3, chapter 11.

language that is as descriptive and as neutral as possible, so that the moral issues are not prejudged. Partisans, of course, like to define issues and attach labels in ways that favor them, witness terms like “pro-choice” and “pro-life.” The debate there is about abortion, but both sides shy away from the word itself. “Pro-choice” sounds better than “pro-abortion” (since even if one favors legal abortion, abortion itself seems something ugly) and “pro-life” sounds better than “anti-abortion,” since being anti something sounds negative and restrictive. The debate over embryonic stem cell research is increasingly hampered by similarly partisan language and at times deceptive language.

I was sorry to observe that one of the most deceptive uses of language is right here in Missouri. According to the proposed constitutional amendment, “No person may clone or attempt to clone a human being.” The ballot summary says that a yes vote will “ban human cloning or attempted cloning.” Now, a standard scientific definition of human cloning would say something like the following: human cloning is “the asexual production of a new human organism that is, at all stages of development, genetically virtually identical to a currently existing or previously existing human being.” The procedure by which cloning is accomplished is called “somatic cell nuclear transfer” or SCNT. In SCNT, the nuclear material of a somatic cell is introduced into an enucleated egg and then stimulated to begin cell division. What results is a clone: an organism that has a genetic makeup nearly identical to the donor of the somatic cell. Cloning by means of SCNT has been achieved in a number of animal species, but not yet in human beings. Should it become doable, a cloned human embryo could be brought into being for two main purposes. The goal might be to implant the cloned embryo in a woman’s uterus with the hope of initiating a pregnancy and producing a live-born child. Or, the goal might be

to produce a cloned embryo for research purposes, such as the extraction of stem cells from the clone. Research involving embryonic stem cells would surely contribute to our basic scientific knowledge and it might lead to cures for disease. In both cloning to produce children and cloning for biomedical research, the initial procedure is the same. SCNT is a cloning technique.

The deception in the Missouri initiative is that it defines cloning as involving implantation. It pretends to ban human cloning in toto, whereas in point of fact, it only bans cloning that aims to produce a live-born child. I certainly agree that banning cloning to produce children is a good idea, but I don't approve of deceiving voters into thinking that embryonic stem cell research by means of SCNT is not cloning. It is cloning and we ought to have an honest discussion about whether human cloning for research purposes (should it become scientifically possible) is a good thing or not. The definitional sleight of hand in this ballot measure reminds me of a passage from Lewis Carroll where Humpty Dumpty and Alice discuss definitions:

“When I use a word,” Humpty Dumpty said in a rather scornful tone, “it means just what I choose it to mean—neither more nor less.”

“The question is,” said Alice, “whether you *can* make words mean so many different things.”

“The question is,” said Humpty Dumpty, “which is to be master—that's all.”

It may be possible to achieve political mastery by redefining words to suit one's factional self-interest, but it surely doesn't contribute to reasoned democratic discourse.

Also somewhat misleading in the proposed amendment is the reference to “research permitted under federal law” and research “subject to the requirements of federal law.” This implies that there is some federal law in place, when in fact there is none. Right now, any and all stem cell research is permitted. American scientists are free

to attempt human cloning, whether the aim is a live-born cloned child or the production of stem cell lines from cloned embryos. They are also free to use IVF embryos for the production of stem cell lines (and indeed all the existing stem cell lines have come from IVF embryos). Those IVF embryos can be the “leftovers” from assisted reproduction clinics or new embryos brought into being explicitly for research purposes. The only existing federal law in this area relates to federal funding. Not all research is eligible for federal funding. In 1996, the Dickey Amendment was passed by Congress. It has been reaffirmed annually since then by Congress. The Dickey Amendment forbids federal funding of embryo-destructive research. The research itself, however, is unrestricted (except in those states that have passed restrictive laws).

Like the Dickey Amendment, the president’s policy relates to funding only. Within the limitations on federal funding set by Congress in the Dickey Amendment, what the Bush policy did in 2001 was make federal funds available for embryonic stem cell research for the first time. The President made funds available by arguing that since the destruction of the embryos had taken place in the past under private funding that those stem cell lines already in existence at the time of the promulgation of the policy would now be eligible for federal funding, since research on those already existing lines did not involve the government in funding embryo-destructive research, which was forbidden by the terms of the Dickey Amendment. However, in order not to provide an incentive to further embryo-destructive research, which would violate the intent of the Dickey Amendment, no funding would be available for research on stem cell lines of later date. While the policy has been criticized from all sides, there is a discernable “ethical-legal logic” underlying it. As expressed in one of the Council reports, “it seeks

those benefits of embryonic stem cell research that might be attainable without encouraging or contributing to any future destruction of human embryos.”³

So much by way of background about terminology and federal law. One other item that caught my attention about the Missouri initiative was the Note that precedes the text of the proposed amendment on the official website of Missouri’s Secretary of State. It alerts voters that the proposed amendment may alter or abrogate existing sections of the Missouri State Constitution. The sections listed as potentially compromised include Article I, section 2 of the Missouri Bill of Rights which restates the truths of the Declaration of Independence, and Article I, section 10 of the Missouri Bill of Rights guaranteeing “That no person shall be deprived of life, liberty or property without due process of law.” Any amendment that might alter such fundamental provisions of republican government ought to be weighed very carefully.

Since whatever Missouri does will have to be compatible with the U.S. Constitution and the U.S. Code, I want to turn now to the question of bioethics and the Constitution. There are four passages that might have some bearing on the ethics of embryonic stem cell research: the Preamble, especially the aim to “secure the Blessings of Liberty to ourselves and our Posterity”; Article I, section 8, granting Congress the power “to promote the Progress of Science and useful Arts”; Article I, section 9, prohibiting titles of nobility; and the Thirteenth Amendment, forbidding slavery and involuntary servitude.

Let’s start with the noble purposes of the Preamble. It’s clear that the drafters of the Constitution understood themselves as founders; they acted not simply for themselves, but for their posterity. But what does it mean to secure the blessings of

³ *Monitoring Stem Cell Research*, p. 28.

liberty for later generations? There is a fascinating exchange between Thomas Jefferson and James Madison on the topic of intergenerational rights and obligations that may help us think about this question and its contemporary relevance.

In 1789, Jefferson wrote a letter to Madison, raising the theoretical question “whether one generation of men has a right to bind another.” To answer the question, Jefferson assumes that generations are, like individuals, by nature free and equal. He asserts that “each generation is as independent of the one preceding, as that was of all which had gone before.” To remain within its proper bounds, therefore, each generation must rule itself, but not its posterity. Future generations must be left in a position freely to shape their own destinies. According to Jefferson, this means that individuals and nations cannot contract debts of more than 19 years duration (19 years being the approximate span of a generation). Even more significantly, it means as well that the obligation of laws and constitutions expires after 19 years. Madison’s reply to Jefferson is interesting. In very respectful and friendly fashion, Madison says he doubts whether Jefferson’s idea “can be received in the extent to which [his] reasonings carry it.” In the matter of debts for instance, Madison argues:

Debts may be incurred with a direct view to the interest of the unborn as well as of the living: Such are debts for repelling a conquest, the evils of which descend through many generations. Debts may even be incurred principally for the benefit of posterity: Such perhaps is the debt incurred by the United States. In these instances the debts might not be dischargeable within the term of 19 years.

There seems then to be some foundation in the nature of things; in the relation which one generation bears to another, for the *descent* of obligations from one to another. Equity may require it. Mutual good may be promoted by it.

In place of Jefferson’s view of generational independence, Madison argues for generational linkage. However, despite his reservations about Jefferson’s idea, Madison concludes with praise for it and a wish that it might be “always kept in view as a salutary

restraint on living generations from unjust and unnecessary burdens on their successors.” Like Jefferson, Madison wants to ensure that the entailments of the present on the future remain within reasonable bounds.

The biotech revolution raises the stakes of the debate between Jefferson and Madison. The question of the binding of generations is no longer just about financial impositions like the national debt or even the duration and obligation of law. At stake now are such things as control of the human genome. Decisions made by one generation (say, to attempt germline manipulation or to pursue human cloning) might transform what it means to be human for the next generation. Think for a moment of the bizarre and baffling situation to which the practice of in vitro fertilization has led us. Along with the 170,000 babies born through assisted reproduction, the embryos who are the biological brothers and sisters of the IVF successes are stocked up in deep freezes around the country. There are said to be some 400,000 of them and we call them “surplus” or “excess” or “spare” embryos. We have started to regard some embryos not as members of the next generation, but instead as “spares” who might as well be put to use as spare parts. And we do this even knowing that each of these embryos was brought into being in the desperate hope for biological offspring. The Preamble states that the Constitution was established to secure “the blessings of liberty to ourselves and our posterity.” It may be that to secure the blessings of liberty for our posterity we must secure ourselves against certain abuses of liberty, such as sacrificing one portion of posterity for another portion.

In saying this, I don’t mean to suggest that assisted reproduction should be outlawed, only that there are more and less ethical ways of conducting it. It could be done

without creating so-called “excess” embryos, although it would be more expensive and less efficient.

The next clause of the Constitution that offers material for bioethical speculation is what is known as the patent clause. Article I, section 8 grants Congress the power “to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” Of the 18 paragraphs in section 8, each one specifying a particular power of Congress, this one is unique. All of the other paragraphs simply state what power is being granted—for instance, Congress shall have power “to borrow money,” “to coin money,” “to declare War,” and “to establish Post Offices and post Roads.” No explanation is offered as to why Congress is granted those particular powers. In the case of the patent clause, however, there is a preamble of sorts, spelling out the reason why Congress is vested with the power to grant copyrights to authors and patents to inventors. The reason is “to promote the Progress of Science and useful Arts.”

We might wonder why it was necessary to justify patents, but not post offices. Remember that patents began in England as monopoly privileges granted by the Crown to merchants who garnered royal favor. Sort of like how the Olympic Committee proceeds today, naming some soda-pop or other as the official drink of the Olympics. It’s not quite the British East India Company, but the idea of a monopolistic concession is the same. I suspect that the drafters of the Constitution wanted to make clear that their reason for securing exclusive rights to authors and inventors was for the limited purpose of promoting scientific progress and not in order to provide a blanket congressional authorization to set up commercial monopolies or allocate economic privileges, as the

Crown had routinely done in eras past. Indeed, the Constitutional Convention rejected wording that would have granted Congress the power to charter corporations.

So, if the aim was the encouragement of science, we might wonder why they didn't just leave it at saying "the Congress shall have power to promote the Progress of Science and useful Arts." That wording, too, would have made this clause parallel in structure to the other grants of power. Instead, the Founders specified the sole constitutional means by which the promotion of science could be pursued. Again, what could have been a very far-ranging grant of power became instead a fairly narrow one. Congress's role as a promoter of scientific progress was restricted to this one mode of encouragement. The Constitutional Convention rejected language that would have allowed Congress to found a national university or to award prizes for scientific discoveries. Of course, in the last century, Congress has, without constitutional warrant it seems, taken to promoting science in other ways, particularly taxpayer funding.

Although limited in the ways I have outlined, the patent clause is not inconsiderable. As Abraham Lincoln so vividly described in his "Lecture on Discoveries and Inventions," what the patent clause does is add "the fuel of *interest* to the *fire* of genius." That is a pretty combustible combination—one that has certainly furthered the Promethean achievements of modern science and technology. The underlying assumptions of the patent provision are that scientific advance will redound to the public good and that the public good can be achieved by rewarding private enterprise. James Madison discusses the patent clause in Federalist 43, where he declares that in this matter of extending copyrights and patents to authors and inventors, "The public good fully coincides ... with the claims of individuals."

Abraham Lincoln, however, was notably less sanguine about the harmony of science and society. His “Lecture on Discoveries and Inventions” shows him to be worried that the fire of genius, particularly when fueled by self-interest, could get out of hand. (We have seen some of the ways in which scientific ambition can get out of hand in the recent scandal involving both South Korean and American stem cell researchers.) I don’t mean to suggest that Lincoln was hostile to technological advance, for he certainly was not. Indeed, Lincoln is the only American president to have obtained a patent on an invention. He was, however, aware that not every invention or discovery is a boon for mankind. Lincoln’s reservations about science are grounded ultimately in his recognition of the morally dubious character of the human quest for mastery.

The final section of Lincoln’s “Lecture on Discoveries and Inventions” deals with specific modern inventions. The three he singles out are the invention of printing, the discovery of America, and the idea of patent laws. These three have vastly accelerated the overall rate of discovery and invention. According to Lincoln, printing in particular expands the field for invention because it awakens in men the thought of “rising to equality.” Printing is the emancipation proclamation of the mind. Lincoln suggests that, in breaking the shackles of ignorance and low expectations, printing not only transforms minds but conditions as well. Printing is an invention that advances political liberty.

In the midst of this appreciative account of printing, Lincoln stops suddenly and injects an attention-arresting, one-sentence digression. Here’s the sentence:

Though not apposite to my present purpose, it is but justice to the fruitfulness of that period, to mention two other important events—the Lutheran Reformation in 1517, and, still earlier, the invention of negroes, or, of the present mode of using them, in 1434.

The date Lincoln gives for what he calls “the invention of negroes” is the date when Portuguese explorers first rounded the treacherous Cape Bojador on the western coast of Africa, a feat of navigational expertise and daring that led almost immediately to the start of the African slave trade in 1441. Clearly, not all discoveries advance the cause of civilization. The discovery of America in 1492 opened new fields for slavery, and greatly increased the profitability of the original “invention of negroes.” Eli Whitney’s patent on the cotton gin similarly enhanced the value of “the invention of negroes” (to such an extent that there were those who asserted that “by the invention of the cotton-gin it became a necessity in this country that slavery should be perpetual”⁴).

The five modern events mentioned by Lincoln (the three he initially listed and the two he added along the way) culminated in the American Civil War, which the nation was just on the cusp of as Lincoln delivered this speech in February of 1859. The two seminal inventions of modernity presaged the conflict: the invention of printing in 1436 pointed man towards freedom; the invention of negroes in 1434 pointed him towards slavery. The discovery of America in 1492 provided the ground on which both forces—freedom and slavery—eventually converged. The Reformation in 1517 added religious support for the cause of liberty. Patent law in 1624, like the discovery of America, is double-edged, capable of working mischief as well as marvels. I already mentioned the patenting of the cotton gin. Even more significant was the patent granted by the British Crown to the Royal African Company in 1672, giving the company exclusive rights to the slave trade—in essence, a patent on negroes, or on “the present mode of using them.” We might with justice say that Lincoln’s entire public career was devoted to disinventing the negro, or disinventing the present mode of using him. He sought to move the negro

⁴ Preston Brooks, quoted by Lincoln in Lincoln/Douglas Debates, 320.

from his status as an invention to his rightful status as a human being, entitled to his natural rights of life and liberty.

It turns out that our contemporary dilemmas and debates are not entirely novel. Lincoln anticipates our concerns about the patentability of human life and the uneasiness, among some of us at least, occasioned by the discovery of new modes of using human beings—this time around, though, it is not Africans but embryos. In 1980, the Supreme Court ruled that living organisms are patentable. At issue in that ruling were laboratory-engineered, oil-eating bacteria. Since then, genetically altered mammals have become patentable. Although the Patent Board in *Ex Parte Allen* (1987) declared that human beings were off-limits because of the Thirteenth Amendment (forbidding slavery), it would certainly be desirable for Congress to act to specify what is not patentable and to codify the boundaries of ownership. The Bioethics Council has unanimously recommended that Congress “prohibit the issuing of patents on claims directed to or encompassing human embryos or fetuses at any stage of development.”⁵

Nonetheless, in the end, patentability (like federal funding) is a side issue, since failure to secure a patent does not mean one can’t continue research or pursue commercial development. Remember, slavery continued unabated after the Royal African Company’s patent lapsed. The real issue is whether certain types of research and certain modes of using human beings will be allowed.

The Constitution does, I would argue, set certain ultimate limits to our experimentation upon ourselves. The Thirteenth Amendment bans slavery and involuntary servitude, and Article 1, section 9 contains an absolute prohibition of titles of nobility. Alexander Hamilton said in *Federalist #84* that the prohibition of titles of

nobility “may truly be denominated the cornerstone of republican government.” Both provisions point to the natural law background of the Constitution and remind us of the self-evident truths of the Declaration of Independence. The principle of the natural equality of the human kind condemns any and all caste systems. It is impermissible to set up one class or category of human beings to rule over another class or category on the basis of their power and privilege.

The American Revolution set itself against artificial aristocracy—what Jefferson called “the tinsel aristocracy” of noble birth and wealth. Today we are forced to wonder whether mastery and slavery might not assume new incarnations as science extends its reach. A certain subset of the unborn could be transformed into a class of beings who exist as animate instruments of our scientific advancement. We can now create new life not to succeed old life through the continuum of the generations, but rather to serve and sustain old life; the new life is not meant to outlive us but is designed to allow us to live longer and more comfortably. What we are considering is the farming and harvesting of human embryos to feed our needs—the needs of the sick and dying. To describe this situation as slavery or involuntary servitude depends, of course, on granting that an embryo is a human being, and, as such, encompassed within the “all men are created equal” principle of the Declaration.

We have had contentious debates before in our history about precisely who is included within the Declaration’s broad language. Chief Justice Roger Taney, in his opinion in the *Dred Scott* case, claimed that blacks were not included, for the reason that they were, in his words, “regarded as beings of an inferior order . . . and so far inferior, that they had no rights which the white man was bound to respect.” The question for us

⁵ *Reproduction and Responsibility*, p. 226.

is: Does the embryo—either cloned or conceived—have any rights that those of us who are “of woman born” must respect? I think yes, but just as in Lincoln’s day, there are those with more restrictive definitions of humanity who look upon such an expansion of the human family as absurd.

Yet, as Lincoln pointed out, the very slaveholders who sought to deny the human standing of their slaves themselves had trouble believing that slaves had no status other than as property. Their own behavior often gave the lie to their bold pronouncements of exclusion and black inferiority. Among other things, there was the phenomenon of free blacks, many of them free by virtue of the guilty conscience of slaveholders. In many Southern states, moreover, there were laws that upheld the status of slaves as persons, and as such eligible for protection against crimes committed against them. Then there was the social fact that slaveholders disdained the society of slave-dealers, though not the society of other tradesmen. And finally, there were all those mulattos on the plantations. The enslaved sons and daughters of the masters were powerful testimony to the species identity of whites and blacks.

We can see some rough parallels today. We have “free embryos,” secure in their mothers’ wombs, recognized already as beings in their own right, having their sonogram pictures taken and sent out by e-mail to friends and family under the heading “Baby’s First Picture.” We have laws on the books, both state and federal, protecting pre-natal life against crimes of assault and murder that are committed against persons. [Scott Peterson] The repugnance against the slave-dealers’ trade in human flesh is felt today against the abortionists’ trade and the underground dealers in human organs and babies. Finally, every embryo used for purposes of research is someone’s blood relative. It is certainly the

case that our discomfort with embryo research grows as the embryo grows. However, there is also a time during which the new life is so tiny, so seemingly negligible (those blastocysts are brainless, after all), and so hidden from view (stacked up in those petri dishes in those freezers), that it requires a real leap of the imagination to acknowledge human identity. Would it really be wrong to allow a window of 10 to 14 days during which time experimentation is permitted upon these beings of seemingly indeterminate or intermediate status?

In dwelling on the comparison to the debate over slavery, I want mainly to remind us that many Americans were wrong once before to constrict membership in the human family on the basis of their own sentiments and self-interest. That doesn't prove we would be wrong this time around, especially since we have in view the noble purpose of healing the sick, but I think it does suggest the need for extreme caution, especially since our use of the embryo is always fatal to it. Our experimentation is lethal experimentation. Lest I unintentionally give offense, I want to acknowledge the limits of the analogy between slavery and embryo research. There is no comparison at all in terms of human suffering. I do not want to be misunderstood on this point. Slaves, as fully thinking and feeling beings, suffered intensely. By contrast, early embryos are not pained by the use to which they are put. So if embryo research is wrong, its wrongfulness does not hinge on pain and suffering. In fact, if pain and suffering are our only moral touchstones then the argument is all on the side of those with terrible diseases who look to embryo research for hope and cure. Pain and suffering, however, are not the only standard by which we measure violations of human dignity. One can wrong even those who are unaware of the

wrong being done them. The wrong in embryo-destroying research is in treating nascent human life simply as a thing, an animate possession.

Now of course the claim of those who want to use early embryos for the relief of human suffering is that the early embryo, or more precisely, the blastocyst, is nothing more than a bundle of cells, and very few cells at that, lacking recognizable human form and lacking human capacities of any kind. What respect could it possibly be entitled to? While I understand the objection, it also seems to me that the case for the embryo—the case for the embryo’s human standing—has never been easier to make, and that it is science itself, the science of embryology, that best makes the case. It is undeniable that each and every post-natal human being has passed through the identical stages of embryonic and fetal development. We were all blastocysts once. That clump of cells is us at that stage of our life. The embryo is not just potentially a member of the human kind. It is human. From conception (or to use more technical language, from the moment of syngamy), the human zygote has 46 chromosomes and can be distinguished from embryos of other species. It is recognizably one of us—recognizable not to the naked eye, but to the scientifically trained eye. Moreover, the embryo is not like other cells or tissues. In the words of Stanford biologist William Hurlbut, “it possesses an inherent organismal unity and potency that such other cells lack.”⁶ Because of this “unified organismal principle of growth,” nothing external is added to its biological essence over time. Our unique being unfolds continuously from within. Along the way we develop and manifest various capacities, sensory and cognitive, but there isn’t one of those capacities whose acquisition suddenly makes us human. There are many phases and stages of a human life, but the being — the unique human being — is there from beginning to end,

from conception to death. Of course, certain externals need to be present for this human life-in-process to continue its self-directed growth, but that is true of every phase of human life. We are self-directed, but not self-sufficient. Knowledge of our earliest beginnings, and of the dynamic developmental process of the human organism as it matures, can awaken a sense of awe and respect. Knowledge of our origins does not destroy wonder; it deepens it.

In the last letter written by Thomas Jefferson, he expressed the conviction that it is “the unbounded exercise of reason” and “the general spread of the light of science” that will open men’s eyes to the truths of the Declaration. I hope he is right. I hope that the knowledge supplied by the science of embryology will lead us to question the moral legitimacy of embryo-destroying research. If we keep in mind what Madison called “the interests of the unborn,” then perhaps we will realize that we are not at liberty to divest our posterity of their right to life, liberty, and the pursuit of happiness.

⁶ *Human Cloning and Human Dignity*, p. 310.