RELIGION, GENETICS, AND THE EVOLVING AMERICAN EXPERIMENT WITH BIOETHICS

by

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Bioethics is an experiment in culture. As controversial new biological and medical technologies arise, the "public," with all its institutional and ideological diversity in tow, responds – often in a cacophony of conflicting policy prescriptions. The resulting chaos thus requires a special class of professionals – the bioethicists – to determine the "appropriate" position, i.e. which research and practices should be allowed, funded and released to the public, and which should be condemned or even criminalized. In theory, the appropriate policies are determined and enacted, the appropriate research and practices go forward, and the public accepts and applauds the wisdom of biomedical elites. The reality is far messier. Over the past thirty years, bioethics – a field established to resolve conflict – has itself become a source of conflict and dispute. As such, this paper focuses on religion and genetics to chart the evolution of the American experiment with bioethics. The history reveals two primary trends: the "rationalization" of bioethics in the 1970s and 80s; and the corresponding conservative "Christian" backlash beginning in the 1990s. Additionally, the focus on controversial genetic research highlights the growing politicization of bioethics and Presidential bioethical committees as well as the use of bioethical issues in political elections. Finally, the first decade of the current millennium provides yet another twist: the growing importance of non-traditional or "radical" bioethics and more "liberal" Christian positions.

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Bioethics, Genetics, Religion, Christianity, Politics, Genetic Engineering

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Over the past thirty years, bioethics – a field established to resolve conflict – has itself become a source of conflict and dispute. Previous to the 1970s, medical ethics remained indebted to Christian moral traditions. However, the lack of public consensus on genetic engineering, abortion, euthanasia and other challenging issues led to the formalization and "rationalization" of bioethics. Part of this response was the establishment of programs of scientific outreach designed to minimize public criticism of genetic engineering and address issues in science and religion. However, a counter-response has been the re-assertion of "Christian" bioethics. For the past three decades, organized religious communities attempted to play a more overt role in policy: a letter from three religious leaders to President Carter in 1980 led to the President's Commission's study of genetic engineering; twenty years later, many conservative religious leaders opposed genetic patenting, cloning, and stem cell research on moral grounds. By the 1990s, many religious conservatives, arguing that professional bioethicists were inherently secular and unfairly biased towards the research enterprise, organized a counter movement of explicitly "Christian" bioethics. Organizations such as the Center for Bioethics and Human Dignity (CBHD) and the Ethics and Public Policy Center (EPPC) represent this Christian "backlash" against "secular" bioethics."

This paper charts the evolution of the American experiment with bioethics, with a focus on religion and genetics. The history reveals two primary trends: the "rationalization" of bioethics in the 1970s and 80s; and the corresponding conservative "Christian" backlash beginning in the 1990s. Additionally, the focus on controversial genetic research highlights the growing politicization of bioethics and Presidential bioethical committees as well as the use of bioethical issues in political elections. Finally, the first decade of the current millennium provides yet another twist: the growing importance of non-traditional or "radical" bioethics and more "liberal" Christian positions.

1. RELIGION AND THE RATIONALIZATION OF BIOETHICS

The history of medical ethics dates to antiquity; the Hippocratic maxim to "benefit and do no harm" remains at the core of modern medical ethics.[1] The American Medical Association (AMA) established a code of ethics in 1848 to regulate medical practice; one hundred years later, revelations about Nazi medical experimentation led to the Nuremberg Code requiring "informed consent" from human subjects involved in research. The introduction of dialysis machines in the 1960s, and the resulting "God committees" formed to decide who would receive the life-saving treatments, strained the medical community's ethical consensus. At the same time, a cultural emphasis on individual rights merged with growing concerns over biomedicine. The 1968 Mondale hearings, one of the first congressional hearings to address advances like genetic engineering and organ transplantation, demonstrated the tension between the platforms of scientific faith and scientific critique.

Designed to stimulate discussion of biomedical ethics, the Mondale hearings assembled a diverse group of scientists, theologians, and academics to debate potential consequences and regulation. Among the participants was the Rev. Kenneth Vaux, who asked, "What will it profit us if we gain the whole world and forfeit our soul?" – offering what I will call the "holistic" perspective.[2] I use the term "holistic" here for two reasons: one, because of the question's emphasis on humanity rather than the individual; and two, because such questions later merged with those presuming an "organic" or "living" globe – essentially a "holistic" spiritual ecology. In response, scientists vehemently defended their territory from the interlopers. Christian Barnard, the heart-transplant specialist, argued that the public was unqualified to make research decisions; other scientists drew parallels to Lysenkoism and the trial of Galileo. Their reaction upset Senator Walter Mondale (D-MN), who stated, "I was frankly taken aback by the spirited opposition expressed by several men in the health sciences. Considering that I had merely proposed the establishment of a presidential study commission, it was difficult to understand the opposition." He continued sarcastically, "some did condescend to admit that they would appreciate continued – or increased – financial support from the government for their endeavors. But please don't distract us with any questions."[3]

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1 Hippocrates, 'Epidemics I' in *Hippocrates with an English Translation, vol. 1*, trans. W. H. S. Jones, 1959, Cambridge University Press, Cambridge, p. 165.

2 The Mondale Hearings are addressed in Jonsen, Albert R. 1998, *The Birth of Bioethics*, Oxford University Press, Oxford. Quote on 92.

3 *Ibid*, 93.

While the hearings did not result in new regulations or oversight committees, one can discern the framework for future debates over genetic engineering – debates in which scientists, playing to an American "civil religion" emphasizing scientific progress, spoke about social advance, anticipated medical benefits, and maintaining research autonomy and funding. At the same time, Vaux's more "holistic" perspective is indicative of the approach taken later by many religious and environmental groups. Sociologist John Evans writes about the significance of "framing" in bioethics.[4] For example, abortion, a central issue, can be framed as a "Right to Life" issue or as an "Individual Rights" issue, depending on the intended effect and audience. Such "frames" are critical to manipulate public opinion towards new technologies. For opponents of genetic engineering, the "commodification of life," "biohazards," and the "loss of human dignity" are legitimate policy concerns, as they consistently frame discussions in terms of long-term impacts, whether on the environment or on the "soul" of man. And while the public remained largely unaware of the emerging genetic issues, professional bioethics, a merger of theological and philosophical traditions, blossomed as other advances challenged the moral status of biomedical research.[5]

The development of bioethics as a public policy discipline resulted from a number of historical trends, including advances in biomedicine and questions of resource allocation and justice. More specifically, the 1970s witnessed the *Roe v Wade* (1973) decision, organ transplants and issues of resource allocation, questions regarding PKU genetic screening, the Karen Ann Quinlan euthanasia case, and fetal research (*in vitro* fertilization).[6] The wide assortment of issues attracted attention from diverse groups. Many religious communities felt genetic screening would increase abortions of "defective" babies while the *Roe v. Wade* (1973) decision and questions regarding fetal research ensured the active participation of women's groups. Revelations of improper medical conduct and a lack of consent in the Tuskegee syphilis study heightened public awareness about regulation and control of research, as many questioned whether researchers could be trusted with ethical responsibilities. These controversies revived the study of ethics by forcing an academic, philosophic tradition out of the ivory tower, and theo-

[4] Evans, John. 1999, "The Uneven Playing Field of the Dialogue on Patenting," in *Perspectives on Genetic Patenting: Religion, Science and Industry in Dialogue*, ed. Audrey Chapman, AAAS publishing, Washington, DC. See pages 57-74.

[5] Albert Jonsen observes that early bioethicists, such as Joseph Fletcher, Paul Ramsey or Richard McCormick, often came from theological traditions, although many resigned their ordinations or found employment at secular institutions during the "professionalization" phase of the field. See "The Theologians: Rediscovering the Tradition," in Jonsen, *Birth of Bioethics*, 34-64.

[6] Stevens, M.L. Tina. 2000, *Bioethics in America: Origins and Cultural Politics,* Johns Hopkins University Press, Baltimore. Especially pages 8-45.

logians from the seminary, to confront issues that demanded resolution.[7] Historian Tina Stevens, who underscores the fears over genetic engineering and eugenics, links the bioethics movement to the "responsible science movement" of the 1950s and 1960s, particularly the control over atomic weapons. As such, the new field "assisted in transforming alarm over exotic technologies into a situation in which ethical experts manage problems."[8] She continues, "even while the stress over biotechnology was erupting, the process of disrupting that distress also had begun," so that "the role of bioethics from the 1960s to the 1970s may be seen as one in the transition from critique to management."[9]

By the early 1970s, bioethics was a recognized field; the first *Encyclopedia of Bioethics* appeared in 1972. Institutions soon followed. Bioethicist Albert Jonsen remembers the 1960s as a time of conferences and the 1970s as a time of centers. Christians, particularly Catholics, were influential in this early stage: Daniel Callahan helped establish the Hastings Center in 1969; André Hellegers was equally instrumental in the founding of the Kennedy Institute in 1971. These two institutions, perhaps the premier independent centers for bioethics, mixed theologians, philosophers, lawyers, and sociologists in the search for a viable bioethical platform. At the same time, Pope John XXIII chartered the Medical-Moral Research and Education Center, laying the groundwork for the National Catholic Bioethics Center.[10] Yet the participation of Christians complicated the new field, as bioethics, with its legal and political implications, is a creature of the public sphere.

The search for universal principles inevitably marginalized sectarian religious voices. The goal became a "Secular framework of thought, oriented toward forging universal principles of a 'common morality,' that not only eschewed but rose above the particularism of cultural, ethical, and religious differences."[11] This framework, formalized in the "principlism" of *The Belmont Report* (1978), recommended justice, autonomy, and beneficence as appropriate guidelines. However, the field vacillated between deontological ethics (lying is always wrong) and consequentialist ethics (lying maybe appropriate in certain circumstances). Neither approach, according to bioethicist Daniel Callahan, is completely satisfactory:

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[7] Toulmin, Stephen. 1982, "How Medicine Saved the Life of Ethics," *Perspectives in Biology and Medicine*, vol. 25, pp. 736-50.

[8] Stevens, *Bioethics in America,* quote on xiii.

[9] *Ibid*., 149, 151.

[10] From "Twenty-five Years of Service," available at http://www.ncbcenter.org/access_history.html. Accessed Jan. 15, 2003.

[11] Messikomer, Carla, Fox, Renee, and Swazey, Judith. 2001, "The Presence and Influence of Religion in American Bioethics," *Perspectives in Biology and Medicine*, vol.44, pp. 484-508. Quote on 492.

> *"Both have problems: If one tries to hold on to a universalist, coolly rational mode of analysis, floating above culture and class, no room is left for the play of passion, context and ideology. Lofty abstractions win the day. If, in contrast, one tries to recognize situation and circumstance, the result may be subservience to the interests of class and tribe, to our crowd and the passions of the moment."*[12]

In addition, the new field now required a "publicly-accessible" language that stripped religious voices of their authenticity.

Sociologist John Evans recently examined this dynamic in the debates over human genetic engineering. An expression of Weberian "rationalization," the "rationalization" of bioethics led to a "thinning" of debate, as "holistic" or "heavy" questions were essentially ignored in favor of solvable, mundane problems.[13] Religious and environmental opponents of genetic engineering, forced to translate their long-term spiritual concerns into secular, policy-oriented language, were left speaking a "Moral Esperanto" incapable of influencing the debate.[14] As Barbara Katz Rothman summarizes, "They start off talking about playing God and end up talking about extra filters in laboratory safety hoods."[15] Indeed, many in the bioethics profession assume a "natural progression of human reason, a progressive enlightenment away from emotional, often religiously based arguments toward more 'rational,' calculating, scientific, 'neutral' arguments."[16] Thus bioethicists tend to agree with the scientific community, becoming translators, apologists, and sometimes enablers of scientific "progress."[17] From this perspective, the scientific community "won:" the debates installed secular bioethicists as the appropriate voice in science policy discussions, arguably guaranteeing verdicts amenable to the research community.

Religious bioethicists highlight numerous problems with this universal, and secular, approach. Callahan argues it leaves bioethics too dependent on law as the "working source of morality" given that legal approaches can only tell us what is "forbidden or acceptable," not what is "commendable or right."[18] With religion relegated to the private sphere, he notes the irony of a

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[12] Callahan, Daniel. 1997, "Bioethics and the Culture Wars," vol. 264, pp. 23-24. Quote on 24.

[13] Evans, John H. 2002, *Playing God? Human Genetic Engineering and the Rationalization of Public Bioethical Discourse*, University of Chicago Press, Chicago. I should note that Evans uses the term "substantive rationality" to refer to questions I have called "holistic" or "heavy."

[14] The term "Moral Esperanto" comes from John Evans, quoted in Rothman, Barbara Katz. 1998, *The Book of Life: A Personal and Ethical Guide to Race, Normalcy, and the Implications of the Human Genome* Project, Beacon Press, Boston. Quote on 37.

[15] Rothman, *The Book of Life*, 37.

[16] Evans, *Playing God?*, 24.

[17] Rothman, *The Book of Life*, 37.

[18] Callahan, Daniel. 1990, "Religion and the Secularization of Bioethics," *The Hastings Center Report*, vol. 20, pp. s2-s4. Quote on s4.

pluralistic approach, "which becomes a form of oppression if, in its very name, we are told to shut up in public about our private lives and beliefs."[19] So religious voices become a "curiosity" in the public arena and muted, or suspect, within academe.[20] Universal approaches, according to Allen Verhey, reduce human experience to the minimum ethical standards that can be defended rationally but ignore the "minimal character of such standards."[21] This is problematic for many believers because issues of life, death, and suffering are infused with religious meaning and "Playing God" is a serious critique. Thus it is not surprising that genetic engineering, among many other issues, became so controversial.

2. RELIGION, GENETICS AND THE GROWTH OF "PROFESSIONAL" BIOETHICS

In 1977, Science writer Nicholas Wade observed, "one sector of the public that has been strangely loath to say its piece on gene splicing is the religious community."[22] Indeed, the religious response to genetic engineering grew slowly in the 1970s, becoming politically active only in the late 1970s. For example, in 1972, a coalition of Presbyterians, Methodists and Episcopalians published a study of the "new" genetics (recommending caution), while numerous debates occurred within the nascent bioethical community.[23] The World Council of Churches held its first conference on genetics in 1973; in 1979, its conference on "Faith, Science and the Future," held at M.I.T., assembled 313 delegates from 59 countries representing 40 Christian churches and a "scattering of Jews, Muslims and Buddhists."[24] By 1977 articles on genetic engineering had appeared in a variety of religious publications, including *Christian Century*, *Christianity Today*, *New Catholic World*, *U.S. Catholic*, *America*, and *Commonweal*.

Religious opponents of rDNA research exploited the division within the scientific community and relied on an essential theme – materialism – to link a diverse set of scientific practices and ethical questions. A *Christian Century* article praised "Science for the People" – a group of young activist

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[19] *Ibid*.

[20] Lammers, Stephen J. 1996, "The Marginalization of Religious Voices in Bioethics," in *Religion and Medical Ethics: Looking Backward, Looking Forward*, ed. Allen Verhey, Wm. B. Eerdmans Publishing, Michigan.

[21] Verhey, Allen. 1990, "Talking of God – But with Whom?" *The Hastings Center Report*, vol. 20, pp. 21-s24. Quote on s24.

[22] Wade, *Ultimate Experiment*, 124-43.

[23] The coalition included the National Presbyterian Center, the Board of Christian Social Concerns of the United Methodist Church, and the Episcopal Cathedral of the Diocese of Washington. See Hamilton, Michael O. 1972, *The New Genetics and the Future of Man*, Eerdmans Publishing Company, Michigan.

[24] Regarding the 1973 conference, see Chapman, *Unprecedented Choices*, 32. For the 1979 conference, see Cort, John C. 1979, "Science, Faith & Future," *Commonweal*, vol. 106, pp. 517-19.

scientists at Harvard and M.I.T. – for protests that were "forthright, though not disruptive, in calling the scientific establishment to account."[25] Indeed, "Science for the People," along with Chargaff, appear regularly as the appropriate spokespeople for science in the religious literature of the period. The evangelical publication *Christian Century* was especially careful to exploit the prestige of scientists, as Paul Schimmel, professor of biochemistry and biophysics at M.I.T., Roger C. Sider, professor of psychiatry at the University of Rochester Medical Center, and Craig Ellison, professor of psychology at Simpson College, all published articles condemning rDNA research.[26] These articles stressed the need for evangelical action and linked genetic engineering to a host of other bioethical issues, including euthanasia, abortion, and *in vitro* fertilization.

In the debates of the 1970s, religious conservatives created an enduring stereotype of the biological sciences as being based on rampant reductionism, secularism and individualism. In one article, Roger Sider lauded biology as the new "queen of the sciences," noting that the present upheavals were "important to evangelicals" because "science is the intellectual temple of modern culture, and since biology is its chief god, a revolution in biology is bound to permeate our entire society."[27] Paul Schimmel agreed, writing, "there is no question that genetic engineering has spiritual ramifications," adding that recombinant DNA techniques shift "thinking from the metaphysical to the physical," causing us to see "humans and life itself as so much machinery." Schimmel worried about man's attempt to "play God" and warned of artificial genetic species upsetting "the balance of nature in some unforeseen way."[28] Craig Ellison tied *in vitro* fertilization and genetic engineering to concerns over the family and warned, "when progress is absolutized, people tend to justify unethical means to accomplish the ends."[29] Another article connected sociobiology, genetic determinism, and abortion to a Hitler-esque "Gene Cult," forcefully demanding that evangelicals "have a responsibility to tear down strongholds [the secularism of sociobiology]

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[25] Nelson, J. 1976, "The Advancement of Human Science," *Christian Century*, vol. 93, pp. 418. "Science for the People," founded in 1969, was a response to Arthur Jensen's article that blacks were genetically inferior to whites. Throughout the 1970s, the group warned about potential misuses of genetics, often being angrily dismissed by the scientific community. Jon Beckwith, a founding member, describes this backlash in Beckwith, Jon. 2002, *Making Genes, Making Waves: A Social Activist in Science*, Harvard University Press, Cambridge, MA. See especially pp. 53-57.

[26] Shimmel, Paul. 1978, "Genetic Engineering: Blessing or Curse?" *Christianity Today*, vol. 22, pp. 1085-86; Sider, Roger. 1978, "The New Biology: In Search of a Soul," *Christianity Today*, vol. 22, pp. 580-85; and Ellison, Craig. 1979, "Engineering Humans: Who is to do what to whom," *Christianity Today*, vol. 23, pp. 459-62.

[27] Sider, "The New Biology," 580, 584.

[28] Schimmel, "Genetic Engineering," 1086 and 1085 respectively.

[29] Ellison, "Engineering Humans," 461.

raised against the knowledge of God."[30] A series of later articles and editorials combined all the issues into a "secular culture of materialism," as one article declared:

> *"What to do about splicing genes, it seems to us, will be decided on the same basis as abortion and euthanasia. If 'life' is purely material, then anything goes: there are no moral boundaries. The trend in public policy in recent decades decidedly has been away from a definition of life as something special and sacred and towards a definition that is 'physico-chemical'."*[31]

Although additional articles maintained this critique, perhaps in an attempt to jockey for political power (addressed later), it was the Supreme Court's approval of organic patents that led to the participation of religious communities in genetic science policy.[32]

In a monumental decision handed down on June 25, 1980, the Supreme Court held in *Diamond v. Chakrabarty* that man-made life-forms were subject to patent laws and protection.[33] The decision resolved a long-standing issue on patents and organic material, as the case dated to 1972, when Ananda Chakrabarty, a researcher at General Electric, applied for a patent on a form of *Pseudomonas* bacteria bred to digest oil slicks.[34] By a narrow 5 to 4 margin the court construed the Patent Act, originally drafted by Thomas Jefferson, so as to include all products of human invention, relying on a 1952 Senate report that recognized as patentable "anything under the sun that is made by man."[35] Chief Justice W. Burger's majority opinion seemed tainted with materialism, stating: "In short, we think the fact that micro-organisms, as distinguished from chemical compounds, are alive, is a distinction without legal significance."[36] But previous patents on organisms, such as Pasteur's 1873 claim to purified yeast, were actually "process" patents – patents granted for the process (fermentation), not the organism.[37] More than any other single event, the ruling galvanized mainstream religious communities and resulted, a mere three days later, in a letter to President Carter from the

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[30] Bohlin, Ray. 1981, "Sociobiology: Cloned from the Gene Cult," *Christianity Today*, vol. 25, pp. 84-88. Quote on 84.

[31] Anon. 1981, "Life Manipulators Must Await Society's Consensus on the Limits of Science," *Christianity Today*, vol. 25, pp. 12-13. Quote on 13.

[32] For additional articles, see Anon. 1981, "Curses or Prayers for Genetic Engineers?" *Christianity Today*, vol. 26, pp.647; Angus, Fay. 1981, "The Promise and Perils of Genetic Meddling," *Christianity Today*, vol. 26, pp.659-62.

[33] *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

[34] Wade, Nicholas. 1980, "Court Says Lab-Made Life Can Be Patented," *Science*, vol. 208, pp. 1445.

[35] The Senate report is quoted in Jasanoff, Sheila. 1995, *Science at the Bar: Law, Science and Technology in America*, Harvard University Press, Cambridge, MA. Quote on 144. For an excellent introduction to this issue, see chapter seven, "Legal Encounters with Genetic Engineering."

[36] Justice Buger, quoted in Wade, "Court Says Lab-Made Life Can Be Patented," 1445.

three General Secretaries of the National Council of Churches, the Synagogue Council of America and the United States Catholic Conference. It would prove remarkably influential.

While the letter admitted that genetic engineering might be an "opportunity for doing good" and new life forms might have "dramatic potential for improving human life," it was clear about the "fundamental danger triggered by the rapid growth of genetic engineering."[38] A mere page and half in length, the text addressed most of the themes present in the larger public controversy. It emphasized the "Frankenstein" problem – that we might not be able to "recall a new life form" – noting that both DDT and DES were in wide use before discovery of their tragic side effects. The letter raised the Nazi eugenic specter and questioned our "playing God:" "History has shown us that there will always be those who believe it appropriate to 'correct' our mental and social structures by genetic means, so as to fit their vision of humanity. This becomes more dangerous when the basic tools to do so are finally at hand. Those who would play God will be tempted as never before." Admitting that it would be naive to ask private corporations to abandon the profit motive, the secretaries posed "heavy" questions instead, asking, "Yet when the products are new life forms, with all the risks entailed, shouldn't there be a broader criteria than profit for determining their use and distribution?" The letter argued that such questions dealt with the "fundamental nature of human life and the dignity and worth of the individual human being." Thus it was not enough for the "commercial, scientific and medical communities alone to examine them; they must be examined by individuals and groups who represent the broader public interest." The secretaries asked President Carter to "provide a way for representatives of a broad spectrum of our society to consider these matters and advise the government on its necessary role." Finally, they pledged the continued engagement of the religious community and requested an appropriate Congressional Committee.

The letter convinced Carter to ask the recently established President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research (1980-83) to address the larger issues of genetic engineering – a task for which the commission was unprepared. Indeed, Carter's decision, coming months before the 1980 election, is interesting, al-

[37] Hubbard, Ruth and Wald, Elijah. 1997, *Exploding the Gene Myth: How Genetic Information is Produced and Manipulated by Scientists, Physicians, Employers, Insurance Companies, Educators, and Law Enforcers*, Beacon Press, Boston. Quote on 176.

[38] "Letter from Three General Secretaries," reprinted in the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. 1982, *Splicing Life: A Report on the Social and Ethical Issues of Genetic Engineering with Human Beings*, U.S. Government Printing Office, Washington, DC. Letter reprinted on pp. 95-96.

though not extraordinary given his well-publicized church membership. Still, one cannot help but wonder if political calculations underlay his decision, as he could ill-afford a public backlash, particularly one involving religious communities, in the final months of his campaign against Ronald Reagan. Although Reagan's standard campaign speeches did not specifically refer to genetic engineering, certainly a portion of his constituency viewed genetic engineering as part of a "secular culture of death" that included abortion (an election issue) and euthanasia. Thus for many voters, genetic engineering, in combination with other bioethical issues, may have served as a political rallying cry. Regardless, the President's Commission, working from a model of the earlier National Commission, debated the issues for two years before pronouncing judgement.

The Commission issued its report, entitled *Splicing Life: A Report on the Social and Ethical Issues of Genetic Engineering with Human Beings*, in 1982. The position of the study was clear from the introduction. Chairman Morris Abram's opening letter to President Reagan noted that the study was not within the Commission's mandate and had instead been prompted by Jewish, Catholic and Protestant organizations that feared genetic technology was analogous to Pandora's box – something the commission "had not found to be the case."[39] In seeking to resolve the controversy the commission relied on two primary approaches to "secularize" or "rationalize" the debate: first, the study dispelled any potential theological conflicts and re-asserted the privilege of "experts" to decide ethical questions; second, the study emphasized scientific and technological inevitability to mute "holistic" and long-term critiques.

Regarding ethical decisions, the report recommended that "public policy on genetic engineering draw heavily upon the wisdom of experts who have earned the public's trust and respect."[40] This subtle proclamation exemplifies the rationale later used to replace dissenting religious and environmental voices with those of professional bioethicists. In addition, the commission concluded that concerns voiced by religious groups paralleled those of the secular community, and so ethical examinations need not be limited to the religious format in which the issues had been raised. The report also attempted to control the metaphors and images of genetic engineering, denouncing the political use of "slogans" such as Dr. Frankenstein (or his monster), Pandora, or Nazi eugenics because they "confused" the public. Perhaps most significant for later debates, the commission separated the risks of gene-splicing technology from the risks of its applications or con-

[39] President's Commission, *Splicing Life*, i.
[40] *Ibid*., 20

sequences and stressed the inevitability of its development. The study admitted, "genetic engineering involves an array of uncertainties beyond those usually found in technological developments."[41] But because "these were impossible to predict" the commission, somewhat tautologically, found no ground for concluding that any "current or planned forms of genetic engineering whether using human or non-human material are intrinsically wrong or irreligious per se."[42] So the report concluded that there was no reason to "abandon the entire enterprise" given its "commercial, scientific and medical interest."[43] Finally, the commission argued that development was inevitable (essentially contradicting their earlier position re: Pandora), and thus the United States must remain involved:

> *"If, for example, the United States were to attempt such a step [a ban], researchers and investment capital would probably shift to other countries where such prohibitions did not exist. … Assuming that research will continue somewhere, it seems more prudent to encourage its development and control under the sophisticated and responsive regulatory arrangements of this country, subject to the scrutiny of a free press and within the general framework of democratic institutions [emphasis added]."*[44]

And with a final nod to future oversight committees, the recombinant DNA controversy was essentially over, although many in the contemporary environmental and religious communities were unaware that serious debate had been closed.

Instead, religious communities debated genetic engineering throughout the early 1980s, as various denominations held conferences and published theological and ethical reports.[45] Activity culminated in 1983, when Jeremy Rifkin, director of the Foundation on Economic Concerns, authored a "Theological Letter Concerning the Moral Arguments Against Genetic Engineering of the Human Germline Cells." Rifkin, known for his resistance to genetic engineering and fondness for publicity, hoped to "resacralize" nature.[46] He adopted the term "algeny" – meaning to change the essence of a living thing – as his metaphor for "humanity's attempt to give metaphys-

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[41] *Ibid*., 78.

[42] *Ibid*., 79.

[43] *Ibid*., 79.

[44] *Ibid*., 79.

[45] For an excellent chronicle of this activity see Chapman, *Unprecedented Choices*, pp. 27-75.

[46] An anti-war protester in the 1960s, Rifkin became known for his antics in congressional hearings. Regarding his "resacralization of nature," see Rifkin, Jeremy. 1984, *Algeny: A New World*, Viking Press, New York.

ical meaning to its emerging relationship with nature."[47] This new approach perceives the living world as *in potentia*, tearing down the boundaries between species and conceiving of the organism as a "temporary set of relationships existing in a fluid context."[48] Rifkin argued that algeny was both an interpretation of nature and a mandate for manipulating nature at the same time, often at levels both novel and morally questionable.

Rifkin's letter attracted substantial attention because it assembled a wide coalition of 59 religious leaders, including Jerry Falwell, Pat Robertson, Bishop James Armstrong of the National Council of Churches and 21 Catholic bishops among others.[49] A writer in *Science* worried that Rifkin's message would receive a favorable congressional hearing because the religious leaders represented an estimated 50 million constituents.[50] Yet Rifkin's broad coalition fragmented almost immediately. Members of the United Church of Christ quickly backed away from a total ban. Indeed, many signatories later recanted after admitting to having never seen the letter, while a number of clerics declared it misleading and unnecessary.[51] Meanwhile, the Pope's acceptance of limited germ-line engineering, following the intervention of a team of NAS scientists, effectively subdued Catholic protests.[52] The controversy ended rapidly. The country's scientists, bioethicists, politicians and commercial sector supported the new biotech industry, championing its most prominent federal heavyweight - the Human Genome Project – in the late 1990s.

At his opening press conference, James Watson, co-discoverer of the double-helix and first director of the National Center for Human Genome Research (NCHGR), spoke on the need to address the legal and social implications raised by the new project.[53] Genetic discrimination was the central issue to be studied, as early researchers believed that "human genome research itself does not pose any new questions, [though] use of the research

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[47] Rifkin, Jeremy. 1998, *The Biotech Century: Harnessing the Gene and Remaking the World*, Penguin Putnam, New York. Quote on 33.

[48] *Ibid*., 34.

[49] Anon. 1983, "Gene-Altering Opposed," *Christian Century*, vol. 100, pp. 517.

[50] Norman, Colin. 1983, "Clerics Urge Ban on Altering Germ-Line Cells," *Science*, vol. 220, pp. 1360-61.

[51] Cook-Deegan, Robert. 1994, *The Gene Wars: Science, Politics, and the Human Genome*, W.W. Norton, New York. Especially pp. 268-69.

[52] Cullerton, Barbara. 1984, "Connecticut Church Passes Genetics Resolution," *Science*, vol. 226, pp. 674. Regarding NAS attempts to educate, or sway, the Pope, see Smith, R. Jeffrey. 1981, "Pope John Paul Meets the Scientists," *Science*, vol. 211, pp. 261; see also Kolata, Gina. 1982, "The Pope's Science Advisors," *Science*, vol. 215, pp. 1076-77.

[53] Watson, James. 1990, "The Human Genome Project," *Science*, vol. 248, pp. 46. Watson's interest did not stem from religious motivations. As he later stated, "I never thought there was a spiritual basis for life," and "The problem in the United States is, it's not socially acceptable to be against god." James Watson, quoted in Rennie, John. 2003, "A Conversation with James D. Watson," *Scientific American*, available at: http://www.sciam.com. [Accessed 3/18/2003.]

data could raise very challenging issues."[54] The response was the creation of a co-operative project in 1990, the Ethical, Legal and Social Issues program (ELSI), as well as the "Genetics, Religion, and Ethics" initiative of the NCHGR.[55] The first conference, held in March 1990 at the Institute of Religion at the Texas Medical Center in Houston, drew together scientists, theologians, and medical practitioners.[56] Such conferences proved successful at diffusing positive interpretations of genetic engineering. Two attendees, James Childs and James V. Bachman, later returned home to teach young seminarians a "Christian" understanding of genetics.[57] Although the original focus was on genetic discrimination – an early ELSI working-group recommended changes to the Equal Employment Opportunity Commission – the program looked to branch out and include other approaches, including theology.[58] Eventually, the Center for Theology and Natural Sciences (CTNS) conducted the first theological inquiry funded by the federal government.

The CTNS/ELSI program represented "professional" bioethics. ELSI wanted to consult with religious leaders and the Center for Theology and the Natural Sciences seemed like the "appropriate" choice: Robert John Russell, an ordained minister in the United Church of Christ with a Ph.D. in physics, founded and ran the Center. Although advisors suggested he forego Christianity to better his science in graduate school, Russell was determined to engage, rather than separate, the two fields. Founded on a shoestring budget, CTNS would "provide the media with an alternative to Jerry Falwell," presenting an intelligent, and informed, Christian interpretation of contemporary science.[59] Loosely tied to the Graduate Theological Union (GTU), CTNS adopted an ecumenical position towards Christianity and a critical realist perspective towards science, as Russell demanded the organization use only the "best" science – typically physics – and shun "Creation Science."[60] CTNS's "Theological Implications of the Human Genome Initiative" project became the first NIH grant to be funded for theological investigation, receiving $1.4 million for three years of study. Yet questions remained about the relationship.

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[54] Drell, Daniel. 1992, "DOE Ethical, Legal and Social Issues Program Enters Its Third Year," *Human Genome News*, vol. 4, pp. 1.

[55] Cook-Deegan, Robert M. 1990, "NIH-DOE Joint Working Group on Ethical, Legal, and Social Issues Established," *Human Genome News*, vol. 2, pp. 2.

[56] Anon. 1991, "Genetics, Religion, and Ethics Initiative Holds Conferences," *Human Genome News*, vol. 2, pp. 2.

[57] Kastilahn, Kathleen. 1993, "Back to Genesis: Human Genome Project Opens Road Map to Genetic Diseases. Where Will It Lead Us?" *the Lutheran*, pp. 8-13.

[58] Yesley, Michael. 1991, "ELSI Working Group Studies Genetic Bias," *Human Genome News*, vol. 3, pp. 2-4.

[59] Robert Russell, quoted in Wertheim, Margaret. 1994, "Science and Religion: Blurring the Boundaries," *Omni*, vol. 17, pp. 36-44. Quote on 37.

The project's theological approach attracted minor criticism. Richard Doerflinger, director of the Catholic Bishops' Office for Pro-Life Activities, questioned the composition of the panel, pointing out that Thomas Shannon, the only Catholic, belonged to Catholics for Free Choice, a renegade group with a liberal stance towards abortion (a view shared by his liberal Protestant colleagues).[61] Rabbi Moshe Tendler at Yeshiva University concurred, accusing CTNS of "packing the jury."[62] Indeed, the "politics" of CTNS's Christian theology were tested when numerous researchers seemingly confirmed previous findings on a link between male homosexuality and genetics in August of 1993. CTNS's cautious response differed from many conservative Christians: the public debate on genetic determinism pitted researchers like Dean Hamer, a molecular biologist involved in National Cancer Institute's genetic study, against Paul Cameron, chairman of the Family Research Institute Inc., a conservative lobbying group whose slogan was "Scientists Defending Traditional Family Values."[63] By the mid-1990s, the split between CTNS and the Family Research Institute merely reflected a larger schism within American Christianity – a bioethical divide most notable in the debate over patents.

In May of 1995, nearly seven years after the patenting of the Oncomouse, Jeremy Rifkin organized another coalition of religious leaders to oppose genetic patenting.[64] The impetus for the petition came from the Methodist church following approvals from the PTO on genetically modified organisms after a hiatus of five years.[65] Nearly 80 church leaders, including representatives from Jewish, Muslim, Hindu, and Buddhist faiths, signed the "Joint Appeal Against Human and Animal Patenting." In hindsight, Rifkin admitted not all the religious leaders opposed process patents, but maintained they were unanimously opposed to patenting life forms.[66] Ronald-Cole Turner and Audrey Chapman emphasize this point, given that many

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[60] The Graduate Theological Union (GTU), located adjacent to the University of California's Berkeley campus, is a union of seminaries ranging in denomination (including Buddhism and Judaism). Although the GTU did not fund CTNS, Russell taught GTU classes and the GTU appointed 51% of the CTNS board members. See "Meeting and Program Information" from the CTNS Annual Meeting of the Board on Oct. 30, 1988, in Box 1 of the CTNS Archives located at the Graduate Theological Union, in the Flora Lamson Hewitt Library, 2400 Ridge Road, Berkeley, CA 94709 (hereafter referred to as **CTNS Archives**).

[61] Lattin, Don. 1991, "Gene Research Starts Ethics Debate," San Francisco Chronicle, pp. A6.

[62] *Ibid*.

[63] Jefferson, David J. 1993, "Science Besieged: Studying the Biology of Sexual Orientation Has Political Fallout," *New York Times*, pp. A1.

[64] Developed for cancer research by Harvard University, the "Oncomouse" became the first genetically-modified mammal to be patented in 1988.

[65] Stone, Richard. 1995, "Religious Leaders Oppose Patenting Genes and Animals," Science, vol. 268, pp.1126. The Methodist Church generally supported process patents but not exclusive ownership.

[66] Rifkin, *The Biotech Century*, pp. 66.

of those who endorsed the Joint Appeal, particularly liberal Christian denominations like the National Council of Churches, accepted the potential benefits of genetic engineering.[67] Others, however, did not. Richard Land, executive director of the Christian Life Commission of the Southern Baptist Convention, averred, "marketing human life is a form of genetic slavery," adding, "this issue is going to dwarf the pro-life debate within a few years."[68] The Appeal, as well as Rifkin's personal infamy, guaranteed publicity, leading biotech representatives to warn that patents were essential to industrial research and competitiveness, pointing out that patents did not imply ownership, but only "temporary protection against attempts by other parties to commercialize."[69] Many religious leaders agreed, including the Center for Theology and the Natural Sciences, which published a critique of the Joint Appeal.[70] In a press release dated May 18, 1995, Ted Peters and Robert Russell stated that the religious opposition was "based on erroneous information" and served "only the cause of Jeremy Rifkin while borrowing baptism from the prestige of honored religious leaders."[71]

Of course, exactly which "honored religious leaders" should "baptize" exactly which sciences was increasingly less clear, especially after researchers at George Washington University were able to create genetically identical human embryos through blastomere separation – a technique separating early embryonic cells (the blastomere) into two smaller, but still viable, embryos.[72] Amid protests by the Catholic Church, NIH established a Human Embryo Research Panel (HERP, est. 1994) to readdress the ethical issues of embryonic research, bringing the abortion debate into science policy discussions and catalyzing the backlash against "professional" bioethics.

3. CONSERVATIVE CHRISTIANS AND THE POLITICIZATION OF BIOETHICS

Christians re-entered bioethics in the 1990s. In 1993, amid the GWU embryo research controversy, a number of leading Christian bioethicists met to address "the noticeable lack of explicit Christian engagement in the crucial bioethics arena."[73] Their meetings resulted in the Center for Bioethics and

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[67] Cole-Turner, Ronald. 1995, "Religion and Gene Patenting," *Science*, vol. 270, pp. 52. See also, Chapmen, *Perspectives on Genetic Patenting*, pp. 11.

[68] Freedberg, Louis. 1995, "80 Church Groups Ask Ban on Gene Patents," *San Francisco Chronicle*, pp. A19.

[69] *Ibid*.

[70] Hall, Carl. T. 1995, "Theologians Split Over Gene Rights," San Francisco Chronicle, pp. B3.

[71] Robert Russell and Ted Peters, CTNS Press Release, dated May 18, 1995, in the CTNS archives, 1.

[72] Klotzko, "The Debate About Dolly," in *Ibid*., 19-30, esp. 26.

[73] Material from Center for Bioethics and Human Dignity website: http://www.cbhd.org. [Accessed Mar. 3, 2003.] The Center is located in Chicago, IL.

Human Dignity (CBHD), a Christian center and internet clearinghouse for bioethics opposed to all forms of genetic manipulation and cloning.[74] Today, numerous groups are involved: the Family Research Council maintains a Center for Human Life and Bioethics; the anti-evolution Discovery Institute has a Center for Bioethics and Culture; and the Prison Ministries Fellowship, in partnership with convicted Watergate burglar Chuck Colson, launched a Council for Biotechnology Policy. Such institutions represent the backlash against the "rationalization" or "secularization" of bioethics mentioned earlier, albeit with an important *political* gloss: many of the new centers are staffed by influential conservative intellectuals whose ideas help shape the Republican platform.

The influence of conservative Christian bioethics dates to the founding of the Center for Bioethics and Human Dignity (est. 1993). Established at Trinity International University, an evangelical school outside of Chicago, the CBHD slowly became the "hub" of conservative Christian bioethics by sponsoring conferences, publishing materials for the public and press, and training a new generation of "Christian" bioethicists. Originally the brainchild of Trinity head Nigel M. de S. Cameron, a conservative British bioethicist and founder of the journal *Ethics & Medicine*, CBHD listed its goals as: "1. Educate a critical mass of healthcare professionals, scientific researchers, educators, and church leaders; 2. Facilitate the work of thinkers who will champion the dignity of every human being; 3. Populate the media and other significant forums with credible, catalytic voices for human dignity."[75]

Within a few years, the Center's conferences were well-attended. Internal memorandum note happily that "several hundred leaders from around the U.S. and world gathered…to wrestle with how to really have a substantial life-affirming impact on today's world." Indeed; the gathering highlighted the growing conservative Christian bioethics community, as it included the leaders of the National Conference of Catholic Bishops, Americans United for Life, the Christian Medical & Dental Society, the Christian Legal Society, Focus on the Family, and the Nurses Christian Fellowship, among others. [76] Of course, the organization was also involved in publications and publicity. In summation of its first decade, the Center's press release in July 2005 stated:

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[74] The group protested NIH's policy allowing therapeutic cloning in 1999, see Bonnickson, *Crafting a Cloning Policy*, pp. 86-87.

[75] Center for Bioethics and Human Dignity, printout on "Educating, Equipping, Engaging," 1994 or 1995 (sheets were printed for multiple years; exact date cannot be determined).

[76] Center for Bioethics and Human Dignity, "To Make a Difference," 1999.

> *"As CBHD enters its second decade, it is training nearly 2,000 people a year through an array of Chicago-based institutes, conferences, and seminars along with numerous conferences across the U.S. and world – in 50 locations to date. The resources developed by CBHD include over 30 books (in print and process), hundreds of audios and videos, and the Advance Directive Kit. CBHD has a substantial internet presence, receiving over 16 million hits annually on its sites, and it is featured in major media and news outlets (ABC, CBS, Fox, NBC, PAX, National Public Radio, MBN, The New York Times, Washington Times, and Chicago Tribune).[77]"*

Given the youth of the organization, out-going CBHD President Jon Kilner marveled at its early success.[78] Within merely a decade, CBHD members helped create a conservative Christian bioethics community, complete with internal journals, conference circuits, and training programs.

Although the public tends to focus on the "high-profile" bioethics controversies – embryonic stem cells or cloning for example – an important focus of CBHD is Christian counseling: most "professional" bioethics materials simply don't address family planning, genetic testing, stem-cell research, or a host of other issues, from an explicitly Christian, much less evangelical Christian, perspective. Thus many Christian ministers and counselors, especially those advising an evangelical population, lack the appropriate brochures and videos (or, in some cases, understanding and arguments). Kilner stressed "educating the educators" – training a new generation of bioethicists and informed ministers.[79] As such, in addition to frequent conferences for pastors, the Center works with Trinity International University to offer a Master of Arts in Bioethics. This program, one of a handful now at Christian universities, believes "There is a pressing need for trained Christians in a society that has lost touch with the central significance of the sanctity of human life for health care."[80] Students, each of whom must profess an evangelical commitment, are advised to find jobs in "a mushrooming array of bioethics-related positions…for example, the Christian Medical and Dental Associations, Focus on the Family, crisis pregnancy centers, public policy and non-profit organizations, law, education, counseling."[81] And the field of

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[77] Center for Bioethics and Human Dignity, press release entitled "New Leadership Opportunities," (July 2005)

[78] Interview with Jon Kilner, conducted at the Center for Bioethics and Human Dignity, 2065 Half Day Road, Bannockburn, IL 60015, tape recorded on Sept. 21, 2006. Hereafter referred to as Kilner Interview.

[79] Kilner Interview.

[80] Trinity Graduate School, brochure for "Master's of Arts in Bioethics," (April 2006)

[81] *Ibid*.

Christian bioethics is booming, in part because of its growing influence and media savvy.

The Center's board is very aware that political and media connections are critical to changing public perceptions of bioethics and science policy.[82] A 1999 memo highlights addressing "key bioethical issues in the media," directing or informing "political-educational initiative in Washington," and cultivating "relationships with key people in positions of influence (e.g. … Francis Collins, head of Human Genome Project; C. Everett Koop, former US Surgeon General)."[83] A later memo, entitled "CBHD: The First Ten Years, Media Venues," offers the following assessment:

> *1. Periodic press releases issued in response to significant bioethics-related developments to 6,400 media professionals*
>
> *2.d. For example, when the Korean cloning of human beings to obtain embryonic stem cells took place in 2004, CBHD appeared in over 30 media interview venues during the two days after the announcement, including the NBC Nightly News, National Public Radio, the New York Times, Prime Time America, MBN Radio and FOTF News in Focus*

The CBHD was equally prepared for the 2004 elections; after Ron Reagan, son of the former U.S. President Ronald Reagan, endorsed embryonic stem cell research at the Democratic National Convention, its members appeared on multiple channels to emphasize the immorality and inefficiency of the research. Given the positions of the CBHD, it naturally aligns itself with social conservatives in the Republican Party, providing a critical participant in the larger movement merging conservative Christian bioethics and political partisanship.

William Kristol, Wesley J. Smith, and Eric Cohen are among the new conservative Christian elite. The Ethics and Public Policy Center (EPPC), a Judeo-Christian think tank founded in 1976, initiated a program on "Biotechnology and American Democracy" in 2002 to "encourage moral reflection" on emerging bioethical issues.[84] The EPPC's journal, *The New Atlantis*, edited by Eric Cohen, serves as a popular mouthpiece for conservative bioethics. Kristol, a regular contributor and former chief of staff for vice president Dan Quayle, founded a "Bioethics Group" to counter the liberal-

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[82] This "awareness" was clear in numerous conversations with Jon Kilner, C. Ben Mitchell, Nigel M. de S. Cameron, and Dan McConchie, conducted at the Center, Sept. 20-22, 2006.

[83] Center for Bioethics and Human Dignity, memorandum entitled "A Demonstrated Ability," (1999)

[84] For an overview of the EPPC, see "About," available at: http://www.eppc.org/about/xq/ASP/about.htm. [Accessed Apr. 11, 2003.]

ism of professional bioethicists, a.k.a. "secular priests."[85] Kristol, who testifies frequently before bioethics panels in Congress, believes cloning may represent a greater public threat than communism or slavery. [86] Wesley J. Smith, a member of the "Group" and an affiliate of the Discovery Institute, accuses policy makers of ceding bioethics "to people who have the most letters after their name," thus giving in to scientism, biotech corporations and the "culture of death."[87]

To challenge this dominant culture, conservatives downplayed religion and constructed a secular bioethics based on dignity and human nature. The political theorist Francis Fukuyama, for example, considers the polarization between scientific and religious communities "unfortunate" because "it leads many to believe that the only reason one might object to certain advances in biotechnology is out of religious belief."[88] Instead, Fukuyama, Kass, Kristol, and Cohen emphasize the benefits of adult stem cell research while casting embryonic stem cell research as a threat to venerated social institutions like marriage and family.[89] At the heart of the debate are "human dignity" and "human nature," two concepts sufficiently nebulous as to allow for almost any interpretation.[90] Cohen, for example, assumes that a respect for "human dignity" extends to the embryo (thus precluding embryonic stem cell research), while Kass and Kristol extol the intuitive "wisdom of repugnance" that causes us to recoil from changing human nature through technology.[91]

Proponents of Embryonic Stem cell (ES) research challenge all these assumptions. The vaunted "wisdom of repugnance" has been a poor guide historically: two hundred years ago, slavery aroused no "repugnance;L twenty years ago interracial marriage did (for some). Concerns over altering "human nature" are equally suspect because of the boundary between acceptable and unacceptable alterations. For example, are corrective contacts and hearing aids acceptable? What about pacemakers and dialysis? Hormone replacement therapy, chemotherapy, and a myriad of other biomedical procedures already alter "human nature" in the name of "progress".

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85 See Kristol, William and Cohen, Eric, eds. 2002, *The Future is Now: America Confronts the New Genetics*, Rowan & Littlefield, Lanham, MA.

86 Kristol, William. 2001, "Bush's Critical Choice on Cloning," *Washington Post*, pp. A19.

87 Wesley J. Smith, quoted in *Ibid*. See also Smith, Wesley J. 2002, *Culture of Death: The Assault on Medical Ethics in America* , Encounter Books, San Francisco. See also Smith, Wesley J. 2004, *Consumer's Guide to a Brave New World*, Encounter Books, San Francisco.

88 Francis Fukuyama, *Our Post-Human Future*, 12.

89 Levin, Yuval. 2003, "The Paradox of Conservative Bioethics," *The New Atlantis*, pp. 53-65.

90 Kass, Leon. 2002, *Life, Liberty and the Defense of Dignity: The Challenge for Bioethics,* Encounter Books, San Francisco.

91 Cohen, Eric. 2004/05, "The Tragedy of Equality," *The New Atlantis,* pp. 101-09.

Clearly, room for interpretation, and partisanship, exists in the brave new world of biomedicine.

In his first prime time news conference as President, Aug. 9, 2001, George W. Bush limited ES research to pre-existing cell lines derived from discarded IVF treatments. Although Bush actually *extended* federal funding of embryonic research, his position and his President's Council on Bioethics (PCB) quickly came under attack for injecting the politics of abortion into the stem cell debate. Indeed, the President failed to consult with Harold Varmus, the Director of NIH, or Rosina Bierbaum, the director of the White House's Office of Science and Technology Policy, choosing instead to meet with bioethicists Leon Kass and Daniel Callahan, both of whom were on record as opposed to all forms of stem cell research. [92] Such ideological blinders characterize much of the administration's science policy.

Relations between the scientific community and the Bush administration have often been confrontational. Both the American Association for the Advancement of Science and the National Academy of Sciences criticized the administration for ignoring scientific advice; the Union of Concerned Scientists and twenty Nobel Laureates chronicled numerous incidents in which science had been manipulated or distorted.[93] The administration appointed David Hager – a physician infamous for advising women to use prayer to reduce PMS symptoms – to the FDA's Reproduction Health Advisory Commission and asked candidates for scientific positions if they supported the President.[94] Opponents accused Tommy Thompson, who favored ES research before his appointment as Secretary of Health and Human Services, of censoring material from NIH directors supportive of embryonic research.[95] At the same time, Thompson's department rewrote the charter of a scientific panel addressing the federal rules for research on pregnant women so as to separate the interests of the mother from the fetus (thereby giving the fetus greater "personhood" and rights).[96] The pro-life debate, and its religious overtones, intertwined with the PCB.

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[92] Thompson, Nicholas. 2003, "Science Friction: The Growing – and Dangerous – Divide between Scientists and the GOP," *The Washington Monthly*, accessed online at www.washingtonmonthly.com/features/2003/0307.thompson.html.

[93] Malakoff, David. 2004, "White House Denies Playing Politics With Science," *Science*, vol. 303, pp. 1446-47. See also Malakoff, David. 2003, "Democrats Accuse Bush of Letting Politics Distort Science," *Science*, vol. 301, pp. 901.

[94] Revkin, Andrew C. 2004, "Bush v Laureates: How Science Became a Partisan Issue," *New York Times* accessed online at www.nytimes.com. See also Thompson, Nicholas. 2003, "Science Friction: The Growing – and Dangerous – Divide between Scientists and the GOP," *The Washington Monthly*, accessed online as www.washingtonmonthly.com/features/2003/0307.thompson.html

[95] Weiss, Rick. 2003, "HHS Sought 'One Voice' From Its Many Mouths," *Washington Post*, pp. A19.

[96] Novak, Kris, 2003, "U.S. Scientific Panels Bush-Whacked," *Nature Medicine,* vol. 9, pp. 153.

Created by executive order, the President's Council on Bioethics, like the NBAC before it, reflected its parent administration. President Bush chose Leon Kass, the outspoken opponent of cloning and abortion, to head the eighteen member panel, which also included conservatives Eric Cohen and Charles Krauthammer. ES supporters groused that the panel's composition pre-ordained their recommendation. In response, the PCB explicitly avoided religious or theological language: William Galston, a participant, emphasized that the PCB was "moral but not theological," and had made a "deliberate effort to find a public language accessible" to various faiths, without reference to "theological positions" or "god."[97] Although the PCB found common ground in rejecting reproductive cloning, therapeutic cloning proved far more difficult. Only a slight majority (10 of 18) supported the Council's four-year moratorium on therapeutic cloning and some members later criticized the report as a "very political process" (the two scientists on the panel voted to expand therapeutic cloning).[98]

The "politics" of the panel were on display. Chairman Kass linked stem cell research to the terrorist attacks on September 11, 2001, concluding that now "we more clearly see evil for what it is" and thus must "steer a prudent middle course, avoiding the inhuman Osama bin Ladens on the one side and the post-human Brave New Worlders on the other."[99] However, the most controversial material surfaced in the appendix, where panel members were allowed to disagree with the council's recommendations. Elizabeth Blackburn suggested the "moratorium can only be counterproductive;" Michael Gazzaniga disagreed with "most of the moral reasoning argued in this report," charging, "For me it is full of unsubstantiated psychological speculations on the nature of sexual life and theories of moral agency;" while Janet Rowley admonished, "Congress should lift the ban and establish a broadly construed regulatory board, NOW [emphasis in original]."[100] Instead, the President removed two members critical of the panel's report (including Blackburn) and replaced them with two political scientists known

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[97] Galston, William A. 2003, "The Danger of Absolutes," in "Biotechnology: A House Divided," *The Public Interest* (Winter 2003), available at http://www.thepublicinterest.com/current/article2.html. [Accessed Mar. 4, 2002.]

[98] Weiss, Rick. 2002, "Bush Panel Has 2 Views on Embryonic Cloning," *Washington Post*, pp. A5. Ted Peters also joined in this criticism, offering the theological support for the minority position based on the "14-day rule" exempting blastocysts from "embryo" or "person" status. See Peters, Ted and Bennett, Gaymon. 2002, "For Beneficence, Let Cloning for Research Continue," *The Scientist*, vol. 16, pp. 14.

[99] Leon Kass, in the "Foreward," in Kass, Leon, ed. 2002, *Human Cloning and Human Dignity: The Report of the President's Council on Bioethics*, Public Affairs, New York. Quotes on 15 and 16.

[100] Blackburn, Elizabeth. 2002, "Statement of Professor Blackburn," in Kass, *Human Cloning and Human Dignity*, pp. 280-83 Quote on 283. Gazzaniga, Michael, "Statement of Dr. Gazzaniga," in *ibid*., 290-94, quote on 290. Rowley, Janet, "Statement of Dr. Rowley," in *ibid*, 340-42, quote on 342.

to oppose all forms of cloning and a Seventh-Day Adventist neurosurgeon with similar views. [101] One of the new appointees, Diana Schaub linked stem cell research to slavery.[102] Not surprisingly, the Family Research Council celebrated the installation of "pro-life" members, while the American Society for Cell Biology called it the "Friday Afternoon Massacre".[103]

Of course, setting stem cell policy is a very political process. The stem cell controversy "changed the constituency of those interested in embryo research," bringing in patient advocacy groups, scientific researchers, and pro-life coalitions.[104] Alliances could be unexpected: Nancy Reagan, a matriarch of pro-life Republicans, supported ES research because of the potential for an Alzheimer cure.[105] As we have seen, odd partnerships are often a byproduct of religion and the politics of genetic engineering.

At a public policy conference in 2003, conservative bioethicist Eric Cohen spoke of the novel alliances created by the cloning debate. "Greens" and social conservatives oppose many advances because of fears that biotechnology corrupts nature and human nature, while libertarians, pro-business conservatives, and "quality-of-life liberals" view the same advances as liberating individuals from the inequalities of disease, suffering and handicap.[106] This tacit partnership of pro-life conservatives with "greens" is similar to the partnership between the three secretaries and the Sierra Club over the patenting and commercialization of organisms in the 1960s and 1990s. But the moral position of non-humans remains a central sticking point. Environmental opponents of genetic research tend to focus on preserving genetic diversity and stopping biopharming (using animals to manufacture pharmaceuticals), genetic patenting, and genetically modified foods – none of which has been a high priority for conservative Christians.

The political impact of bioethics may be more interesting. Reagan's first election marks perhaps the first use of bioethical issues – abortion and genetic engineering – to mobilize conservative Christian voters. Twenty years later the climate remained favorable: Richard Cizik, head of the Washington, D.C. branch of the National Association of Evangelicals, opined, "hu-

[101] Keim, Brandon. 2004, "Beyond Politics: The Strange Saga of the President's Council on Bioethics," *GeneWatch,* vol.17, pp. 6-10. Dismissed were William May and Susan Blackburn; the new appointees were Peter Lawler, Benjamin Carson and Diana Schaub.

[102] Holden, Constance, ed. 2004, "Stem Cells and Slavery," *Science*, vol. 304, pp. 1742.

[103] Holden, Constance. 2004, "Researchers Blast U.S. Bioethics Panel Shuffle," *Science*, vol. 303, pp. 1447.

[104] Bonnickson, *Crafting a Cloning Policy*, quote on 92.

[105] Senator Elizabeth Dole (Rep.-NC), representing a state with high biotech investment, was equally conflicted. See Weiss, Rick. 2002, "An Uncertain Year for Cloning Laws," *Washington Post*, pp. A1.

[106] Eric Cohen, in Fradkin, Hillel. 2003, "The Genetic Revolution and American Democracy: A Conversation with Eric Cohen and William Kristol," *Center Conversations*, vol. 19, pp.1-12. Quote on 4.

man cloning can mobilize evangelicals and even take them to the polls. It has political salience, whereas for many of our folks, economic issues make their eyes glaze over."[107] Conservative Christians and twenty-five other conservatives, including Richard Cizik, Richard Land of the Southern Baptist Convention and David O'Steen of the National Right to Life Committee, sent a letter to Bush supporting the Brownback bill. Ultimately, over thirty groups engaged in a concerted campaign to pressure Bush to back anti-abortion judges and a ban on cloning.[108]

Genetic engineering resurfaced in the presidential elections two years later. Although the Catholic Church instructed Catholic politicians like Kerry to oppose embryonic research, Democrats capitalized on the death of Ronald Reagan and support from his wife and son to highlight candidate Kerry's proposal to lift Bush's ban on stem cell studies.[109] Endorsed by 48 Nobel laureates and the Union of Concerned Scientists, Kerry positioned himself as pro-science (read "pro-progress") at the democratic convention.[110] The Republican response was swift: members of CBHD stationed themselves outside the convention to rebut democratic claims, while Eric Cohen attacked Kerry for normalizing the "radical", dividing the political landscape into the "party of cloning" and the "party of moral limits"[111] Leon Kass, head of the President's bioethics council (an independent group?), censured Bush's critics for playing politics with the sick in a *Washington Post* editorial.[112] The political polarization worked: polls before the election demonstrated support or opposition to embryonic stem cell research divided along partisan lines.[113] Stem cell research, and therefore bioethics and science policy, was now just another element of the political culture wars.

4. INTO THE NEW MILLENNIUM

What then is the appropriate role for religious voices in bioethical debates? And what are the goals of such debates? Certainly consensus is not the goal; in a religiously pluralistic society consensus cannot be the goal if any goals are to be achieved. Appropriate representation, given our democratic ideal, is perhaps the best outcome. But representation is often limited to those

[107] Leonard, Mary. 2002, "Cloning Foes to Launch Campaign," *The Boston Globe*, pp. A1.

[108] *Ibid.*

[109] Williams, Daniel. 2003, "Pope Admonishes Catholic Politicians; Stances same, but Direct Appeal Unusual," *Washington Post*, pp. A20.

[110] Wilgoren, Jodi. 2004, "Kerry Would Lift Funds Ban on Stem Cell Studies," *International Herald Tribune*, pp. 4.

[111] Kolata, Gina. 2004, "Hopes Now Outpace Stem Cell Science," *New York Times*, pp. 4.

[112] Kass, Leon R. 2004, "Playing Politics with the Sick," *Washington Post*, pp. A35.

[113] Davidson, Keay. 2004, "Stem Cell Initiative Leads by Small Margin: Opinions on Funds for Research Mirror Presidential Race," *San Francisco Chronicle*, pp. B1.

communities, religious or environmental, supportive of controversial scientific research. On one hand, Francis Collins, the current head of the ELSI program, is evangelical, believes in an interventionist God, and is a member of the American Scientific Affiliation (a creationist organization). Nonetheless, Collins is an advocate of genome research and is supported by scientists. On the other hand, few supported the Raelians' attempts at cloning; the birth announcement of "Eve," a child falsely claimed to have been cloned, in December 2002 was met with nearly uniform dismay and disbelief.[114] However, given the slight chance of their success, scientists were primarily concerned the announcement would increase the prominence of the "religious right" in genetic debates: ACT's Michael Lanza bemoaned, "It's the announcement the religious right and anti-abortion groups have been praying for," while Senator Brownback (R–KA), author of an anti-cloning bill, hoped "it moves the debate forward, so we're able to get legislative action soon."[115] Yet not all opponents of cloning are from religious communities.

Others, particularly those from environmental communities, have also objected to genetic engineering (although their position contains an implicit spirituality). Indeed, religious protests are undermined by the plurality of American religion, which is wondrously creative but politically ineffective; witness the fragmentation of Rifkin's coalitions. Many liberal Christian groups, such as the World Council of Churches, the United Church of Christ, or the Center for Theology and the Natural Sciences, support genetic engineering to varying degrees, while others, often Catholic or Southern Baptist associations, have stronger reservations about genetic research because of positions on abortion and other bioethical issues. Only groups defined by ethnicity have had considerable influence. And though religious communities have had little influence, supporters of ES research often decry their participation.

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[114] The Raelians are a religious movement based at "UFO Land" outside Montreal whose tenets include "Thou Shalt Clone." Although the group lacked the necessary training, equipment and funding to succeed, their public exposure caused politicians across the spectrum to denounce any attempts at human cloning. For the Biotechnology Industry Organization opposition, see Feldbaum, Carl B. 2002, "BIO Statement on Human Cloning," issued Dec. 27, 2002, available at http//www.bio.org/newsroom/newsitem.asp. [Accessed Jan. 16, 2003.] For AAAS opposition, see AAAS, "Expressing Strong Concern at Human Cloning Reports, AAAS Cautions Against Overreaction," available at http://www.aaas.org/news/releases/2003/0102cloning.shtml. [Accessed Feb. 18, 2003.].

[115] On their chance of success: the Raelians claimed an embryonic implantation rate of 100%, unbelievably high given IVF treatments achieve only 20% and scientists have been unable to successfully clone a Rhesus monkey. See Anon. 2003, "Generating Copy(s)," *Nature Biotechnology*, vol. 21, pp. 111. Lanza is quoted in Grady, Denise and Pear, Robert. 2002, "Outrage Over Cloning Claim," *The New York Times*, available at http://www.nytimes.com/2002/12/29/health/29CLON.html. [Accessed Dec. 29, 2002.] Brownback is quoted in Canedy, Dana and Chang, Kenneth. 2002, "Sect Claims First Cloned Baby," *The New York Times*, available at http://www.nytimes.com/2002/12/28/health/28CLON.html. [Accessed Dec. 28, 2002.]

In hindsight, it is clear that the American experiment in bioethics remains open-ended – there will be no principles universally accepted by a diverse, non-"universal," culture. Instead, bioethics reflects the divisions within American culture, whether within American Christianity or American politics, as new research demands that the various institutions and communities in society – be they political, religious or environmental – respond to remain relevant and participate in public debate. And thus the experiment goes on.