CLONING HUMAN BEINGS

Religious Perspectives on Human Cloning

Commissioned Paper
by Courtney S. Campbell, Ph.D.
Oregon State University

CONTENTS

INTRODUCTION

In response to the cloning of a sheep in Scotland, President Clinton requested that the National Bioethics Advisory Commission (NBAC) investigate and make recommendations on the prospects of human cloning by May 26, 1997. Citing matters of morality and spirituality, the President, on March 4, 1997, imposed a temporary moratorium on federal funding of human cloning research. This paper was prepared for NBAC to assist in its deliberations and policy recommendations.

The research methods used in preparation of this report included: (1) a comprehensive review of literature in theological biomedical ethics on human cloning since the mid-1960s; (2) attendance at and review of the testimony of religious thinkers submitted at public hearings before NBAC on March 13 and 14, 1997; (3) solicitation and review of ecclesiastical statements on genetic engineering and human cloning; (4) an ongoing Nexus search to identify religious thinkers with perspectives on human cloning discussed in print media; (5) personal or telephone interviews with many of these thinkers. A bibliography of these sources is provided in appendices A and B.

The report generated from this research is organized into five sections: (1) a brief historical overview of religious thought on the ethics of human cloning; (2) a discussion of selected themes among theological bioethicists that recur frequently in ethical evaluations of human cloning. These themes are derived primarily from the scholarly literature of the western faith traditions; (3) a summary of approaches to the theology, ethics, and policy of human cloning from ten major faith traditions; (4) an appendix containing an annotated bibliography of religious literature on human cloning in biomedical ethics; (5) an appendix containing a bibliography of materials used in preparation of this report.

The author wishes to extend appreciation to NBAC for the invitation to prepare this report; to Dr. James Childress, NBAC, for procedural and substantive suggestions; to Dr. Joan Woolfrey, Oregon State University, for compilation of research materials; to librarians at the National Reference Center for Bioethics Literature, Georgetown University, and at The Hastings Center for research assistance; to many religious thinkers who provided time for interviews and provided research materials; and to Lois Summers for assistance in manuscript preparation.

RELIGION AND HUMAN CLONING: AN HISTORICAL OVERVIEW

It is possible to identify four overlapping time frames in which theologians and religious thinkers have engaged the scientific prospects and ethics of human cloning. The first phase of consideration occurred in the mid-1960s. This early discussion was shaped by a context of expanded choices and control of reproduction (for example, availability of the birth control pill), the prospects of alternative, technologically assisted reproduction (for example, in vitro fertilization, or IVF), and advocacy by prominent biologists and geneticists of cloning “preferred”

genotypes to avoid overloading the human gene pool with deleterious genes and thereby placing the survival of the human species at risk.

Prominent theologians engaged in these initial discussions of genetic manipulation and human cloning included Charles Curran, Bernard Häring, Richard McCormick, and Karl Rahner within Roman Catholicism and Protestants Joseph Fletcher and Paul Ramsey. The latter two staked out diametrically opposed positions and envisioned a world of human cloning that is remarkably prescient given the state of current discussion.

Fletcher advocated expansion of human freedom (autonomy) and control over human reproduction. He portrayed human cloning as one among a variety of present and prospective reproductive options that could be ethically justified under circumstances of overriding societal benefit. Indeed, for Fletcher, human cloning was a preferable method of reproduction relative to the "genetic roulette" of sexual reproduction: Laboratory reproduction was "radically human" because it was deliberate, designed, chosen, and willed [9–12].

By contrast, Paul Ramsey portrayed cloning as a "borderline," or moral boundary, for medicine and society that could be crossed only at risk of compromise to humanity and to procreation. He identified three "horizontal" (person-person) and two "vertical" (person-God) border-crossings of cloning: (1) Clonal reproduction would require dictated or managed breeding to serve the scientific ends of a controlled gene pool. (2) Cloning would involve non-therapeutic experimentation on the unborn. (3) Cloning would assault the meaning of parenthood by transforming "procreation" into "reproduction" and by severing the unitive and the procreative ends of human sexual expression. Theologically, cloning represented (4) the sins of pride or hubris and (5) of self-creation in which human beings aspire to become a man-God [27, 28]. The legacy of Ramsey has been especially noticeable in post-Dolly theological reflection [36].

A second distinctive era began in 1978, which was notable for two events, the birth of the first IVF baby, Louise Brown, and the publication of David Rorvik's *In His Image*, an account alleging the creation of the first human clone [30]. While Christian theologians concentrated on the ethical issues raised by IVF, Jewish scholars such as Seymour Siegel and Fred Rosner directed attention to human cloning and were neither as supportive as Fletcher nor as indicting as Ramsey. They instead expressed a need for more extensive discussion of the topic within the Jewish community.

This period also witnessed the beginning of formal ecclesiastical involvement with questions of genetic manipulation. In 1977, the United Church of Christ produced a study booklet on "Genetic Manipulation" that appears to be the earliest reference among Protestant denominational literature to human cloning [19]. It provided a general overview of the science and ethics of human cloning, while stopping short of rendering any specific theological verdict. Protestant-organized bodies, such as the World Council of Churches (1975, 1982, 1989) and the National Council of Churches of Christ (1980, 1983, 1986), as well as some individual denominations, issued resolutions or position statements giving cautious endorsement to genetic

interventions for therapeutic purposes. In addition, concerns expressed in 1979 by Jewish, Protestant, and Roman Catholic leaders about genetic engineering led President Jimmy Carter to request an examination of the scientific, ethical, and social issues of gene splicing by the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research.

The blastomere separation of human embryos at George Washington University in 1993 initiated a third era of religious discussion. The Roman Catholic tradition expressed vigorous opposition, with a Vatican editorial denouncing the research as "intrinsically perverse." Catholic moral theologians invoked norms of individuality, dignity, and wholeness to assess the ethics of the study [20, 21, 24, 32]. Conservative Protestant scholars held the research contravened basic notions of personhood, such as freedom, the sanctity of life, and the image of God. Other Protestant scholars recognized potential medical benefits from the research and advocated regulation rather than prohibition.

The fourth and most recent stage of religious discussion has come in the wake of the successful cloning of "Dolly" by Scottish researchers. Roman Catholic and conservative Protestant discussion has reiterated past opposition and warnings. Writing in the *Christian Century*, for example, Protestant theologian Allen Verhey has drawn on the arguments against human cloning initially voiced by Paul Ramsey and concluded that an account of the good life in a family is "inhospitable" to cloning [36, 38].

However, some Protestant thinkers, reflecting on the meaning of human partnership with ongoing divine creative activity, have expressed qualified support for cloning research and human cloning. Jewish and Islamic thinkers have encouraged continuing laboratory research on animal and human cloning, while expressing deep moral reservations about transfer of a cloned human embryo to a womb for purposes of gestation and birth. The testimony presented to NBAC in public hearings on March 13 and 14, 1997, provides the most considered statements of theological examination in this renewed discussion of the ethics of cloning research and its implications for human cloning.

Several conclusions can be drawn from this brief historical overview:

> There is a sustained theological engagement with the issue of cloning that anticipates and illuminates much contemporary discussion.
>
> There is no monolithic religious perspective on human cloning. Theological and ecclesiastical positions exhibit the pluralism characteristic of American religiosity.
>
> Despite changes in scientific research and technical capability, the *values* that underlie religious concerns about human cloning have displayed durability and staying power and have informed public consciousness and debate.

The religious discussion no longer is limited to professional theologians. It has expanded to encompass other professionals, including scientists, and other faith traditions, as well as education of religious adherents. Religious traditions have gradually aspired to be informed communities of moral discourse on issues of reproductive and genetic technologies.

THEMES IN THEOLOGICAL BIOETHICS

Theological discourse about human cloning has adopted either of two methods (and often both) of practical reasoning [2]. A first approach relies on a form of moral *casuistry*: It examines the extent to which human cloning is relevantly continuous with already "familiar" ethical contexts and issues. For example, a theological discussion may draw attention to the occurrence of "natural" clones, i.e., identical twins, and proceed to inquire in what respects laboratory-created clones are morally or theologically similar to or different from this already accepted social context for raising children. Casuistical argumentation presupposes the validity of the formal principle of justice (treat similar cases similarly); the central question in an ethical assessment will be the interpretation of human cloning as similar or dissimilar to certain social structures or medical practices already valued or criticized by society and the faith tradition. Lacking direct revelation on human cloning in sacred texts, casuistical and analogical reasoning has been a characteristic part of religious argumentation. The significant point is that conclusions about human cloning are influenced in large measure by the framing ethical context.

A second, and often complementary, mode of practical reasoning involves application of the moral and anthropological *norms* of the faith tradition to generate an ethical assessment of human cloning. For example, perhaps the most common norm of western theological anthropology invoked in the discussion of human cloning is that human beings are created in the "image of God" (*imago Dei*). This concept, which is very rich in ethical content, is then applied by methods of religious reasoning to provide a perspective or conclusion on human cloning in general, or the theological and moral status of any given clone (the status, for example, of a clone as an ensouled entity with full claims as a person).

This section will examine the principal theological themes in the western faith traditions that emerge in both the casuistical and normative modes of practical reasoning and analysis. It will begin with the casuistical approach, which seeks to identify the ethical contexts deemed relevantly similar to human cloning so as to warrant methods of analogical reasoning.

Casuistical Analysis

Family and Procreation

The family has been invoked as the prime social institution, and in some traditions, a divinely ordained institution for the bearing and nurturing of children. Within Roman Catholic moral teaching, procreation *and* education of offspring is a principle of natural law. Paul

Ramsey's opposition to human cloning stemmed in part from a view that Christians perform their primary responsibility to future generations through procreation and care for children. Jewish and Islamic law each impose fundamental duties and responsibilities through spousal, parenting, and familial relationships and through intergenerational ties.

The question of human cloning is thus theologically approached not from the secular standpoint of personal rights and individual autonomy, but rather from a framing context of familial relationships and responsibilities that society already values. The casuistical concern is the extent to which this relational and moral context can accommodate such cloning possibilities as a "replacement" child, laboratory twinning in place of natural twinning, or children with a genetic grandfather but no genetic father.

Core moral criteria for faith traditions in addressing these prospects include the impact of human cloning on the integrity of the family, the nature of parenthood, the role of marital sexuality and procreation, and the identity of a child. As noted above, in the wake of the recent cloning of "Dolly," Allen Verhey has appealed to the concept of a "good life in a family" to reject the prospects of human cloning. Verhey maintains that the primary justifications for human cloning—appeals to the principle of freedom and the principle of utility—are necessary but insufficient guidelines for the moral life of a family. In particular, Verhey focuses his critique on the potential disruption of the parent-child relationship: Human cloning risks transforming children into "products" of technological achievement rather than "gifts" created in love [36].

The stability of family is not a sufficient moral perspective by which to evaluate human cloning, but it is a necessary consideration within a religious framework. Islamic thought, for example, affirms that, since the family is intrinsic to a well-functioning society, cloning procedures that separate the spiritual and moral relations of spouses, and those of parents and children, may undermine the foundation for human community in general [31]. It is not a compelling counterargument to contend that social realities of familial life and relationships do not match theological idealism, for the moral and policy question in part is whether society should deliberately support alternative modes of reproduction outside marital love and procreation.

Reproductive Technologies

A second casuistical context that shapes religious responses to human cloning is the increasing acceptability and availability of various forms of reproductive technology. The widespread use of such procedures indicates that even if conjugal relations are a preferred setting for human procreation, it can be ethically acceptable to have recourse to methods of donor insemination or in vitro fertilization within or outside of a marital relationship. Joseph Fletcher argued that human cloning should be viewed as simply another option in a spectrum of asexual reproduction tailored to an expanding menu of human reproductive rights and choice. Given that society has already accepted donor insemination, egg donations, in vitro fertilization, contract pregnancy, embryo transfers, and so forth, the question must be asked whether and how cloning is unique or distinctive from these other practices.

This question is relevant even if, as in the case of the Roman Catholic tradition, none of the above practices is considered morally licit. In her testimony to NBAC, Prof. Lisa Cahill suggested a radical discontinuity between current reproductive technologies and cloning, using the language of "genuine revolution" to refer to human cloning [1]. The revolutionary impact of human cloning needs explication, however, to warrant drawing a moral and policy line between current reproductive technologies and prospective cloning. By contrast, Rabbi Elliot Dorff and Rabbi Moshe Tendler assimilated cloning within current medical practices, suggesting that human cloning was morally "easier" for the Jewish tradition than donor insemination or egg donation, because it would not raise issues of consanguineous relationships or "non-therapeutic" reproductive techniques [6, 34]. Prof. Abdulaziz Sachedina's identification of a consensus in Islamic scholarship on therapeutic uses of cloning also presumes an important continuity between human cloning and such procedures as in vitro fertilization [31].

The question of the moral uniqueness of cloning inevitably imposes itself on religious traditions. Theologian Roger L. Shinn has put the religious dilemma this way: "I know of no way of drawing a line and saying: thus far, scientific direction and control are beneficial; beyond this line they become destructive manipulation" [33]. Absent a complete prohibition on reproductive technology, any moral or policy line-drawing will seem arbitrary unless a distinctive feature of human cloning can be identified.

Nonetheless, there are reasons why faith traditions would resist treating human cloning as continuous with reproductive technologies for *policy* purposes. The latter is unregulated and relies on good-faith compliance with professionally developed guidelines for ethical practice. There is, however, no current mechanism of public oversight or accountability. Secondly, the political language of reproductive technology is that of "choice" and "rights," whereas religious traditions more commonly invoke an ethic of "duty" or "responsibility" in the context of procreation and parenting.

Research and Therapy

A third moral context invoked by theological bioethics concerns a distinction between non-therapeutic and therapeutic research. A principal objection to human cloning articulated by Ramsey, and reiterated by many subsequent theologians, is that human cloning will inevitably involve non-therapeutic research on the unborn without valid consent. The current inefficiency of mammalian cloning technology (the production of Dolly was the only technical success in a research project involving 278 sheep embryos) has suggested to religious thinkers that cloning of human embryos for research or for transfer and gestation will result in morally significant loss of potential human life. This is of particular concern for the Roman Catholic tradition, given its teaching that the preimplantation human embryo is entitled to full moral respect and dignity. In arguing against blastomere separation, for example, Richard McCormick claims that less than full respect for the human pre-embryo as potential human life will lead to diminished respect for all pre-nascent life [20]. While Protestant theologians such as Ronald Cole-Turner see no theological

difference between a cloned and an uncloned human embryo, they express substantial reservations about the likelihood of embryo loss due to technical inefficiency [3].

A second research issue, presented to NBAC by Prof. Gilbert Meilaender [22], is that progress in biomedical research is an "option," not an obligation for society to pursue. This echoes positions formulated by Ramsey and philosopher Hans Jonas; such a claim in part is rooted in a view that non-infliction of harm (non-maleficence) has moral priority over promotion of benefits (beneficence) in human subjects research. On such an account, claims that human cloning research possesses therapeutic intent will be inadequate, for some faith traditions will understand the certain loss of life of human embryos as a real harm and not merely a symbolic or speculative harm. Thus, researchers will be required to make a case not only that their research may produce benefits (such as the development of medicinal products), and not only that these benefits will outweigh the harms, but that serious efforts have been undertaken to minimize the harms. The moral burden of proof on researchers will be even heavier for proposals to engage in research on human cloning with the objective of transfer of a clone for gestation and birth.

Jewish and Islamic traditions are more favorably disposed to cloning research with therapeutic objectives, such as alleviation of infertility. Jewish law does not attribute full moral status to the human embryo, while Islamic scholarship is divided on the timing of ensoulment. Thus, the loss of human embryonic life through cloning research does not carry the same status of "harm." Moreover, Jewish law permits almost any action (except for breaches of three commandments) to be performed for the purpose of saving life. In the case of cloning research, this may encompass new methods to remedy or avoid serious genetic disease, but would preclude research directed at reproducing a clone solely for organ harvesting.

On the question of human cloning research, the western religious traditions place the burden of proof on the side of biomedical research. Research may be permitted, but is not required, and the prospect of therapy must meet a standard of probability of specific benefit and assurance of minimization of harm, not a standard of possibility of speculative benefit, and dismissal of symbolic harm. Additional questions must be addressed regarding the justification of research on the preimplantation embryo and the distribution of the benefits and harms of cloning research; the latter concern has been forcefully expressed by minority religious communities (see section 3). If biomedical science were unable to meet the burden of moral proof, which is rooted in the basic principles of respect, beneficence, and justice, the proposed pharmacological and medical benefits of cloning research may have to be forgone, and it would be extremely difficult to justify support for research to transfer a human clone into a womb for birth.

Genetic Interventions

The prospect of human cloning as therapeutic research suggests a final moral context: Cloning research may be viewed as relevantly similar to other forms of genetic interventions already in place in medicine. This casuistical context not only provides justification for cloning research, but also important procedural and substantive limitations. Unlike reproductive

technology, for example, gene therapy is subject to stringent public regulation and oversight. There is moreover a general consensus that some defensible lines can be drawn with respect to genetic interventions, such as between somatic cell and germ-line therapy and between therapy and enhancement. Restrictions on human cloning research might then follow a model of prohibition on germ-line interventions, as recommended to NBAC by Rabbi Tendler [34]. A third limit is that benefits be directed toward individuals rather than society. That is, rather than using cloning procedures for the general improvement of the human species, as proposed by Fletcher and other early religious and scientific proponents, an ethical and regulatory model that followed the social precedent of accepted genetic manipulations would focus on therapeutic manipulations for an individual.

It is difficult, however, to subsume human cloning entirely under the moral casuistry of genetic therapy. Genetic screening for abnormalities may be performed on the early embryo through diagnosis of undifferentiated cells, but this cannot be considered therapeutic research on the embryo. Germ-line interventions affect the genetic characteristics of a person of a future generation. They do not directly determine whether that person will exist, as cloning of a person would.

Normative Analysis

Religious traditions and communities have articulated a variety of ethical norms to address the wide range of practical issues and problems that persons encounter in moral life. These norms may be derived from sacred writings and their interpretation, ongoing historical reflection within a religious tradition, and personal experience, among other sources, and can be applied to the wide array of moral choices persons confront from the beginnings to the endings of life. This section presents certain theological norms, themes, and values that may be applied through practical reasoning to the question of human cloning within religious communities, and that supplement the analogical and casuistical methods delineated above.

Personhood and the Image of God

It has been argued that the most significant issue forced upon society by genetic science is an understanding of normative humanity [15]. The same question is encountered in theological discourse on human cloning. Lutheran theologian Philip Hefner argues that cloning is a "revelation of the human situation.... In cloning, we are, in fact, addressing ourselves, and it is about ourselves that we have the greatest questions" [17].

The question of personhood (and human distinctiveness) is commonly described and explained in the western faith traditions with reference to the theological theme of the image of God (*imago Dei*). Normative humanity is theologically rooted in the creation of human beings in the image of God (*Genesis* 1:27-28). Interpretations of the moral meaning of the *imago Dei* depend in part on prior convictions about the nature of God and those characteristics of God human beings are

believed to image. Nevertheless, it is possible to identify several implications of significance to the questions of human cloning:

> Human beings are bestowed with the gift of freedom and moral agency. Moral agency is inherent in the human self and creates logical and correlative moral responsibilities. The logical correlation encompasses respect for the equal freedom and agency of other persons. The moral correlation of personal freedom is personal responsibility for actions before one's conscience, others, and ultimately before God.
>
> Human beings are created in God's image, but they are not God. They are finite and fallible, with limited capacities to predict and direct the course of actions they initiate, or to assess accurately the outcomes of these actions.
>
> A fundamental equality is inherent in the human person. This equality transcends differentiation between persons made on the basis of gender, race, class, ethnicity, etc.
>
> Human beings are relational and social creatures. They are created in and for relationship with God, for community with other persons, and with creation.
>
> The image of God is reflected in human diversity, involving but not limited to gender diversity. The differentiation of the sexes provides a divine warrant for procreation and the sacredness of sexuality.
>
> Human beings are embodied selves. The person is revealed and experienced through the body and not merely as an intellectual or spiritual essence, or a disembodied mind or will.
>
> Human beings bear the image of God through the exercise of their creative capacities and potential. This includes creative ways of exercising "dominion" over the natural world.

Each of these features of the *imago Dei* helps explain and define religious responses to cloning. Religious concerns about the disruption or confusion of relationships, diminished diversity, the primacy of procreation, and the significance of the body can be rooted in this theological concept. Moreover, reproductive technology and genetic interventions that culminate in cloning may be interpreted as a responsible exercise of human (and divine) creativity.

The divine commands given to humanity subsequent to their creation in God's image are also invoked in religious discourse on human cloning. Human beings are obligated to multiply through the earth. This provides a warrant not only for sexual love and procreation as good, but also, on some theological perspectives, for an intrinsic connection between the "unitive" and "procreative" purposes of sexuality.

How human dominion over nature should be carried out can be interpreted in at least three ways of significance for cloning. One notion is an ethic of stewardship in which human beings are

entrusted with administrative responsibility for creation. Human stewardship involves caring for and cultivating creation after the manner of a gardener. The stewardship ethic accepts the givenness of nature as a good to be maintained and preserved.

A second model, particularly significant in Jewish and Islamic discourse, suggests a "partnership" of human beings with God in caring for and improving upon creation. "...as participants in the act of creating with God, human beings can actively engage in furthering the overall well-being of humanity by intervening in the works of nature, including the early stages of embryonic development, to improve human health" [31]. The natural world in this view is inherently malleable, and can be shaped in several different forms in service of divine and human goals. This model holds the potential for seeing cloning research, and perhaps some forms of human cloning, as using human creative potential for good.

A third understanding is that of human beings as "created co-creators." This claim recognizes that human beings are created beings, dependent on God, and finite and fallible in their existence. Simultaneously, human beings assume a role of co-creator to envision and implement knowledge for the betterment of humanity and the world. Human beings are called to "play human" [26] through their freedom and responsibility in creating an essentially open human future. Reproductive and genetic technology, as well as human cloning, can be one particular expression of responsible created co-creatorship.

Finally, although creation is "good" and human beings are "very good," over the course of history, humans have displayed an irremediable propensity to use their divinely authorized dominion for unauthorized domination, to violate their covenant of partnership with God, and to create after their own image rather than the divine image. The person created in the image of God is nonetheless marked by sin. All human activities are pervasively imperfect. The prospect that humans can and do choose evil rather than good means caution is a moral necessity [14]. However, human imperfection is not necessarily a warrant for halting technological advances [17], although it should inform a posture of modesty regarding human aspirations.

This analysis contends that issues of human cloning inevitably beg the question about the nature of the person, and within the western religious traditions, the fundamental concept of theological anthropology put forward to describe and explain human personhood and distinctiveness is the image of God. The question is unavoidable even if the religious content is not shared.

Procreation and Parenthood

In the initial phase of theological assessments of cloning, Paul Ramsey argued that the covenant of marriage included the goods of sexual love and procreation. These were divinely ordained and intrinsically related: Human beings had no permission to sever what God had joined together. On this basis, Ramsey, Bernard Häring, Richard McCormick, and other theologians objected to cloning as part of a panoply of envisioned forms of reproductive technology. Their

arguments claimed that such technologies separate the unitive and procreative ends of human sexuality and transform "procreation" (which implicitly places humans in a role of co-creator) into "reproduction." The most authoritative statement of this position was issued by the Vatican in 1987 in its *Instruction on Respect for Human Life* (*Donum Vitae)*, which contained a prohibition on human cloning either as a scientific outcome or technical proposal: "Attempts or hypotheses for obtaining a human being without any connection with sexuality through 'twin fission,' cloning, or parthenogenesis are to be considered contrary to the moral law, since they are in opposition to the dignity both of human procreation and of the conjugal union" [5].

Protestant scholars have offered a similar critique through appeals to fundamental theological tenets that distinguish between "begetting" (procreating) and "making" (reproducing). The Nicene Creed of early Christianity affirmed that Jesus, as the authentic image of God and the normative exemplar of personhood, is "begotten, not made" of God. The theological interpretation of "begetting" emphasizes likeness, identity, equality, and of the parent's very being. By contrast, "making" refers to unlikeness, alienation, subordination, and of the parent's will as a project.

Oliver O'Donovan, an Anglican theologian, has drawn out the implications of this distinction for human cloning. O'Donovan portrays human cloning as the culmination of scientific or technical "making" in human reproduction: "...the development of cloning techniques...will be a demonstration, if it occurs, that mankind does have the awesome technical power to exchange the humanity which God has given him for something else, to treat natural humanity itself as a raw material for constructing a form of life that is *not* natural humanity but is an artificial development *out of* humanity" [25]. Thus, the use of scientific capacity comes at the cost of an artificial, diminished humanity. This ruptures the fundamental relational ties of likeness, identity, and equality.

This distinction further illuminates two meanings of "making" embedded in the title of Ramsey's *Fabricated Man*. A child born through cloning is designed and manufactured as a *product*, rather than welcomed as a gift. Moreover, the *process* is itself unauthentic, or "fabricated," with respect to what it means to be human.

The question is whether this position literally throws the baby out with the technology, either through current forms of reproductive technology or proposed methods of cloning. If no distinction is permitted between unitive and procreative sexuality, or between begetting and making, then it becomes difficult to justify contraception or technically assisted conception. Rev. Moraczewski has argued that, within the Roman Catholic context, the threshold of moral acceptability was violated with the birth of the first test-tube baby in 1978 [24], while from a conservative Protestant perspective, Prof. Meilaender offered a modified form of this view in his remarks before the NBAC, commenting that he "would have got off the train" of reproductive technology long before it arrived at the cloning station [22]. Put another way, if, as is the case with most Christian denominations, there is qualified acceptance of DI, IVF, etc., drawing a line

against cloning is likely to appear arbitrary with respect to the theological values underlying procreation and parenthood.

Science and Technology

Media reports have portrayed a classical confrontation between science and religion over the prospects of human cloning. This is misleading, insofar as not all arguments against cloning are religious, and not all religious arguments oppose cloning. Indeed, the issues instead offer the possibility for substantive and sustained dialogue between leading scientists and theologians. Probing the intersections of ethics, science, and theology can offer mutual enrichment: Scientists are informed as to how research in genetics and biology inevitably broaches theological questions, while theologians are critically challenged as to whether and how to accommodate religious convictions to new scientific knowledge [14].

The quest for scientific knowledge per se is not considered theologically threatening. Islamic scholars, for example, emphasize that all scientific discovery is ultimately a revelation of the divinely ordained creation. Scientific knowledge is thereby a symbol or sign of God's creation [16]. This perspective is embedded in the comments of the respected Shi'ite jurist (Sheikh Fadlallah) that recent cloning discoveries occurred "because God allowed it" [8], and those of Prof. Sachedina that cloning may be a divinely given opportunity for human moral training and maturity [31]. Similar assessments of the legitimacy of scientific inquiry appear in Catholic and Protestant traditions. Invoking a Calvinist claim that the world is a theater of God's glory, one ecclesiastical statement indicates that "in the sciences, the human does indeed receive glimpses of God's theater" [29].

These prospects for dialogue and theoretical convergence can dissipate when examining specific scientific applications. Scientific descriptions of the world do not supply theological or normative prescriptions for acting in the world. The faith traditions have insisted that two principal issues—who controls technological developments, and the ends or purposes of technology—are ethical rather than technical questions. This can support a sharp distinction between endorsement of the scientific quest for knowledge and critique of applications of scientific discoveries in the social, political, and clinical worlds. This theological critique may assume several forms in the context of cloning:

> The reduction of nature, animals, the human pre-embryo, or persons to merely an object for scientific manipulation. The concern behind objectification is a loss or diminished sense of awe and wonder at the mystery and meaning of life. Awe is a foundational religious sentiment. It has also been described by Einstein as the source of true science [7]. The loss of awe and wonder then can reflect a deformed scientific and religious sensibility. Moreover, theological concern has been raised about the difficulty of de-limiting diminished awe to the laboratory setting. Cloning may be perceived to assault the dignity of those involved in the process of human cloning as much as it does the person who results from cloning [23].

Theological criticism has also been directed toward the "technological imperative." Two variations of this imperative have been invoked: "If we have the technical capacity to clone, we *should* pursue this research"; "If we have the technical capacity, we *will* inevitably pursue this research." The theological sentiment expressed in both cases is a concern about loss of control, about either the ethical debate or about the scientific pursuit. It may in addition reflect theological suspicion not of science, but of scientists, particularly if research is conducted without adequate public monitoring and accountability. In the Protestant traditions particularly, this suspicion is supported or reinforced by a general claim about the impact of human sin from which scientists as persons are not immune. This concern can be met to some extent by establishing appropriate procedural review.

The theological context of cloning also elicits disputes over the relationship of knowledge and power. Joseph Fletcher used the language of "rational control" to warrant cloning, but this in essence meant harnessing the power of the modern sciences to transform nature and human nature. On more direct theological grounds, the Jewish tradition supports technological and medical interventions in response to the divine mandate to master the earth in service to humanity.

Other theologians have challenged Fletcher's unbridled optimism about beneficial applications of scientific knowledge by focusing on the ways that power can be a form of oppression rather than liberation. The comments of Anglican scholar C.S. Lewis have been reiterated by contemporary theologians in the context of both genetics and cloning: "If any one age really attains, by eugenics and scientific education, the power to make its descendants what it pleases, all men who live after it are the patients of that power. . . . Each new power won by man is a power over man as well" [18]. This claim does not suggest society has the luxury of choice between use or abuse of cloning. Rather, the abuse is itself embedded in and expressed by the use.

Playing God

Much of the preceding analysis reflects theological ambivalence and criticism about biomedicine that is often expressed in the slogan of "playing God." This slogan is invoked as a moral stop sign to scientific research and medical practice on the basis of some or all of the following attributes:

Human beings should not probe the secrets or mysteries of life. Continued scientific pursuit to reveal these secrets can create a "God of the gaps" theology, in which "God" is reduced to a symbol that simply fills in for those questions modern science has not yet answered [37].

Human beings do not have the knowledge, especially knowledge of outcomes, attributed to divine omniscience.

Human beings do not have the power to control the outcomes of actions or processes that is a mark of divine omnipotence.

Human beings have no authority to make decisions regarding the beginnings or endings of life, which is reserved to divine sovereignty.

Human beings are fallible and display a propensity to evaluate actions according to self-interest rather than by the self-giving quality of divine love.

In these respects, the appeal to "playing God" serves to remind human beings of their finitude and fallibility. By not recognizing personal limits and human constraints on scientific aspirations, persons enact the Promethean presumption of pride or hubris. In the initial theological discussions of human cloning, Ramsey summarized his objections by stating: "Men ought not to play God before they learn to be men, and after they have learned to be men, they will not play God" [27, p. 138].

Even within the theological communities, however, the prohibition against playing God may be disputed or not viewed as a sufficient sanction against cloning. Allen Verhey has argued that the prohibition is simply too indiscriminate in its judgments to be of ethical use, and neglects moral invitations to play God, particularly in the realm of genetics [37]. Protestant scholar Ted Peters agrees with Ramsey that human beings are not called to play God, but argues that this does not by itself define what is necessary for us to be human. Hence, we are responsible for using our creativity and freedom (features of the *imago Dei*) to forge a destiny more consonant with human dignity and beneficence. In "playing human," according to Peters, there is no theological reason to leave human nature unchanged, nor any theological principle that is necessarily violated by human cloning [26].

Arguments against cloning that invoke the language of "playing God" are not always theological, and they are seldom sound or sufficient. The slogan is often presented as the conclusion of an argument whose premises are either unexamined or unidentified. At the very least, the theological and moral concern behind the prohibition needs explication. The language of "playing God" cannot by itself carry the full weight of an ethical or policy prohibition on human cloning.

Human Destiny and Eschatology

Theological views of medicine and medical interventions grounded in themes of creation, such as those identified above, may tend to be more conservative with respect to reproductive or genetic technologies, not to mention cloning, because of the divine evaluation of creation and persons as *imago Dei*, as "good." The role of medicine is then conceived to be to restore disordered biological organisms to their initial goodness. By contrast, theological positions that focus on human destiny rather than human nature, on "eschatology" in theological language rather

than "creation," tend to be much more supportive of an array of reproductive and genetic interventions as means for improvement or enhancement of the human condition.

The question of human destiny has been an underlying theme of the cloning debate from its inception. Scientific proponents such as Muller and Lederberg affirmed a pessimism about the survival of the species due to genetic overload. Cloning represented a prospective intervention to avoid this "genetic apocalypse" and promised a future of unlimited possibility. Paul Ramsey's theology of cloning likewise assumed an apocalyptic prognosis of human destiny, though very different in content: "Religious people have never denied, indeed they affirm, that God means to kill us all in the end, and in the end he is going to succeed" [27, p. 136]. However, the end of species survival did not, for Ramsey, justify the means of cloning. Survival is meaningful only if values of human dignity and freedom are respected.

The use of cloning to save the endangered species of human beings is no longer part of the debate, although cloning techniques have received some support to rescue endangered animal species or even endangered indigenous cultures. However, the general question of the extent to which human beings are shapers and creators of their personal and collective futures continues to be important. Discourse on destiny can be especially important in a liberal pluralistic society that is agnostic about the substantive telos of human life and society.

Some theologians in the cloning debate therefore tend to stress an openness to human nature, rooted in a creative *imago Dei* and a dynamic view of history, rather than a more rigid and static formulation of human nature and destiny. The theological and ethical interpretation of cloning then turns on the nature of human responsibility in the face of uncertain (and perhaps unforeseen) consequences.

Some Jewish thinkers affirm that the divine mandate of mastery empowers human beings with responsibility for shaping a malleable world using innovation and discovery. Responsibility for deleterious outcomes from human self-creativity falls not to humans but to God. The Jewish tradition affirms an optimism in the face of uncertainty about unanticipated consequences rooted in divine control and care; indeed, to be overly cautious to the point of moral paralysis may invite trouble. As one Orthodox rabbi has expressed it: "Human beings do the best that they can. If our best cost/benefit analysis says go ahead, we go ahead. 'G-d protects the simple' is a Talmudic principle that allows us to assume that when we do our best, G-d will take care of what we could not foresee or anticipate. If things do not work out, the theological question is G-d's to answer; not ours" [13, p. 132]. On this view, cloning may express moral responsibility insofar as it is directed to the service of God and humanity.

What is clear within Jewish thought is the critical importance of moral education of progeny who will live in the generations to come. One form of immortality discussed in biblical and rabbinic sources comes through the influence of parents (and others) on their children. The transmission of knowledge, skills, and the teaching and emulation of moral dispositions is an ongoing obligation that binds the generations together. Rabbi Tendler has emphasized the

importance of moral education as the best form of human control over cloning technology: "Are we good enough to handle this good technology? Of course we are, if we can set limits on it. And when we can train a generation of children not to murder or steal, we can prepare them not to use this technology to the detriment of mankind" [35].

An Islamic interpretation also assumes a malleability to the human self that allows for creative shaping of destiny. Islamic tradition describes two forms of creative processes. *Bari* refers to creation out of nothing and is reserved to the domain of God. *Khaliq* concerns creation from material already in existence, and the human mind is empowered by Allah to participate in *khaliq* as a co-creator [16, 31]. The ethics of cloning is then addressed by a distinction between theoretical research in science and practical application in society.

The Protestant Christian variation may emphasize the idea of *creatio continua*—divine creative activity is an ongoing process—coupled with the theme that persons are co-creators called to participate with God in shaping a better future. Indeed, destiny is so open and indefinite that the Christian may be a "co-explorer" with God in revealing new and unlimited possibilities through innovative technology [4]. This perspective on human destiny offers qualified support to human cloning, insofar as it is technically feasible and publicly supported.

Lest these theological accounts of human destiny seem to bless and anoint scientific progress, they are balanced within each of these traditions by recurring warnings, often in narrative form, about not crossing certain lines. The archetypal figure is that of Prometheus in Greek mythology; each theological tradition has its own Promethean analogue. The theological caveat is that creative initiative may be a form of rebellion of the created against the creator. The consequences of such rebellion are catastrophic havoc and perhaps destruction of the human creator, or of that which has been created. This lesson is as fundamental to religious narrative and mythology as it is to modern science fiction. The hard questions for theologies of human destiny are identifying what lines may not be crossed, where they are located, and whether human cloning is one such line.

Communities of Moral Discourse

In the March NBAC hearings, members of the commission repeatedly challenged the religious thinkers to explicate the relevance of their testimony for purposes of formulating public policy in a pluralistic society. This section discusses some substantive and procedural approaches discussed by theologians and religious writers with respect to policy on human cloning.

It is first important to recognize that religion in American culture already embodies pluralism (see Section Three for further illustrations). The religious perspectives on cloning are diverse in conclusion, modes of reasoning, and fundamental premises. There is no monolithic "religious" view on cloning (or most ethical issues in biomedicine). However, this has not been seen as an impassible barrier by the faith traditions; discourse across religious traditions on many

contested ethical issues in biomedicine is common and expanding, and this can provide important models for public discourse between persons who share the common bond of citizenship.

It follows from this observation that religious discourse on the ethics and policy of cloning should not be marginalized because it may invoke values or assumptions that are not part of a social consensus or appeal to premises that are not generally shared. While public policy must invoke publicly accessible reasons to support its conclusions, it is not evident that scientific, professional, philosophical, economic, or legal reasons considered or proposed as grounds for policy are themselves independent of assumptions about the human good. Prof. Meilaender's testimony to NBAC emphasized that it is an "illusion" to understand any constructive policy recommendation as free of value presuppositions [22]. Those presuppositions themselves may not meet the standard of publicly "accessible," "shared," or "persuasive" reasons. Thus, religious values or reasons should not necessarily be held to a higher standard of public relevance than other forms of reasons.

Religious communities have a self-understanding as "communities of moral discourse." That is, they are a locus for moral and policy education for believers (and often nonbelievers) who are also citizens, and this education often addresses very contested issues in the society. Given general public ambivalence about biotechnology—and in particular trepidations about cloning research, its processes, and its products—religious communities can be critical venues for informing and eliciting public values on human cloning.

The traditions of religious reflection see in the question of human cloning an invitation to sustained and substantive public discourse about the common good. It would be a missed opportunity were public policy to default to an ethics of autonomy, the politics of procedure, or the crafting of compromise among special, vested interest groups. The principle of autonomy or self-determination is a necessary principle for the moral life of persons and the life of the polis. It needs to be supplemented, however, and situated within a richer moral context of human interdependency and solidarity, care for the vulnerable, and restraint on private interest.

As all the religious thinkers before NBAC testified, the prospect of human cloning strikes at very deep issues of human identity and community. Policy recommendations should not presume consensus on the meaning of human personhood. Instead, the policy process should seek to identify points of common ground and determine if conflicts of positions are rooted in disputes over scientific facts, or over philosophical or theological values. Factual disparities can presumably be resolved through the provision of more complete or reliable information. Value pluralism may not be beyond resolution. Some important values may not be absolute, core, or "bottom-line" values, but rather are presumptive values that can give way in the face of conflicting, weightier values, one of which may be the capacity to sustain public discourse in the face of reasoned disagreement. The policy process must be as cognizant of the fundamental questions asked by religious traditions as of the fundamental values invoked by these traditions in support of certain conclusions.

This is but a specific exemplification of a theme common in the testimony before NBAC of the religious thinkers, namely, that procedural models beg substantive ethical (and theological) questions. A policy of regulatory control and/or voluntary adoption of professional guidelines, e.g., would be necessary but still insufficient. It is also critical to examine the character, integrity, and virtues embodied by persons permitted to control the cloning process. This can be supplemented by the proposal of Rabbi Tendler of a curricular requirement for the teaching of the ethics of professional and scientific integrity to medical students and research scientists [34]. Rabbi Dorff, meanwhile, encouraged reliance on current regulatory mechanisms, such as institutional review boards and institutional animal care and use committees, regarding the protection of human and animal subjects [6]. The human capacity to use technology with justice and beneficence in the service of the common good makes public discourse on cloning possible, while the capacity to abuse cloning technology for self-interested purposes makes public oversight and accountability necessary.

RELIGIOUS TRADITIONS

This section contains more specific information on the views of distinctive religious traditions regarding ethical questions in human cloning research. With very few exceptions, the religious traditions discussed here have yet to develop specific theological or denominational positions on the moral or public policy aspects of human cloning. The theological literature examined and the religious thinkers interviewed for this section characteristically employ analogical reasoning in discussing cloning, invoking values or historical experience used to support positions on issues deemed relevantly similar to human cloning.

In considering the implications of these religious positions for public policy on human cloning, it may be useful to adopt the metaphor of a traffic semaphore. Under this metaphor, traditions may be analyzed and compared under several possibilities with respect to society's assessment of the process of cloning research and the product of cloning a human being:

> "Red" indicates a full stop to research and/or cloning. The policy analogue is a permanent moratorium or prohibition.
>
> "Flashing red" indicates the need to stop to evaluate risks before proceeding. The policy analogue is a temporary moratorium until important scientific and social questions are addressed.
>
> "Amber" indicates the need to proceed with caution and care, slowing the pace of or stopping research as necessary. The policy analogue is a regulatory model coupled with the adoption of guidelines by relevant professional bodies.
>
> "Green" indicates permission for cloning research and/or cloning on the assumption that other stakeholders in human cloning will conform to norms of professional and social

responsibility. The policy analogue is the adoption of guidelines by relevant professional bodies.

Given the diversity of American religiosity, an inherent risk of the following analysis is oversimplification for the sake of generalizations. The discussion nonetheless should indicate important questions raised by religious communities and thinkers about science, technology, and human cloning.

African American Churches

Faith traditions in the African American religious community comprise approximately 11% of religious adherents in the United States. The African American churches, stemming from Methodist and Baptist traditions, locate themselves within the "black Christian tradition." This tradition is united by commitment to a fundamental principle of human equality before God, often phrased as "the parenthood of God and the kinship of all peoples." The principle offers a theological basis for criticism of racism and sexism and necessitates social reform through non-violent measures and religious witness.

Social Context. The black Christian tradition understands the history of research abuses of African Americans at the hands of medicine, such as the Tuskegee experiments, as a violation of the fundamental principle of human equality. Moreover, due to ongoing racism in society and medicine, it maintains the prospects for further exploitation of African Americans through cloning research are substantial. "The history of scientific abuse and medical neglect carries with it a legacy that is permanently imprinted upon...the collective consciousness" of African Americans (Secundy).

Given this history of past abuses, society should assume a posture of greater vigilance for minority communities. Preston N. Williams, a participant in the 1970s discussion of cloning, argues both that public oversight is necessary with respect to cloning, and that it also must be "race conscious," lest the African American community experience further marginalization within biomedical science and society (Williams). This requires emendations to current codes of research ethics and institutional review policies, insofar as they do not address race relations and issues of power in the research setting. Present procedures of informed consent are not deemed morally sufficient for cloning research.

Accountability and Education. While technology is not morally objectionable per se, applications of technology within this social context can be morally indefensible. Of particular concern are entrepreneurial efforts in biomedicine that are motivated by private interest and supported by concerns for commercial profit and/or racism. At a minimum, strong regulations that build in public accountability must be developed by legislative bodies to protect vulnerable patients and families from coerced choices or economic inducements. In addition, the scientific research community should voluntarily adopt strict protocols and monitoring. Communal distrust of scientific and research institutions and suspicion of commercial endeavors also entails a more

comprehensive policy approach than oversight and accountability. Some African American writers stress that policymakers must learn a fundamental lesson from the community's distrust of organ procurement methods, and implement a major informational and educational campaign with respect to genetic, reproductive, and cloning technologies. While it is often difficult to enforce regulations or prohibitions, the lessons of the civil rights movement provide some confidence in an approach to human cloning that complements public accountability with public education.

Embryo Research and Therapy. African American churches affirm, along with elements of historical Christianity, that human life begins at conception. The use of human embryos for medical research is problematic, since it involves experimentation on living human embryos rather than embryonic material. In addition, the tradition is concerned about the procedures required for creating embryos and those used in discarding embryos. A minimal criterion of moral acceptability is therapeutic intent: Cloning of human cells, for example, should not be allowed to benefit any individual racial or ethnic group "outside of the context of a clearly identified, morally defensible, medically justifiable" condition that would benefit from such technology (Robinson).

Fairness. The tradition also raises questions about fairness and social priorities in resource allocation. The history of medical progress has often meant that African Americans assume the heaviest burdens and receive the least benefit for participation. Moreover, scientific energies and public monies used to support cloning could divert attention from diseases specific to the African American community or from poor health indices, such as high premature birth or infant mortality rates. The principle of human equality is violated when a new area of research investigation is opened up, while many within the African American community do not have access to basic health care.

African American churches do not have any objections to the use of reproductive technologies per se as a means of bringing children into the world. However, the churches' principle of equality is invoked to criticize selective access to reproductive technologies, particularly to the exclusion of African Americans. Rev. Geoffrey Ellis, president of the NAACP Interdenominational Coalition, contends that those with the technical capacity to clone "certainly will make more people like them. This certainly rules out more people like me" (Ellis). If financial resources dictate access to human cloning services, members of the black Christian tradition may experience further social marginalization. Human cloning may therefore perpetuate social stratification rather than affirm human equality.

Cloning Research: Flashing Red
Human Cloning: Red

Buddhism

The Buddhist Churches in America claim approximately 100,000 adherents. There are, in addition, numerous non-affiliated Buddhist temples, monasteries, and organizations. There is as yet no systematic consideration of cloning by Buddhist scholars, nor is there is any formal

teaching authority. This manifests the Buddha's warning to his followers that speculation about metaphysical issues was futile because the human problems of birth, old age, death, and sorrow remain regardless. However, basic Buddhist teachings present an ethic of responsibility, centered on the values of non-injury and the relief of suffering of sentient beings, compassion, the "no-self," the moral authority of intuition, and reincarnation. These values offer some elements of a Buddhist response to reproductive and genetic technologies, including cloning.

Buddhist teachings indicate that the Buddha (560-477 BCE) provided a four-fold decision-making method for his followers should they encounter unanticipated questions. The four steps involve recourse to (1) original Buddhist texts; (2) derivation of rules in "consonance" with the original texts; (3) the views of respected teachers; (4) the exercise of personal judgement, discretion, and opinion. Buddhist scholars have cited this method as a resource for Buddhists in addressing the issues of cloning, with a particular emphasis on the authoritative nature of personal intuition and opinion (Nakasone). By its nature, then, there is a notable diversity of views by Buddhists on cloning, rather than a Buddhist view.

Procreation and Reproduction. Buddhist scholars generally agree that the process by which children are born into the world makes no difference. "Individuals can begin their lives in many ways," including but not limited to human sexual generation. Cloning is thereby understood as an alternative method of generating new human life, in principle continuous with other methods (Keown). One Buddhist ethicist has supported use of reproductive technology, so long as it benefits the couple who wish to have a child and does not bring pain or suffering. However, some Buddhist scholars find in human cloning an impoverished approach to procreation. It marks a diminished creativity and diversity, analogous to the difference between the creativity, initiative, and investment that is required for an original painting and the mechanistic process required to reproduce the painting (Nolan).

Human Status and Enlightenment. The status of human being is critical within Buddhist thought, because it is the only ontological condition by which an entity can achieve "enlightenment" and liberation from a world marked by suffering. Buddhist scholars throughout history have reiterated that, due to *karma*, the chances of being born as a human being are rare and remote. Human life is a precious opportunity to escape from perpetual rebirth (*karma-samsara*) by following the teachings (*dharma*) of the Buddha.

In this respect, any form of human reproduction, sexual or asexual, that allows for the birth of a human being may be especially valuable. Buddhist tradition contains stories of "spontaneous generation." Buddhist scholar Damien Keown states that cloning, if it "is ever perfected in human beings, would show only that there are a variety of ways in which life can be generated. It would not cast doubt on whether the host from which the clone was taken, or the clone itself, were ontological individuals" (Keown, 90).

Some forms of Buddhism may endorse cloning because of the chance human life gives to achieve enlightenment. The Dalai Lama, the exiled leader of Tibetan Buddhism, was questioned

about his attitude towards the following hypothetical scenario: "[What] if at some future time...you could make by genetic engineering, with proteins and amino acids, or by engineering with chips and copper wires, an organism that had all of our good qualities and none of our bad ones,...?" The Dalai Lama indicated he would welcome such a technological development, because it would facilitate the process of rebirth and liberation.

Moral Development and Spiritual Priorities. Buddhist understandings that change is the nature of reality suggest that, in considering technological developments, the central questions concern how persons can accommodate change and how they can use change to expand their self-understanding and their understanding of humanity. Cloning may be an occasion for self-knowledge, which is a central feature to the experience of enlightenment. Nonetheless, the end of enlightenment as an end in itself may not, for some Buddhists, justify the use of any means of reproduction.

A different position on cloning can be supported by claims and stories in Buddhist texts. It is important in Buddhism for children to express generosity to their parents, especially the mother, for the risks of birth and nurture they assume in bringing a child into the world. Human cloning offers a way of reproduction that, if efficient, would diminish risk, and thus diminish the generosity and gratitude of the child.

Moreover, while cloning may preserve genetic identity, it cannot assist in what for Buddhists is most critical—the cultivation of spiritual identity. The problem of distorted priorities is illustrated in a famous narrative, the "Parable of the Mustard Seed." In the parable, a distraught woman sought out the Buddha, requesting that he restore life to her dead child. The Buddha indicated that a cure was simple: The woman needed to prepare tea from five or six grains of mustard seed. The Buddha stipulated, however, that the grains needed to come from a house not visited by death. The woman was unable to obtain a single grain, thus learning about the universal truth of death. This narrative supports Buddhist concerns with cloning research or human cloning due to the attention focused on bodily, material life to the neglect of cultivating discovery or the inner life of a person. This misguided priority is reflected in the statement of Gen Kelsang Tubpa, a Buddhist monk: "Cloning is just another example of man's belief that by manipulating the external environment he will create happiness for himself and freedom from suffering."

Some Buddhist scholars have raised objections to applications of cloning, particularly commercial or social agendas that may support cloning for reasons contrary to the interest of the clone. These agendas may include pressures on scientists for continual progress and discovery or for commercial gain from pharmaceuticals or organ harvesting. In this respect, there would be greater suspicion within Buddhism about private-sponsored cloning research without public oversight.

Sentience and Cloning Research. While cloning might be permissible under some understandings of Buddhism, the scientific research necessary to build up to cloning encounters difficulties. Part of the "Noble Eightfold Path" promulgated by the Buddha prohibits infliction of violence or harm

on *sentient* beings. This would seem to permit research on human pre-embryos, but the primacy Buddhism places on birth as a human being as a necessary condition of enlightenment can restrict such research. Buddhism does hold that a new being comes into existence shortly after fertilization. Moreover, especially where the research process is very inefficient and causes loss of life, both embryo research and animal research would be especially problematic. Any Buddhist account would ask of cloning research or human cloning: "How does this serve all sentient beings?"

Cloning Research: Flashing Red
Human Cloning: Amber

Hinduism

"Hinduism" is a western term for a family of philosophies and religious practices that have their origins in the Aryan period of Indian history and the Vedic scriptures (1200 BCE). There is no formal teaching authority for the world's one billion Hindus (Hindu population in the United States is estimated at two million). However, classical texts and commentary have offered four principal values: Dharma (virtue, morality); Artha (wealth, power); Kama (aesthetics, sexuality); Moksa (liberation) to guide Hindu life. Liberation from the cycles of rebirth is the ultimate goal within Hinduism, while Dharma regulates the pursuit of Artha and Kama. Using these values, scholars of Hinduism and Hindu practitioners have begun to initiate ethical discourse on a wide array of social practices in India and North America, including those of cloning.

The most current and summational statement of Hindu thought on human cloning has been developed by the editors of *Hinduism Today*, an international journal published in ten languages, and was formulated in response to an inquiry regarding the preparation of this report. Entitled "For the President, Mr. Bill Clinton," the statement of 1 April 1997 reads in part:

"Hindu leaders applaud President Clinton's call for a spiritual view on the human cloning predicament, noting that it shows his deep understanding of complex issues which cannot be resolved by science or politics alone. Hindu swamis appeal to the U.S. President, and indeed to all heads of state who will face this issue, for laws to restrain cloning of humans and emphatically urge him to engage spiritually minded people to guide and control the process. Good people are the best promise of a good outcome. It is our wish to inform the President that Hinduism neither condones nor condemns the march of science. If done with divine intent and consciousness, it may benefit; if done in the service of selfishness, greed, and power, it may bring severe negative karmic consequences. The simple rule is this: Cause no injury to others and let dharma—the law of good conduct and harmony with the universe and its many forces and creatures—be the guide for all such explorations" (*Hinduism Today*).

Self. Classical Hinduism does not accept distinctions found in western thought between God, human beings, and other creatures, or between the supernatural, human nature, and nature.

Rather, the self (*atman*) is part of the creative force (*Brahman*) and life energy residing in all creation. Hinduism affirms a oneness of self with divinity rather than separation. A person cannot "play God," because in an ultimate sense the self *is* God. Hindu texts describe the *atman* as pure spirit. It is "eternal, free from disease, free from old age, deathless, free from decay; it cannot be pierced, cut or agitated" (Lipner). Two concepts of relevance for issues of cloning may be inferred from this religious anthropology. First, if the real self or true consciousness is radically distinct from the body, it is beyond the reach of material science and hence cannot be harmed by genetic manipulations or cloning. A second correlative principle is that scientific processes and methods (though not their practical application) manifest the workings of divine consciousness.

Creation by Cloning. Values embedded in Hindu narrative tradition may offer the community analogues to human cloning. Hindu creation narratives are replete with references to the creation of a person, a deity, or social groups through cells of skin or drops of blood. However, in a classic narrative, the *Ramayana*, only demonic persons *(asuras*) come from divine blood. This suggests to some Hindu spiritual leaders that society has little control over ensuring only good outcomes of cloning.

Cloning Research. The animating spirit is present from fertilization in classical Hindu thought. Biological development does not shape moral development, however, for the embryo is given the status of person throughout pregnancy. Hindu thought is thus concerned with moral attitudes toward research on the pre-embryo; in particular, such concerns would focus on exploitation of the vulnerable, and whether the underlying dispositions could be limited to the research setting or would influence how human beings treat each other and treat animals.

The *Dharma* gives great authority to *ahimsa*, or the non-injury of sentient beings. This inclusive scope of beings within the moral community renders much contemporary animal research without justification. Animal research for the benefits of animals can be justified, but it is more difficult to justify when such research is conducted solely to advance human interests.

Human Cloning. Some Hindu scholars may permit human cloning under very circumscribed or exceptional circumstances. The primacy of generational continuity, especially the establishment of father-son lineage, is underscored in the *Mahabharata* (an Indian epic analogous to the *Odyssey*). The continuation of generational lineage may take place through several different methods of having a son as offspring, including a "son by artifice, a son who comes by himself, ...[and] the son of unknown seed." The epic also indicates that when a lineage is threatened by extinction, a different law—*appaddharma*—applies and permits production of offspring through relationships outside of marriage (Desai, 246, 247). Other scholars maintain that the four values of Hinduism would support human cloning when it is conducive to material or spiritual well-being, such as to alleviate infertility or for saving life through providing compatible bone marrow (Sharma).

Life Priorities. Within any Hindu discussion of cloning, there is concern that scientific attention on cloning will divert attention from the true purpose of life, which is to become conscious of and actualize one's self in union with the divine. Sri Easwaran has suggested that the question we

need to ask in light of significant scientific discoveries such as the splitting of atoms or of cloning is: "Will this help me in my search for realizing God, who is enshrined in the depths of my consciousness?"

Other Hindu spiritual leaders have posed the same question about what cloning reveals about human priorities: "Will [cloning] help us to draw nearer to God if we have such bodies? Will the soul's evolution toward the goal of spiritual liberation be advanced one millimeter?...Will mankind's inner consciousness be enhanced?" (*Hinduism Today*).P

The cultivation of spiritual self-awareness, rather than manipulation of the external environment, or one's biological self, which is no less an external organic environment, is the overriding concern of the Hindu tradition. While Hindu thought would not recognize any ontological distinction between the in-dwelling spirit of naturally born persons and of cloned persons, the latter is likely to experience discrimination because of embedded social bias. Human cloning thereby suggests that the wrong questions about life's meaning and about social priorities are being asked.

Cloning Research: Flashing Red
Human Cloning: Flashing Red

Islam

Islam ("submission") is the youngest of the Abrahamic family of religions (Judaism, Christianity, Islam). Islam presents continuity with Judaism and Christianity—Abraham and Jesus are "prophets" in Islamic tradition—as well as distinctiveness, which stems from the revelation of the Qur'an to the Prophet Muhammad (610 CE). The two main sub-traditions of Islam are Sunni (about 80%) and Shi'ite (about 20%). Within the United States, the Muslim population is estimated to comprise between three and six million persons.

Islam does not recognize a separation of religion, ethics, law, and politics; rather, Islamic law or Shari'a *regulates belief, worship, the family, and personal and social morality. Islamic scholars have recently begun to apply the tradition's authoritative sources—Qur'anic teachings, stories attributed to the Prophet (*hadith*), and* Shari'a*—to developments in modern biomedicine.*

Science and Technology. The pursuit of knowledge, including scientific inquiry, receives a divine warrant in Islamic thought. Indeed, the Islamic Code of Medical Ethics portrays the pursuit of knowledge as worship of God. Scientific discoveries do not threaten God as much as they reveal the intricacies of God's creation and will to humanity. Scientific research and investigation in most circumstances should not be curbed, and human interventions in nature are permissible to promote health.

However, Islam does not view technology as morally neutral. Instead, Islam believes careful consideration must be given to potential abuse. Islamic traditions thereby express

significant moral concern regarding the potential for discrimination in a sinful world, especially stemming from political and economic systems that do not give primacy to the promotion of human dignity. Islamic discussions of human cloning have also emphasized the possibilities for evil present in the commodification of knowledge and of persons through motivations of profit.

Therapeutic Research. The Qur'an describes persons who reject God and follow Satan as persons who "will change God's creation" (4:119). This has led leading Sunni authorities in Saudi Arabia and Egypt to condemn cloning as "the work of the devil" and advocate punishment for scientific researchers. However, Islamic jurists in general have not interpreted this Qur'anic passage to preclude forms of genetic intervention, such as somatic cell therapy, provided that such interventions are done for therapeutic purposes and are life-promoting in intent. The question Islam poses to proposals for human cloning is this: In what sense can such research legitimately be described as therapeutic?

Schools of Islamic thought have not provided a consensus on the moral status of the human embryo. Some traditions affirm that ensoulment occurs at fertilization, whereas other traditions indicate ensoulment occurs at the end of the fourth month (120 days) following fertilization. Within these latter traditions, it becomes possible to argue for research on the human pre-embryo for purposes of human health. Moreover, if the embryo is not accorded personhood, then destruction of the embryo is permissible.

Relationships. While Islam warrants biomedical research and clinical application for therapeutic purposes, issues of the integrity of relationships have raised questions about the legitimacy of reproductive technologies. The tradition gives special attention to preserving spousal, procreative, and parenting relationships because of designated role-responsibilities within the *Shari'a*. Use of third-party gametes for reproduction violates precepts concerning legitimacy, lineage, and inheritance. Transformed relationships can confuse relationships and their correlative responsibilities. These values, and objections to third-party assisted reproduction, would extend to cloning of human beings. Nonetheless, use of cloning research as an aid to fertility within the bounds of marriage would likely be substantially supported by Islamic scholars and traditions (Sachedina).

The *Shari'a* also places moral priority on refraining from harm over the production of benefits. The formation of public policy on a medical technology then must place the burden of proof on those who advocate technological innovation to establish clear benefits and to weigh immediate and prospective long-term harms.

Cloning Research: Amber
Human Cloning: Flashing Red

Judaism

Judaism is the oldest of the western monotheistic faith traditions. Its primary source of authority is the Torah, the revealed will of God in the Hebrew Bible, and rabbinic commentaries on the Torah contained in the Talmud and Mishnah. Within the United States, there are four main Jewish traditions—Conservative, Orthodox, Reform, and Reconstructionist—that collectively claim approximately 3% of the U.S. religious population. Jewish scholars have drawn on their authoritative sources and casuistical reasoning to make substantial contributions to biomedical ethics since its inception. Indeed, discussion of human cloning by Jewish scholars begins to appear in the late 1970s.

The Divine Mandate and the Self. Human beings have a command and challenge from God to use their rational, imaginative, and exploratory capacities for the benefit and health of humanity. Judaism affirms that human beings have inherent worth as creatures created in the image of God, and the Talmud understands human beings as partners with God in the ongoing act of creation. In their unique role, persons receive a divine mandate for stewardship and mastery, which encompasses a very strong emphasis on use of medical knowledge and skills to promote health, cure, and heal.

Nonetheless, the divine mandate of mastery generates moral ambivalence in the tradition with respect to cloning. Cloning is troubling because of the prospect that the mandate to master nature will be transformed into mastery over humans. The Jewish understanding of the self entails that persons are more than their genotypes. Rabbi Jakobovits has highlighted the transcendent character of the person within Jewish thought: "...man, as the delicately balanced fusion of body, mind, and soul, can never be the mere product of laboratory conditions and scientific ingenuity." Jewish perspectives on cloning are also profoundly influenced by the eugenics programs carried out on European Jewry under Nazi Germany.

An Ethic of Responsibility. Judaism is committed to an ethic of responsibility or duty, rather than an ethic of rights. The overriding duty (with three exceptions), derived from the Torah and rabbinic commentary, is the preservation of human life. Given this presumptive duty, it is possible to support cloning when it is presented as a therapeutic remedy for a genetic disease or condition, such as infertility, that besets an individual or couple. However, many proposals for human cloning do not meet these conditions of underlying disease, therapy, and individual benefit.

One exception to the command to preserve life, the prohibition of idolatry, is relevant to an assessment of cloning. Human cloning raises a danger of self-idolization. Through sexual intercourse and the raising of children, human beings are confronted with the inescapable "otherness" of persons. This otherness enables the development of humility and the authenticity of "I-Thou" relationships. These characteristics curb human hubris and self-idolization (Dorff).

The ethic of responsibility is also expressed in Jewish norms of parenthood and the responsibilities of lineage. The more the processes by which one becomes a parent—conjugal relations, conferral of genetic identity, fetal gestation in a mother's womb, birth, and raising a child—are separated from the actual creation of life, reservations and objections in Jewish thought

increase. In the context of human cloning (or other reproductive technologies), the ethic of responsibility would be diminished because of changed roles (father, mother, child) and relationships (spousal, parental, filial). It would be unclear who has responsibilities to whom between and among the generations. According to Rabbi Tendler, "we do not live well with generational inversion" that might be induced by cloning.

Status of a Clone. One source invoked by some Jewish scholars to inform community reflection are the "Golem" narratives in Jewish mysticism. The Golem narratives describe the creation of artificial, human-like life by a mystic; the Golem is subsequently destroyed without occasioning regret, because, lacking the capacity to speak, it is not considered to have human status. The narratives are deemed to present parallels to human cloning insofar as they implicitly address the status of human life without direct human parentage. However, were a human clone to be actually produced from biomedical research, there is rabbinic consensus that the clone would have human status, and the imperative to protect life would require protection and care for the clone.

Cloning Research. Jewish scholars are wary of a public policy prohibiting cloning research, which would violate the command of mastery, interfere with valuable scientific research, and compromise public oversight and accountability. It is considered important to pursue scientific research that precedes cloning for transfer because of its potential benefits. Since Jewish law does not grant full moral status to the human embryo, cloning research conducted on the early human embryo can be warranted; however, a high incidence of embryo deaths, attributable to the inefficiency of research, would violate the maxim of do no harm.

Human Cloning. The prospects of human cloning elicit ambivalence but seldom explicit condemnation in Jewish scholarship; the ambivalence is expressed in a Talmudic maxim that, at some point, human beings must ask whether they are prepared to forgo the honey from a bee in order to avoid the sting (Tendler). Jewish scholars support extensive consideration by the Jewish community of the ethical and social issues pertaining to human cloning. Rabbinic discussion does express fundamental concerns about the potential commodification of human life through cloning. Insofar as cloning, coupled with capitalistic motivations, transforms the person into a product or fungible commodity, it would violate the sacred character of human life.

Cloning Research: Amber
Human Cloning: Amber

Native American

It is worth recalling that the source of philosophical critique in Huxley's Brave New World *was Native American culture. Native Americans do not partition religion from other life domains; rather, religion is a "way of life." Good health requires living in conformity with the ways of life Native Americans received at the time of creation. The whole of creation is good within Native American narratives and all creation is animated, interrelated, and responsible for harmonious interaction to sustain the order of life in the world.*

Within this world view, Native Americans give primacy to the good of the whole, or the group, rather than to alleged needs of individuals. Individual actions must be placed within a holistic perspective; as with a pebble that causes a ripple effect in an entire body of water, so there are no isolated actions that do not have repercussions on the greater whole (Cordova).

Life Balance. Illness is a result of disorder or imbalance between persons, or between persons and nature, or within a person. The aim of traditional healing practices is to restore balance and order to the person. Ritual, ceremony, and language are no less important to maintaining or restoring health. A study of the Navajo found that thought and language were potent forces for the shaping of reality, for better or ill. Native culture would express substantial concerns with how biomedical technology shapes our language (for example, AIH, AID, GIFT, IVF, and SET to describe ART) and thus transforms reality in a manner out of harmony with the given ways of life.

Cloning Research. Animal cloning, and the potential for human cloning, risks substantial disruption of the created order and balance. Animal research erodes the reverence and kinship between humans and other created beings. Cloning research on human embryos symbolizes the western, non-Native pursuit of technical solutions to what are ultimately metaphysical problems; moreover, these technological skills are not accompanied by necessary practical wisdom about the ways of life. Sakim, a traditional elder from the Muskogee tribe observes of cloning: "We are becoming more like Creator with every day that goes by. However, it is only our abilities that are growing that way. We are not blessed with nor in any manner fraught with the judgment of Creator. That is the fundamental problem."

Resource Priorities. Fertility drugs, other methods of reproductive technology, and cloning can disrupt the balance of communal co-existence. This communal balance relies on an acceptance that human beings and groups exist in a bounded space that may not be expanded. The human species as a whole has nonetheless expanded beyond its given bounds through overpopulation; cloning simply will perpetuate a problem of human growth and increasing scarcity of those resources needed to live a decent human existence. In this context, "the application of the knowledge to clone a human being is unjustified" (Cordova). In particular, a focus on scientific technology such as cloning will divert needed attention and resources away from basic care for Native Americans, whose life expectancy is the shortest of any demographic group. The needs of a few cannot be prior to the good of the whole.

While interrelationship is cherished, it is not mutually exclusive with personal identity. A Sioux creation narrative reflects the importance of individuality as a necessary condition for diversity and interrelationship: "The reason Wakan Tanka [Creator] does not make two birds, or animals, or human beings exactly alike is because each is placed here by Wakan Tanka to be an independent individuality and to rely upon itself" (Deloria, 89). The values of balance with the patterns and ways of life, individuality, diversity, and interdependent relationships can be compromised by motivations for cloning.

Indigenous Cultures. What support that does exist among Native American cultures for human cloning may pertain to the preservation of endangered indigenous peoples. The Rev. Abraham A. Akaka, a Native American Hawaiian pastor, has commented: "For aboriginal people of our planet who see themselves as a dwindling and endangered species, cloning of the best of their race will be a blessing—a viable avenue for preserving and perpetuating their unique identities and individualities upon lands they revere as Father and Mother" (Akaka). This qualified support for human cloning is consistent with the Native emphasis of maintaining the balance of the ways of life given to peoples at creation. It does not, however, warrant individualist desires for cloning that have little bearing on the perpetuation of a species or culture.

Cloning Research: Flashing Red
Human Cloning: Flashing Red

Orthodox Christianity

In the United States, the tradition of Orthodox Christianity is institutionalized in two prominent denominational bodies, the Greek Orthodox Archdiocese of America and the Orthodox Church in America. About 3% of the U.S. religious population is affiliated with these denominations. The Bible and the wisdom of the tradition provide grounds for the ecclesiastical teaching content of Orthodox Christianity. Theologians within both denominations, as well as the Orthodox Church in America itself, have addressed the subject of cloning.

The Image of God. The concept of the person within Orthodox tradition is rooted in the *imago Dei*, with the ultimate purpose of life to realize *theosis*, or God-likeness, in union and communion with others. The image of God influences judgments about reproductive technologies and cloning. Reproductive technologies used outside the context of marriage may be viewed as attempts to recreate human beings in man's image and preferred characteristics, rather than God's image. One theologian, while acknowledging the tremendous promise that cloning holds out for agricultural development, indicates that it must be condemned "as grotesque genetic manipulation when practiced on human beings."

The image of God is also invoked as the central theological claim in a public statement on cloning, issued on 11 March 1997, by the Orthodox Church in America. The Orthodox Church believes cloning use will inevitably be abused, through such examples as "the commercialization of 'prime' DNA, production of children for the purpose of providing 'spare parts,' and movement toward creation of a 'superior' class of human beings." The statement concludes with an emphatic request that "a government ban be imposed on all forms of experimentation to produce human clones and that government funding for such activity be denied." This does not preclude public support and funding for animal cloning to produce therapeutic medical products. The call for a prohibition is addressed directly to publicly funded research, whether animal or human embryonic, that is developed for the purpose of human cloning.

The *imago Dei* requires that human beings be treated with dignity and respect. These values underlie not only treatment of the person, but the method by which the person comes into existence. Cloning creates human beings for human rather than divine purposes and thereby is a form of disrespect. Since on Orthodox understanding, the person is an embodied soul, experimentation on the body, including cloning, would necessarily enter the realm of the soul and the spiritual essence of the self. Cloning cannot be reduced to a scientific procedure on a biological organism.

Sacramental Relationships. A central concern within the Orthodox tradition is the sacramental (revelations of the sacred in human experience) dimensions of marriage, procreation, and the rearing of children. The holiness of marriage and the family is the proper context for procreation and nurture of a child. It is not permissible in Orthodox teaching to introduce the gametic or gestational contributions of third parties in human reproduction. Cloning in particular is deemed to depersonalize the human being; the prospect of manufacturing children transforms a sacred mystery into a sterile technological achievement. While a clone would be considered a person with a soul, based on its capacities for intelligence, self-determination, self-consciousness, and interpersonal and spiritual relationships, Orthodox theologians believe that a cloned human being would be valued only for extrinsic purposes, as an object for the use and exploitation of others.

Cloning Research. Orthodox theologians extend the dignity and respect owed to the person to the human embryo. This does not depend on a claim about ensoulment, but rather exhibits human finitude and fallibility: "We must treat the developing embryo with dignity and respect, because we do not know when it becomes a person" (Demopulos). Moreover, the inefficiency of current cloning techniques, if applied to human embryos, would constitute a tragedy of loss of potential human life. Such positions necessarily preclude cloning research on the embryo.

Cloning Research: Red
Human Cloning: Red

Protestant Christianity: Conservative Evangelical

The diversity of Protestantism is illustrated by the different views of Joseph Fletcher (Episcopal) and Paul Ramsey (Methodist) on human cloning. This report will try to illuminate some of the diversity, while avoiding oversimplification, by distinguishing between conservative evangelical and mainline Protestantism.

The conservative evangelical denominations considered in this report account for some 15% of the American religious population. This includes the largest Protestant body, the Southern Baptist Convention (SBC), which claims over 16 million adherents. The Christian Life Commission of the SBC issued a resolution against human cloning on 6 March 1997. While evangelical theologians and denominations do not speak as one voice, they are united in relying heavily on the Bible as the principal authority for spiritual and moral life. Protestant evangelicals began to take a serious interest in biomedical ethics following the Roe v. Wade

decision legalizing abortion in 1973, and their writings continue to focus on ethical questions at the beginning and ending of life. However, partly as a response to the influence of secular, philosophical models in medicine, evangelical ethicists have begun to address all the major questions of biomedical ethics.

The Sanctity of Life. Given evangelical emphasis on the sanctity of human life, it is not surprising that J. Kerby Anderson, perhaps the first evangelical author to address human cloning, set it within the context of the right-to-life controversy. Anderson argued that the sanctity of life is violated by cloning in two different ways. First, cloning research would inevitably result in loss of embryonic life. Secondly, although Anderson believes a clone would have a soul, he holds that societal disregard for the sanctity of human life would lead to a redefinition of humanity. In that way, society could treat the clone as a repository for spare organs and tissues.

More recent evangelical commentary has reiterated concern about the diminished personhood or humanity of the clone without invoking the sanctity of human life value. The framing context has instead been a critique of the kind of society that makes cloning a valued cultural project, namely, a society that arbitrarily projects certain traits as preferable, particularly those traits having to do with bodily appearance.

Parenthood. Evangelical discourse affirms the intrinsic connection between marriage and parenthood delineated in the *Genesis* creation story. Human cloning is theologically misguided because it breaks this connection so completely. In so doing, cloning no less ruptures critical connections between parent and child. Gilbert Meilaender argues that a marital context of giving and receiving in love is the ideal context for procreation and nurture of a child. This relational context is emphatically severed in human cloning, which "aims directly at the heart of the mystery that is the child." Thus, the idea of a child as a "gift" is effaced as the child becomes both a project and a projection of the self.

Oliver O'Donovan's argument to root the sanctity of parenthood within the Christian liturgical tradition has been especially influential in evangelical scholarship. O'Donovan contrasts the "begetting" of procreation with scientific "making" in human reproduction; the latter is exemplified by human cloning. Cloning diminishes humanity to "raw material" out of which an artifice can be designed and constructed in our image.

Southern Baptist scholars portray human cloning as distinctive and discontinuous from previous methods of human procreation; indeed, it is represented as a "radical break with the human past, and with the established patterns of human life." The distinctiveness of cloning is manifested in what R. Albert Mohler, Jr. refers to as "consumer eugenics" in which "direct genetic customization" of the human embryo is performed. Moreover, the secular principles of procreative liberty and autonomy that support cloning assault the integrity and social necessity of the family and of marital love: "The possibility of human cloning allows for the final emancipation of human reproduction from the marital relationship. Indeed, cloning would allow for the emancipation of human reproduction from *any* relationship" (Mohler, Jr.).

The Image of God. Evangelical authors directly connect issues of diminished humanity and relationality embedded in human cloning with a violation of the *imago Dei*. One author, drawing on neo-orthodox theologian Karl Barth, delineates the *imago Dei* in terms of freedom for self-determination, equality, relationality, mutual respect, and solidarity. Scientific inquiry that issues in a research project to clone human beings violates individual freedom by subordinating self-determination to scientific predetermination. The *imago Dei* is substantively compromised in a clone because of diminished solidarity and the potential deprivation of equality and relationality. Human cloning risks devaluing the person by suggesting genetics is the essence of personhood, or by valuing the clone because of its replication of valued characteristics of another person. In evangelical understandings, society could grant the clone only derivative value, not inherent value.

Religious thinkers within the Southern Baptist Convention also invoke the *imago Dei* as a bar against human cloning. As bearers of this image, human beings gain insight into self-understanding and human uniqueness and receive a distinctive status relative to the rest of creation. This sacred uniqueness is compromised by efforts at human cloning. On 6 March 1997, the Christian Life Commission of the Southern Baptist Convention issued a resolution entitled "Against Human Cloning" that supported the decision of President Clinton to prohibit federal funding for human cloning research and requested "that the Congress of the United States make human cloning unlawful." The resolution also called on "all nations of the world to make efforts to prevent the cloning of any human being."

Evangelical ethicists contend that cloning can contradict human creativity and innovation embedded in the image of God, rather than express it (as claimed by some mainline Protestant theologians). Instead of reflecting an openness to the future, cloning in fact involves a replication of the past. Thus, it should not be interpreted as creative but rather as "reactionary biological conservatism" (Jones). Cloning perpetuates the past and thereby belies our unwillingness to accept contingency and the unknown.

Cloning Research. Research on the human pre-embryo is assessed as "immoral" because of the ascription of personhood with full moral status to the conceptus. Echoing Ramsey's concern, evangelical authors describe cloning as an immoral experiment on a person without his or her consent. Moreover, cloning procedures are likely to ensue in embryonic death due to abnormalities in the embryo or practical difficulties in transferring the embryo to a host womb.

Cloning Research: Red
Human Cloning: Red

Protestant Christianity: Mainline

The religious witness of mainline Protestantism focuses on questions of peace and social justice rather than the right to life. The seven principal denominations designated as "mainline" Protestant (American Baptist, Christian Church [Disciples of Christ], Episcopal, Evangelical

Lutheran, United Methodist, Presbyterian, United Church of Christ) claim approximately 17% of the U.S. religious population.

These denominations have been very active in developing ecclesiastical position statements and convening working groups to address theological and ethical issues in biomedicine. Moreover, ecclesiastical leaders and theologians have been prominent in bringing such issues to the consideration of more global bodies, such as the National Council of Churches in Christ and the World Council of Churches. However, the primacy of freedom of conscience in Protestantism means that theologians engaged in biomedical ethics may not agree with the views of denominational bodies or their theological peers. This summary will reflect this theological diversity rather than resolve it.

Creative Freedom. An important question within mainline Protestant thought is whether there are any adequate precedents to guide ethical reflection for the advent of reproductive and genetic technologies, or what one scholar has described as the "new genesis." A first position affirms that we are free to engage in exploratory ethics because human destiny lies in the future rather than being determined by the past. Theological ethics begins by God giving human beings a future to shape and create in partnership with God. Genetic and reproductive technologies express the creative dimensions of the *imago Dei* insofar as they promote human dignity and welfare. Within this understanding, no theological principle stands as a bar to human cloning.

The Christian vocation of freedom warrants the pursuit of scientific freedom. However, freedom is not unlimited but is to be used to fulfill divine purposes. Moreover, freedom has a correlative obligation of accountability. Thus, regulation of research is justified especially given the current imprecision of the technology and the consequent loss of animal or human embryonic life. While researchers should ensure respect for the pre-embryo, and adopt procedures to minimize discarded embryos, the efficacy of such research is ultimately an issue of scientific procedure rather than of theological principle.

Even though sin will manifest itself in an ongoing disparity between a designed future and its reality, Christians are given permission to "sin bravely" in the pursuit of progress. Thus, if further research on human cloning can establish a reasonable expectation of benefits, and ensure human dignity, then both research and eventually human cloning seem warranted. The prospects of private, entrepreneurial interests establishing various cloning services could, however, culminate in diminished dignity.

Research Criteria. A second position distinguishes between the ethics of cloning research and the ethics of cloning human beings for purposes of transfer and birth. Research on cloned embryos can be justifiable, using the precedent of current standards for the regulation and protection of human and animal subjects. However, cloning of humans involves creation after our image rather than God's and can lead to power over humans rather than enhanced choices. Moreover, this position criticizes the appeal to "human" dignity as a warrant for cloning as too global and impersonal. Decision makers should instead focus on the interests of children, that is, on those persons living in the future created for them. At a minimum, society should engage in a sustained

and substantive debate on the possible benefits and the likely harms of human cloning, with a burden of proof imposed on the research community to establish a compelling case for the beneficial and therapeutic uses of the technology.

Research Moratorium. Public discourse is necessary but insufficient: A third position supports implementing a long-term moratorium on cloning research until the scientific, ethical, and social issues have been fully debated. Without a moratorium, it is entirely likely that new research discoveries could outpace discussion and thereby change the issues under debate. Both issues of cloning research on pre-embryos and cloning human beings should be subjected to ethical and theological scrutiny as well as tests of political and legal feasibility. Christians bring to this social discussion an emphasis on human creative possibility, to be sure, but also a "hermeneutics of suspicion" (Nelson) that stresses human fallibility, misplaced self-confidence, and the risks of arrogance.

Prohibitions. A fourth position places cloning within the context of positive eugenics and offers a critique of both research process and product based on the ethical precedents and prohibitions established with respect to genetic enhancements. In particular, cloning raises issues about the substantive characteristics desired in a person, the control of enormous powers of manipulation by a very small circle of experts, and whether human life will assume instrumental rather than inherent value.

Cloning Research: Green/Amber
Human Cloning: Amber

Roman Catholic Christianity

The Roman Catholic Church is the largest denomination in the U.S., with approximately 40% of the religious population and over 20% of the general population. The religious and moral authority for Roman Catholicism is grounded in the witness of God and Jesus Christ in the Bible, as interpreted through the teaching office (magisterium) of the Church. In the United States, Roman Catholic teaching is coordinated by the National Conference of Catholic Bishops (NCCB). Roman Catholic theologians, though not always in agreement with magisterial teaching, have been among the most influential contributors in biomedical ethics, and have addressed the possibility of human cloning since the 1960s.

Magisterial Teaching. *Donum Vitae*, an encyclical issued in 1987 by the Congregation for the Doctrine of the Faith condemned cloning (blastomere separation) as a violation of the dignity of the human embryo and of the intrinsic goods of human sexuality: "...attempts or hypotheses for obtaining a human being without any connection with sexuality through 'twin fission,' cloning, or parthenogenesis are to be considered contrary to the moral law, since they are in opposition to the dignity both of human procreation and of the conjugal union." While some traditions have addressed the possible abuses of cloning technology, Roman Catholic teaching maintains that the *use* of cloning techniques with respect to human beings is itself contrary to human dignity.

Scientific research on cloning since *Donum Vitae* has issued in ecclesiastical condemnation and a request to governments to enact legislation to prohibit non-therapeutic research on human embryos and cloning of human beings. In the wake of the cloning of "Dolly," a Vatican statement reiterated the basic teaching of *Donum Vitae:* "A person has the right to be born in a human way. It is to be strongly hoped that states...will immediately pass a law that bans the application of cloning on humans and that in the face of pressures, [states] have the force to make no concessions."

National Conference of Catholic Bishops. In the United States, the NCCB released a statement in March 1997 rejecting human cloning on several grounds, including an appeal to the rights of children to have real parents and not to be manufactured as copies. Moreover, research involving the cloning of human embryos is deemed unethical due to its risks and nontherapeutic objectives. The NCCB also issued support for the testimony of John Cardinal O'Connor before the New York State Senate (13 March 1997). Cardinal O'Connor criticized cloning as contrary to human parenthood and human wisdom. Human cloning violates the norms of procreation and parenthood through a process that removes "the humanism from human parents and the human child." A serious survey of the state of our degraded external environment reveals that human beings lack the wisdom to experiment with the internal human environment. O'Connor emphasizes in particular questions of technical inefficiency and issues of the character and qualifications of those who would direct the research and process of cloning, concluding that these are not matters to be left to technical specialists. O'Connor also observes that cloning falls beyond the parameters of the vocation of medicine: "The act of human cloning itself cures no pathology. Thus, we are not doctoring the patient but doctoring the race." While Roman Catholicism encourages scientific development in the service of the person and human dignity, proposals for research "that are hostile to human parenthood, unknown in deleterious consequences, and cure no disease...are not medicine and are not welcome."

Theologians: Cloning Research. While many Roman Catholic theologians have addressed the subject of human cloning, Richard A. McCormick, S.J., has provided the most constant Catholic commentary on cloning. His themes will be used as illustrative of the central concerns of theologians within the tradition. McCormick has invoked the themes of sanctity, wholeness, and individuality in criticizing cloning research on human pre-embryos. Cloning is not merely a question of scientific technique, but also involves matters of the public interest. McCormick is concerned that such research will erode respect for the human pre-embryo and pre-nascent life, and diminish the wonder of human diversity and uniqueness.

Parenthood. McCormick has also argued that human cloning is contrary to the meaning of marriage and the family. The purpose of marriage includes the binding of the unitive and procreative purposes of sexuality. Reproductive technologies, including cloning, suggest that embodiment is extrinsic rather than intrinsic to personhood. Such procedures depersonalize the family, "debodify" marital love, and violate the sacramental covenant of marriage. Moreover, natural law encompasses duties for both procreation *and* education of offspring; parental nurture

is required to enable a child to develop morally and spiritually and to assume interpersonal commitments.

Roman Catholic theologians have emphasized the sins of pride and self-interest, and the human conditions of finitude and fallibility, in assessing the prospects of human cloning. However, avoiding pride should not mean falling into the sin of sloth. Human beings have a divine responsibility for dominion that can be expanded through justified scientific research.

Cloning Research: Red
Human Cloning: Red

APPENDICES

APPENDIX A: ANNOTATED BIBLIOGRAPHY

RELIGION and CLONING

J. Kerby Anderson, *Genetic Engineering,* Grand Rapids, MI: Zondervan Publishing House, 1982.

The fundamental issue of cloning is the sanctity of life, because the potential for loss of life and genetic abnormality is very high. While clones would be creations in God's image and have souls, the major question is whether their humanity would be redefined. Because of societal disregard for the sanctity of life, clones will likely be used for spare parts and be abused.

John Breck, "Genetic Engineering: Setting the Limits," in *Health and Faith: Medical, Psychological, and Religious Dimensions,* John T. Chirban (ed.), Washington, DC: University Press of America, 1991, 51–55.

Breck contends that cloning technology holds out tremendous promise for agriculture, but that the Orthodox Church must condemn it as a grotesque manipulation were it to be practiced on human beings.

R. Geoffrey Brown, "Clones, Chimeras, and the Image of God: Lessons from Barthian Bioethics," in *Bioethics and the Future of Medicine: A Christian Appraisal,* John F. Kilner, Nigel M. de S. Cameron, David Schiedermayer (eds.), Grand Rapids, MI: William B. Eerdmans Publishing Company, 1995, 238–249.

The principles of the image of God give a decisive command to the person for prohibition of "creative (non-therapeutic) genetic predetermination of a human being" through cloning or chimeras on the grounds that human freedom is denied, respect for life is disregarded, and the relational self is violated. Human freedom for self-determination is theologically subject to the image and sovereignty of God. Scientific freedom that results in a project of human cloning "would be blatant disregard for individual freedom," because it subordinates self-determination to scientific determination. Moreover, a clone lacking the characteristics of freedom, which in turn diminishes equality, relationality, and fellow humanity, would be compromised as a person in the image of God.

Ronald Cole-Turner, "Dolly Theology," unpublished manuscript.

Cole-Turner recommends a temporary and voluntary ban on all human cloning, which should last well into the next decade in order to allow full public discussion. The role of the church is to prevent trivial and misguided uses of cloning through careful and open consideration of proposed reasons.

Cole-Turner does not see a theologically or morally significant difference between a cloned and an uncloned embryo, but this should be an item for public discussion. Cole-Turner distinguishes selfish, sinister, exploitative, and possessive uses for desiring to reproduce through cloning an

embryo. He cannot, however, imagine any "loving" reasons; non-loving reasons will devalue the identity of the child.

Congregation for the Doctrine of the Faith, *Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation*, Vatican City, 22 February 1987.

The *Instruction* prohibits human cloning, both as a scientific *outcome* and as a scientific *proposal*: "Attempts or hypotheses for obtaining a human being without any connection with sexuality through 'twin fission,' cloning, or parthenogenesis are to be considered contrary to the moral law, since they are in opposition to the dignity both of human procreation and of the conjugal union." The prohibition is based in the twin and intrinsically linked meanings of sexual intercourse, procreative and unitive sexuality. The violation of the moral law incurred through a cloning hypothesis concerns the usurpation of God's domain by a scientific ideology devoted to mastery of human destiny.

Charles E. Curran, "Moral Theology and Genetics," *Crosscurrents* 20 (Winter 1970): 64–82.

While finding himself in agreement with most of Paul Ramsey's conclusions on genetic engineering, including cloning, Curran believes Ramsey presents a "closed" or static concept of human nature and that he neglects the expanded dominion over human existence that modern science has bequeathed to us. Thus, Ramsey risks the danger of sloth. However, Curran's critique of proposals for human cloning appeals more to human propensities for pride. The Christian understanding of human nature as limited and sinful means the decisions required for clonal reproduction, such as the selection of ideal types, either could not be made because of incomplete information, or would be made arbitrarily.

Richard Doerflinger, "Remarks in Response to News Reports on the Cloning of Mammals," *National Conference of Catholic Bishops*, 25 February 1997.

Speaking on behalf of the NCCB, Doerflinger maintains that Catholic teaching rejects the cloning of human beings because it is not a worthy way to bring a human being into the world. Children have rights to have real parents and not to be manufactured as products. Research on human embryos for cloning purposes is unethical because it violates informed consent and poses risks in non-therapeutic experimentation.

Nancy J. Duff, "Clone with Caution," *The Washington Post*, 2 March 1997, C1, 5.

Duff presents several reasons against cloning from a theological perspective. These include: (1) Cloning represents an insidious form of pride, insofar as we may seek to create a more perfect humanity, or a humanity created after our own image. Power to clone human beings means power over human beings; (2) Human beings are not their own creators, but cloning raises the prospect of humanity acting as its own destroyer; (3) Human cloning may challenge traditional forms of human procreation; (4) There is a potential risk of harm to the identity of the cloned child; (5) The presumed ownership and manipulation of animal life necessary for human cloning may violate the theological claim of dominion.

The Church is called to "forge a responsible path for this new technology." Duff opposes actual cloning of humans, but believes research on cloning may be encouraged if science will proceed cautiously, openly, and with a willingness to be subject to regulations for the protection of the public good.

Sri Eknath Easwaran, "Brave New World," *Blue Mountain: A Journal for Spiritual Living* (March 1997).

From within Hindu spirituality, Easwaran believes we must ask of cloning technology: "Will this help me in my search for realizing God, who is enshrined in the depths of my consciousness?"

Kenneth D. Eberhard, "Genetics and Human Survival," *Linacre Quarterly* 40:3 (August 1973), 167–181.

Cloning reduces humankind to a material and scientific object to such an extent that the humanity of all is placed under attack. It could not be justifiable to have a cloned child unless human beings were considered merely as material objects. A world of scientific reductionism is not a world the Christian wishes to live in.

John S. Feinberg, Paul D. Feinberg, *Ethics for a Brave New World*, Wheaton, IL: Crossway Books, 1993.

The authors view cloning as impractical and immoral. It is impractical, because research procedures are likely to cause embryo death due to abnormality or failure to transfer to a host womb successfully. It is immoral because a person is present at conception. Cloning therefore involves an immoral experiment on a person without his or her consent.

Joseph Fletcher, *Humanhood: Essays in Biomedical Ethics*, Buffalo, NY: Prometheus Books, 1979; *The Ethics of Genetic Control*, Garden City, NY: Anchor, 1974; "New Beginnings in Life: A Theologian's Response," in The New Genetics and the Future of Man, Michael Hamilton (ed.), Grand Rapids, MI: Wm. B. Eerdmans Publishing, 1972, 78–89.

Fletcher argued the "real moral question" is not whether or not to engage in cloning, but when and why. His own reply is that "There is no ethical objection to cloning when it is *morally* (that is, humanely) employed."

Fletcher portrays cloning as one among many methods of "reproduction," useful under appropriate circumstances: "It can alternate with sexual reproduction as need suggests, in one generation or another." Indeed, according to the criteria of humanness, "laboratory reproduction is radically human" because it is rational and deliberate. Human beings should exercise the same kind of reproductive choice and control over themselves that they do over non-humans: "What men can do by cloning with their plants and animals they could and sometimes should do for themselves."

Among moral or humane uses of cloning technology are (1) to provide "clonants" (instructively, Fletcher never uses the language of "person") with sources of immunologically compatible

life-saving organs; (b) perpetuation of the "finest genotypes" in our species; (c) cloning a child's sex to avoid a genetic-linked disease or to insure family survival; (d) selective reproduction of individuals (e.g., top scientists) for social vocations that require specific characteristics; (e) reparation of a diminished gene pool; or (f) safeguarding those (e.g., soldiers) who assume risks or dangerous roles on behalf of the society.

Bernard Häring, *Ethics of Manipulation: Issues in Medicine, Behavior Control, and Genetics*, New York: Seabury Press, 1975.

Haring raises specific objections to human cloning: (1) it would disrupt human procreative responsibilities: "The total severance of the unitive and procreative purposes of sexuality would have profound repercussions on all human relationships"; (2) a clone may have a compromised sense of identity, belonging, and continuity, which would make it difficult to achieve a willingness to accept interpersonal responsibility and commitment; (3) widespread cloning would undermine the stability of marriage and family.

Maher Hathout, "Cloning: Who Will Set the Limits?" *The Minaret* 19:3 (March 1997), 8.

Hathout argues that the Qur'an and Islam encourage scientific inquiry: Scientific knowledge becomes a symbol or sign of God's creation. Cloning research imitates creation by manipulation of elements created by God (*khaliq*), but does not change creation (*bari*).

The larger question within Islam concerns the application of research. Human beings do have responsibility before God for how they apply research findings. Human dignity must be protected from abuse. Thus, application must be complemented with ethical and sociological studies on possible harm to humans. Moreover, the commodification of knowledge, when it is traded, bought, and sold, is a "violation of the divine principles of serving God and his creation." A similar judgment would be made of uses of cloning for purposes of political and cultural superiority.

Philip Hefner, "Cloning as Quintessential Human Act," forthcoming in *Insights*, June 1997.

Hefner believes the significance of cloning lies in its revelation to us of fundamental realities: Human beings are created co-creators; we are thoroughly natural creatures; and cloned humans are natural persons.

Theologically, Hefner contends that life is God's gift; that humans are to be good stewards of God's gifts; humans are free and accountable to God; and that human experience is inevitably sinful. Policies on cloning should reflect these realities, allowing considerable time for public discussion, attending to the complex sets of values, and accounting for our fallible judgments.

D. Gareth Jones, *Brave New People: Ethical Issues at the Commencement of Life*, Grand Rapids, MI: Wm. B. Eerdmans Publishing, 1985.

Jones argues that cloning is unacceptable to Christians. Creativity and change are intrinsic to human life and reflect our likeness of God, who is creative and innovative. Cloning by contrast

involves a replication of the past, and therefore, is a form of "reactionary biological conservatism."

The value of clones lies in their replication of characteristics of other persons; clones are valued for others, rather than for themselves. Thus, they are creatures in "our" likeness, rather than God's. Jones fears that human cloning will result in a lost humanness. In addition, Jones believes that society is incapable of addressing the ethical issues raised by implementation of cloning.

Damien Keown, *Buddhism and Bioethics,* New York: St. Martin's Press, 1995.
In a short discussion of asexual reproduction, Keown contends that human cloning will merely illustrate the variety of ways that life can be generated, consistent with teaching in Buddhist texts. The Buddhist narrative tradition relates stories of "spontaneous generation" in which sages and supernatural beings have power to "materialize a human form for themselves at will." On Keown's view, both the clone and the host are ontological individuals entitled to full respect.

Andrew Kimbrell, *The Human Body Shop: The Engineering and Marketing of Life,* New York: HarperCollins Publishers, 1993.
Kimbrell recommends a "complete ban on the cloning of human beings." This policy is based on an appeal to the "sacred image of the human form," suggesting conceptions of embodiment and the image of God.

C.S. Lewis, *The Abolition of Man,* New York: Macmillan Publishing Co., 1973.
The consequences of designing our descendants would be less freedom: "If any one age really attains, by eugenics and scientific education, the power to make its descendants what it pleases, all men who live after that are patients of that power."

Richard A. McCormick, S.J., *How Brave a New World: Dilemmas in Bioethics,* Garden City, NY: Doubleday & Company, Inc., 1981.
McCormick argues that Fletcher distorts the notion of humanness by equating "rational control" with "good" in discussions of asexual reproduction. The criteria of deliberation and rationality tell us only that a person is acting, not that the person is acting humanly. McCormick then offers his own view that reproductive procedures such as IVF and cloning are "inimical to marriage and the family." There is no justification for such steps "unless a value the equivalent of survival demands it."

McCormick finds himself in agreement with Ramsey (and Leon Kass) on the issue of whether such procedures depersonalize and dehumanize the family and its members. First, they suggest that embodiment is extrinsic rather than intrinsic to personhood. Moreover, laboratory control of reproduction undermines the biological and moral bonds of the family.

Richard A. McCormick, S.J., "Should We Clone Humans," *The Christian Century* November 17–24, 1993, 1148–1149; "Blastomere Separation: Some Concerns," *Hastings Center Report* 24:2 (1994), 14–16.

McCormick argues in his original article, and in a subsequent rejoinder to John Robertson, that cloning is capable of imposing irreparable harm to "our cherished sense of the sanctity, wholeness, and individuality of human life." The status of the human preembryo used in human cloning research at George Washington University is of substantial public importance because it reflects basic attitudes toward human life. McCormick is concerned that support for autonomous choices regarding preferential breeding will be detached from social contexts of eugenics. We will reduce the totality to a part and begin to value a person in terms of the particular trait he or she was programmed to have. Finally, cloning may "shatter our wonder at human diversity and individuality."

C. Ben Mitchell, as cited in "Cloning of Embryos Stirs Ethical Concerns," *The Christian Century* November 10, 1993, 1117.

Responding to the George Washington University experiment, ethicist Ben Mitchell of the Christian Life Commission of the Southern Baptist Convention argues, "It is difficult to see how this technology could be used without devaluing the sanctity of human life. Human beings are more than the sum of genetic parts."

Oliver O'Donovan, *Begotten or Made?*, Oxford: Clarendon Press, 1984.

Using the Nicene Creed as a point of departure, O'Donovan contrasts the theological use of "begotten" with "making." Begetting generates that which is like ourselves (in the way the Son was like the Father), while making produces that which is unlike ourselves. Cloning represents the culmination of scientific making in human reproduction. The use of scientific capacity comes at the cost of natural humanity: "Cloning techniques demonstrate that mankind does have the awesome technical power to exchange the humanity which God has given him for something else, to treat natural humanity itself as a raw material for constructing a form of life that is *not* natural humanity but is an artificial development *out of* humanity."

Orthodox Church in America, "Statement on Recent Developments in Cloning Technology," 11 March 1997.

This denominational statement holds that the prospect of human cloning raises the prospect of an ominous slippery slope, in which use of cloning will inevitably lead to abuse. "Prime" DNA will be commercialized, children will be produced for their spare parts, and there will be movement to create a superior race of human beings.

The statement concludes by emphatically requesting that a government ban be imposed on all forms of experimentation to produce human clones and that government funding for such activity be denied.

Paul Ramsey, *Fabricated Man: The Ethics of Genetic Control*, New Haven: Yale University Press, 1970, especially pp. 60–103, "Shall We Clone A Man?"; "Moral and Religious Implications of Genetic Control," in *Genetics and the Future of Man*, John D. Roslansky (ed.), New York: Appleton-Century-Croffs, 1966, 107–169.

Ramsey portrayed clonal reproduction as a "borderline" for medicine and society. Cloning seeks to modify the genetic conditions of life in the service of non-patients—the human species or control of evolution—and thus risks changing medicine's vocation of service to life and to real patients.

> As part of a general critique of asexual reproduction, Ramsey identified three "horizontal" (person-person) and two "vertical" (person-God) violations of cloning on moral norms: (1) Clonal reproduction would inevitably require "coercive" or "dictated breeding" in order to ensure a controlled gene pool. (2) Scientific optimism for eugenic improvement of the species would neglect injustices and "mishaps" perpetrated on individuals. (3) Cloning represents an assault on human parenthood. Cloning technology alienate the person from his or her embodied personhood through a technical, non-relational, and dehumanized process. The two vertical violations of hubris and playing God explicitly invoke a theological anthropology. With the death of God in secular culture, human beings who enact their self-modifying freedom assume the role of man-God. (92).

Fred Rosner, *Modern Medicine and Jewish Ethics*, New York: Yeshiva University Press, 1986.

Rosner suggests three questions are involved in Jewish discussion of cloning: (1) Are we encroaching on the domain of the Creator? (2) Are we allowed to tamper with our essence in creating an "artificial" human? (3) Do we have permission to alter humanhood and humanity? Such issues deserve "extensive consideration" within the Jewish community.

Thomas A. Shannon, "Cloning, Uniqueness, and Individuality," *Louvain Studies* 19 (1994), 283–306.

Shannon examines the implications of cloning for genetic uniqueness and individuality in the wake of the George Washington University studies. Drawing on the scholastic theologian John Duns Scotus, Shannon argues for a difference between genetic uniqueness, i.e., the genome which constitutes a common nature for the human species, and individuality, which begins through cellular division and continues through the life experiences of a person. Persons may then be genetically but not individually interchangeable. Shannon holds that the pre-embryo is not morally mistreated through the technical process of cloning, but individuals will be, because they are valued for reasons other than their inherent worth and dignity.

Seymour Siegel, "Genetic Engineering: Some Reflections," address to the Rabbinical Assembly Convention, New York, 1978, as cited in Martin Ebon, *The Cloning of Man: A Brave New Hope or Horror,* New York: Signet Books, 1978.

Siegel addressed the prospects of cloning in the future. He argued that we cannot play God, but that humankind is challenged by God to use its reason, its imagination, and its daring in an effort to improve the health and welfare of the human species.

Charles Stinson, "Theology and the Baron Frankenstein: Cloning and Beyond," *The Christian Century* 89 (January 19, 1972), 60–63.

In opposition to Ramsey, Stinson envisions "socially regulated cloning of individuals deemed especially valuable to the community" within the next century. He offers a "key theological concept for the future": The spiritual significance of life lies in the ongoing content of human life, not its origin, whether natural or artificial.

Stinson contends that clones would have a "soul"—insofar as they would be capable of personal, ethical, aesthetic, and religious experience. So long as a clone is raised in a loving familial environment, Stinson believes there is little question about the genuineness of the humanity of a clone.

Allen D. Verhey, "Cloning: Revisiting an Old Debate," *Kennedy Institute of Ethics Journal* 4:3 (September 1994), 227–234; "Theology after Dolly," *The Christian Century*, March 19–26, 1997, 285–286.

Verhey contrasts the views of Joseph Fletcher and Paul Ramsey on five major themes:

1) **Freedom**: Fletcher understood freedom to be a sufficient principle of morality, while Ramsey held it to be insufficient and limited by our embodied and social nature.

2) **Good and Evil:** Fletcher assessed "good" in terms of the maximization of happiness. Ramsey believed that happiness was not sufficient to account for the good life in a family, and that we must be concerned with how happiness is distributed.

3) **Embodiment:** Fletcher located the person in our capacity for rational choice and control. Ramsey emphasized our embodied selfhood, including sexuality as intrinsic to self.

4) **Nature:** Fletcher followed in the Baconian tradition of celebrating technology and human mastery over nature. Ramsey recognized that technology is also the power of some people over other people.

5) **Parenthood**: Fletcher emphasized the social parent, while Ramsey argued for the significance of biological parenting. We are called to see children as gifts, not products.

World Council of Churches, *Faith and Science in an Unjust World*, Geneva: World Council of Churches, 1979.

A working group of the World Council of Churches examining ethics and the biological sciences believed cloning raised ethical objections similar to those of positive eugenics—namely, that there is no societal, let alone global, consensus on "superior" human qualities, and that cloning technology places enormous powers of manipulation in the hands of a few experts, who require control by other experts.

APPENDIX B: BIBLIOGRAPHY

Endnotes: Sections 1 and 2

[1] Cahill, L.S., Cloning: Religious-Based Perspectives, Testimony before the National Bioethics Advisory Commission, March 13, 1997.

[2] Childress, J.F., *Practical Reasoning in Bioethics*, Bloomington, IN: Indiana University Press, 1997.

[3] Cole-Turner, R., Dolly Theology, Unpublished manuscript.

[4] ———, Is genetic engineering co-creation?, *Theology Today*, 44:338-349, 1987.

[5] Congregation for the Doctrine of the Faith, Instruction on respect for human life in its origin and on the dignity of procreation, *Origins*, 16(40):698-711, 1987.

[6] Dorff, R.E.N., Human Cloning: A Jewish Perspective, Testimony before the National Bioethics Advisory Commission, March 14, 1997.

[7] Einstein, A., Strange is our situation here upon Earth, in *The World Treasury of Modern Religious Thought*, J. Pelikan (ed.), Boston: Little, Brown and Company, 1990, 202-205.

[8] Fadlallah, M.H., as cited in Cloning should be punishable by death or amputation: Saudi cleric, *Agence France Presse*, March 13, 1997.

[9] Fletcher, J., *Humanhood: Essays in Biomedical Ethics*, Buffalo, NY: Prometheus Books, 1979.

[10] ———, *The Ethics of Genetic Control*, Garden City, NY: Anchor Press, 1974.

[11] ———, New beginnings in human life: A theologian's response, in *The New Genetics and the Future of Man*, M. Hamilton (ed.), Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1972, 78-89.

[12] ———, Ethical aspects of genetic controls, *N Engl J Med*, 285(14):776-783, 1971.

[13] Freundel, R.B., Judaism, in *On the New Frontiers of Genetics and Religion*, J.R. Nelson (ed.), Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1994, 120-136; Personal communication, March 6, 1997.

[14] Gustafson, J.M., Where theologians and geneticists meet, *dialog*, 33(1):7-16, 1994.

[15] ———, Genetic therapy: Ethical and religious reflections, *J Contemp Health Law Policy*, 8(Spring):183-206, 1992.

[16] Hathout, M., Cloning: Who will set the limits?, *The Minaret*, 19(3):8, 1997.

[17] Hefner, P., Cloning as quintessential human act, *Insights*, June 1997.

[18] Lewis, C.S., *The Abolition of Man*, New York: Macmillan Publishing Company, 1973, 70, 71.

[19] Lynn, B., *Genetic Manipulation*, New York: Office for Church in Society, United Church of Christ, 1977.

[20] McCormick, R.A., Should we clone humans?, *The Christian Century*, Nov. 17-24, 1993, 1148-1149.

[21] ———, Blastomere separation: Some concerns, *Hastings Center Report*, 24(2):14-16, 1994.

[22] Meilaender, G.C., Testimony before the National Bioethics Advisory Commission, March 13, 1997.

[23] Moraczewski, A.S., Cloning and the Church, Testimony before the National Bioethics Advisory Commission, March 13, 1997.

[24] ———, On human cloning, *Ethics and Medics*, 19(6):3-4, 1994.

[25] O'Donovan, O., *Begotten or Made?*, Oxford: Clarendon Press, 1984, 16.

[26] Peters, T., *Playing God? Genetic Discrimination and Human Freedom*, New York: Routledge, 1997; Personal communication, March 13, 16, 1997.

[27] Ramsey, P., *Fabricated Man: The Ethics of Genetic Control*, New Haven, CT: Yale University Press, 1970.

[28] ———, Moral and religious implications of genetic control, in *Genetics and the Future of Man*, J.D. Roslansky (ed.), New York: Appleton-Century-Crofts, 1966, 107-169.

[29] Reformed Church in America, Genetic engineering, in *Minutes of General Synod*, New York: Office of Social Witness and Worship, 1988, 61-74.

[30] Rorvik, D.M., *In His Image: The Cloning of a Man*, Philadelphia: J.B. Lippincott Company, 1978.

[31] Sachedina, A., Islamic Perspectives on Cloning, Testimony before the National Bioethics Advisory Commission, March 14, 1997.

[32] Shannon, T.A., Cloning, uniqueness, and individuality, *Louvain Studies*, 19:283-306, 1994.

[33] Shinn, R.L., *Forced Options: Social Decisions for the 21st Century*, San Francisco: Harper & Row Publishers, 1982, 142.

[34] Tendler, R.M., Testimony before the National Bioethics Advisory Commission, March 14, 1997.

[35] ———, as quoted in A.R. Melnick, Cloning a difficult issue for churches, *Pittsburgh Post-Gazette*, March 1, 1997, A-1.

[36] Verhey, A.D., Theology after Dolly, *The Christian Century*, March 19-26, 1997, 285-286.

[37] ———, Playing God and invoking a perspective, *J Med Philos* 20:347-364, 1995.

[38] ———, Cloning: Revisiting an old debate, *Kennedy Institute of Ethics Journal*, 4(3):227-234, 1994.

References: Section 3

Akaka, A.K., Cloning: A Native American Hawaiian Comment, Personal letter, April 5, 1997.

Anderson, J.K., *Genetic Engineering*, Grand Rapids, MI: Zondervan Publishing House, 1982.

Antes, P., Medicine and the living tradition of Islam, in *Healing and Restoring: Health and Medicine in the World's Religious Traditions*, L.E. Sullivan (ed.), New York: Macmillan Publishing Company, 1989, 173-202.

Athar, S. (ed.), *Islamic Perspectives in Medicine*, Indianapolis, IN: American Trust Publications, 1993.

Avery, C., Native American medicine: Traditional healing, *JAMA*, 265(17):2271, 2273, 1991.

Berg, S., Begotten, not made?, *Star Tribune* (Minneapolis), April 26, 1997, 7B.

Breck, J., Genetic Engineering: Setting the limits, in *Health and Faith: Medical, Psychological and Religious Dimensions*, J.T. Chirban (ed.), Washington, DC: University Press of America, 1991, 51-55.

Brown, R.G., Clones, chimeras, and the image of God: Lessons from Barthian ethics, in *Bioethics and the Future of Medicine: A Christian Appraisal*, J.F. Kilner, N.M.deS. Cameron, D.L. Scheidermayer (eds.), Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1995, 238-249.

Cahill, L.S., Cloning: Religion-Based Perspectives, Testimony before the National Bioethics Advisory Commission, March 13, 1997.

Carrese, J.A., L.A. Rhodes, Western bioethics on the Navajo reservation: Benefit or harm?, in *Bioethics: An Introduction to the History, Methods, and Practice*, N.S. Jecker, A.R. Jonsen, R.A. Pearlman (eds.), Sudbury, MA: Jones and Bartlett Publishers, 1997, 383-391.

Christian Life Commission, Southern Baptist Convention, Against Human Cloning, March 6, 1997.

Cohen, C.B., The moral hazards of human cloning, *Episcopalian Life*, June 1997, 24.

Cole-Turner, R., *The New Genesis: Theology and the Genetic Revolution*, Louisville, KY: Westminster/John Knox Press, 1993.

Congregation for the Doctrine of the Faith, *Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation*, 1987.

Cordova, V.F., Clones, Test Tubes, and Human Litters: A Native American Perspective, Personal statement, March 25, 1997.

Curran, C., Moral theology and genetics, *CrossCurrents*, 20(Winter):64-82, 1970.

Deloria, V. Jr., *God Is Red: A Native View of Religion*, Golden, CO: Fulcrum Publishing, 1994.

Demopulos, D., Personal statement, March 20, 1997.

Desai, P.N., Medical ethics in India, *J Med Phil*, 13(3):231-256, 1988.

———, Hinduism and bioethics in India: A tradition in transition, in *Theological Developments in Bioethics: 1988-1990*, B.A. Lustig (ed.), Dordrecht, The Netherlands: Kluwer Academic Publishers, 1991, 41-60.

Dorff, R.E.N., Human Cloning: A Jewish Perspective, Testimony before the National Bioethics Advisory Commission, March 14, 1997.

———, Testimony before the National Bioethics Advisory Commission, March 13, 1997.

———, Personal correspondence, March 5, 1997.

Duff, N.J., Clone with caution, *The Washington Post*, March 2, 1997, C1.

Easwaran, S.E., Brave new world, *Blue Mountain: A Journal for Spiritual Living*, May 1997, 11.

———, Personal correspondence, March 16, 1997.

Ellis, R.G., as cited in L. Scanlon, Cloning technology spawns moral dilemma, words of caution, *[Louisville] Courier-Journal*, April 7, 1997.

Fadlallah, M.H., as cited in Cloning should be punishable by death or amputation: Saudi cleric, *Agence France Presse*, March 13, 1997.

Feinberg, J.S., P.D. Feinberg, *Ethics for a Brave New World*, Wheaton, IL: Crossway Books, 1993.

Flack, H.E., E.D. Pellegrino (eds.), *African American Perspectives on Biomedical Ethics*, Washington, DC: Georgetown University Press, 1992.

For the president, Mr. Bill Clinton, *Hinduism Today*, April 1, 1997.

Freundel, R.B., Personal communication, March 6, 1997.

———, Judaism, in *On the New Frontiers of Genetics and Religion*, J.R. Nelson (ed.), Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1994, 120-136.

Gbadegasin, S., Personal communication, March 18, 1997.

Harakas, S.S., Questions about cloning, *Hellenic Chronicle*, 14(April 3):4, 1997.

———, Personal correspondence, March 18, 23, 1997.

———, Eastern Orthodox bioethics, in *Theological Developments in Bioethics: 1990-1992*, B.A. Lustig (ed.), Dordrecht, The Netherlands: Kluwer Academic Publishers, 1993, 117-132.

Häring, B., *Ethics of Manipulation: Issues in Medicine, Behavior Control, and Genetics*, New York: The Seabury Press, 1975.

Hathout, H., Islamic concepts and bioethics, in *Theological Developments in Bioethics: 1988-1990*, B.A. Lustig (ed.), Dordrecht, The Netherlands: Kluwer Academic Publishers, 1991, 103-118.

Hathout, H., B.A. Lustig, Bioethical developments in Islam, in *Theological Developments in Bioethics: 1990-1992*, B.A. Lustig (ed.), Dordrecht, The Netherlands: Kluwer Academic Publishers, 1993, 133-148.

Hathout, M., Cloning: Who will set the limits?, *The Minaret*, 19(3):8, 1997.

Hefner, P., Cloning as quintessential human act, in *Philosophy of Biology*, M. Ruse (ed.), Amherst, NY: Prometheus Books, 1998, 352-358.

Hultkrantz, A., Health, religion, and medicine in Native North American traditions, in *Healing and Restoring: Health and Medicine in the World's Religious Traditions*, L.E. Sullivan (ed.), New York: Macmillan Publishing Company, 1989, 327-358.

Jakobovits, R.I., Some letters on Jewish medical ethics, *J Med Philos*, 8:217-224, 1983.

John Paul II, The ethics of genetic manipulation, in *Medical Ethics: Sources of Catholic Teaching*, 2nd ed., K.D. O'Rourke, P. Boyle (eds.), Washington, DC: Georgetown University Press, 1993, 132-133.

Jones, D.G., *Brave New People: Ethical Issues at the Commencement of Life*, Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1985.

Keown, D., Personal communication, April 4, 1997.

———, *Buddhism and Bioethics*, New York: St. Martin's Press, 1995.

King, P., Personal communication, March 18, 1997.

Lipner, J.J., The classical Hindu view on abortion and the moral status of the unborn, in *Hindu Ethics: Purity, Abortion, and Euthanasia*, H.G. Coward, J.J. Lipner, K.K. Young (eds.), Albany, NY: SUNY Press, 1989, pp. 41-70.

Lopez, D., Personal communication, Mar. 18, 1997.

McCormick, R.A., Should we clone humans?, *The Christian Century*, Nov. 17-24, 1993, 1148-1149.

———, *How Brave a New World?: Dilemmas in Bioethics*, Garden City, NY: Doubleday & Company, Inc., 1981.

Meilaender, G.C., Testimony before the National Bioethics Advisory Commission, March 13, 1997.

Mitchell, C.B., as cited in Cloning of embryo stirs ethical concerns, in *The Christian Century*, November 10, 1993, 1117.

Mohler, R.A., Jr., The Brave New World of Cloning: A Christian Worldview Perspective, Unpublished manuscript, March 1997.

Moraczewski, A., Cloning and the Church, Testimony before National Bioethics Advisory Commission, March 13, 1997.

Murphy, N., Personal communication, March 10, 1997.

Murray, R.F., Personal communication, March 18, 1997.

Nakasone, R.Y., *Ethics of Enlightenment*, Fremont, CA: Dharma Cloud Publishers, 1990.

———, Personal communication, March 28, 1997.

National Conference of Catholic Bishops, Secretariat for Pro-Life Activities, *Remarks in Response to News Reports on the Cloning of Mammals*, February 25, 1997.

Nolan, K., Personal communication, March 22, 1997.

———, Buddhism, Zen, and bioethics, in *Theological Developments in Bioethics: 1990-1992*, B.A. Lustig (ed.), Dordrecht, The Netherlands: Kluwer Academic Publishers, 1993, 185-216.

O'Connor, John Cardinal, Testimony at the New York State Senate Committee of Investigation, Hearings on Cloning, March 13, 1997.

O'Donovan, O., *Begotten or Made?* Oxford: Clarendon Press, 1984.

Orthodox Church in America, *Statement on Recent Developments in Cloning Technology*, March 11, 1997.

ibn Saleh al-Othimin, M., as cited in Cloning should be punishable by death or amputation: Saudi cleric, *Agence France Presse*, March 13, 1997.

Palaniswami (ed.), *Hinduism Today*, Personal communication, March 21, 1997.

Paris, P.J., *The Social Teaching of the Black Churches*, Philadelphia: Fortress Press, 1985.

Peters, T., *Playing God? Genetic Determinism and Human Freedom.* New York: Routledge, 1997.

———, Personal communication, March 13, 1997.

Rahner, K., *Theological Investigations*, vol. 9, G. Harrison (trans), New York: The Seabury Press, 1972, 205-252.

Robinson, K.S., Personal letter, March 21, 1997.

Rosner, F., *Modern Medicine and Jewish Ethics*, New York: Yeshiva University Press, 1986, pp. 173-183.

Sachedina, A., Islamic Perspectives on Cloning, Testimony before the National Bioethics Advisory Commission, March 14, 1997.

———, Personal correspondence, March 21, 1997.

Sakim, as cited in J. Weiss, Religions aren't unanimous on cloning, *Dallas Morning News*, March 1, 1997, 1G.

Secundy, M.G., Personal letter, March 27, 1997.

Sharma, A., Personal letter, March 20, 1997.

Shinn, R.L., Personal communication, March 14, 1997.

Tendler, R.M., Testimony before the National Bioethics Advisory Commission, March 14, 1997.

———, as cited in L. David, Cloning of sheep revives ancient cultural fears, *The Columbus Dispatch*, March 16, 1997, 7B.

Tubpa, G.K., as cited in S. Dobee, Cloning poses challenge to religious leaders, Copely News Service, February 27, 1997.

Wassil, N.F., as cited in Egypt top Muslim cleric says cloning satanic, Reuters North American Wire, March 16, 1997.

Williams, P.N., Personal communication, April 7, 1997.

General Sources

Ames, D.A., C.B. Gracey, *Good Genes? Emerging Values for Science, Religion, and Society*, Cincinnati: Forward Movement Publications, 1984.

Blake, D.A., Ethics of biotechnology: Medical biotechnology for the nineties, *The Catholic World*, Sept./Oct. 1991, pp. 234-237.

Bouma, H. III, et al., *Christian Faith, Health, and Medical Practice*, Grand Rapids, MI: Wm. B. Eerdmans Publishing, 1989.

Brody, B., Current religious perspectives on the new reproductive techniques, in *Beyond Baby M: Ethical Issues in New Reproductive Technologies*, D.M. Bartels, et al. (eds.), Clifton, NJ: Human Press, 1990, 45-64.

Carney, T.P., *Instant Evolution*, Notre Dame, IN: University of Notre Dame Press, 1980.

Carrese, J.A., L.A. Rhodes, Western bioethics on the Navajo reservation: Benefit or harm? *JAMA*, 274(10):826-829, 1995.

Church of the Nazarene, Current moral and social issues: Genetic engineering and gene therapy, *Manual 1993-1997*, Kansas City, MO: Nazarene Publishing House, 1993.

Cole-Turner, R., *The New Genesis: Theology and the Genetic Revolution*, Louisville, KY: Westminster/John Knox Press, 1993.

———, Religion and the human genome, *Journal of Religion and Health*, 31(2 Summer):161-173, 1992.

———, Is genetic engineering co-creation?, *Theology Today*, 44:338-349, 1987.

———, Genes, Religion and Society: The Developing Views of the Churches, Unpublished manuscript.

Congregation for the Doctrine of the Faith, *Instruction on Respect for Human Life in Its Origin and on the Dignity of Procreation*, 1987.

Coughlan, M.J., *The Vatican, the Law, and the Human Embryo*, Iowa City: University of Iowa Press, 1990.

Cranor, C.F. (ed.), *Are Genes Us? The Social Consequences of the New Genetics*, New Brunswick, NJ: Rutgers University Press, 1994.

Duster, T., *Backdoor to Eugenics*, New York: Routledge, 1990.

Dyson, A., J. Harris (eds.), *Ethics and Biotechnology*, New York: Routledge, 1994.

Eberhard, K.E., Genetics and human survival, *Linacre Quarterly*, 40(3, August):167-181, 1973.

Ebon, M., Bring on the clones, *Human Behavior,* 8(February), 38-41, 1979.

Einstein, A., Strange is our situation here upon Earth, in *The World Treasury of Modern Religious Thought,* J. Pelikan (ed.), Boston: Little, Brown and Company, 1990, 202-205.

Eisenberg, L., The outcome as cause: Predestination and human cloning, *J Med Philos,* 1(4):318-331, 1976.

Ellison, C.W., *Modifying Man: Implications and Ethics*, Washington, DC: University Press of America, 1978.

Esbjornson, R. (ed.), *The Manipulation of Life*, San Francisco: Harper & Row Publishers, 1984.

Flack, H.E., E.D. Pellegrino, *African-American Perspective on Biomedical Ethics*, Washington, DC: Georgetown University Press, 1992.

Fletcher, J., *Humanhood: Essays in Biomedical Ethics*, Buffalo, NY: Prometheus Books, 1979.

———, *The Ethics of Genetic Control*, Garden City, NY: Anchor Press, 1974.

———, New beginnings in human life: A theologian's response, in *The New Genetics and the Future of Man*, M. Hamilton (ed.), Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1972, 78-89.

———, Ethical aspects of genetic controls, *N Eng J Med*, 285(14):776-783, 1971.

Freundel, R.B., Judaism, in J.R. Nelson, *On the New Frontiers of Genetics and Religion*, Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1994, 120-136.

General Conference of Seventh-day Adventists, Health Department, Christian Principles of Genetic Interventions, Silver Spring, MD, June 13, 1995.

———, Genetic engineering and the study of its implications, *Journal of the General Convention of the Episcopal Church 1985*, New York: General Convention, 1986, 179.

Guidelines in the area of genetic engineering, *Journal of the General Convention of the Episcopal Church 1991*, New York: General Convention, 1992.

Gustafson, J.M., Where theologians and geneticists meet, *dialog,* 33(1):7-16, 1994.

———, Genetic therapy: Ethical and religious reflections, *J Contemp Health Law Policy,* 8(Spring):183-206, 1992.

———, Basic ethical issues in the biomedical fields, *Soundings,* 53:151-180, 1990.

Hamilton, M., New life for old: Genetic decisions, *The Christian Century,* 86:741-744, 1969.

——— (ed.), *The New Genetics and the Future of Man,* Grand Rapids, MI: Wm. B. Eerdmans Publishing, 1972.

Häring, B., *Medical Ethics*, Notre Dame, IN: Fides Publishers, 1973.

Hathout, M., Cloning: Who will set the limits, *The Minaret,* 19(3):8, 1997.

Hefner, P., Cloning as quintessential human act, *Insights,* June 1997.

Heyd, D., *Genethics: Moral Issues in the Creation of People,* Berkeley, CA: University of California Press, 1992.

Hirschorn, K., On re-doing man, *Commonwealth,* 88(May 17):257-261, 1968.

Hughes, J.J., D. Keown, Buddhism and medical ethics: A bibliographic introduction, *Journal of Buddhist Ethics,* 2:105-124, 1995.

Human cloning and Catholic teaching, *The Medical-Moral Newsletter,* 31(1):1-2, 1994.

Hyde, M.E., L.E. Hyde, *Cloning and the New Genetics*, Hillside, NJ: Enslow Publishers, Inc., 1984.

Jacob, W. (ed.), *American Reformed Response,* New York: Center Conference of American Rabbis, 1983.

Jakobovits, R.I., *Jewish Medical Ethics*, New York: Bloch Publishing Co., 1975.

Jones, D.G., *Brave New People: Ethical Issues at the Commencement of Life,* Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1985.

Kahn, C., Can we achieve immortality?: The ethics of cloning and other life-extension technologies, *Free Inquiry,* Spring 1989, 14-18.

Kilner, J.F., N.M.deS. Cameron, D.L. Scheidermeyer (eds.), *Bioethics and the Future: A Christian Appraisal*, Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1995.

Kuhn, H.B., Prospect of carbon-copy humans, *Christianity Today,* 15:639-642, 1971.

Lammers, S., A. Verhey (eds.), *On Moral Medicine: Theological Perspectives in Medical Ethics*, Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1987.

Land, R.D., L.A. Moore (eds.), *Life at Risk: The Crises in Medical Ethics*, Nashville, TN: Broadman & Holman Publishers, 1995.

Langone, J., *Human Engineering: Marvel or Menace?*, Boston: Little, Brown & Co., 1978.

Lauritzen, P., *Pursuing Parenthood: Ethical Issues in Assisted Reproduction*, Bloomington, IN: Indiana University Press, 1993.

LeBar, M., The pros and cons of human cloning, *Thought*, 59(234):319-333, 1984.

Lewis, C.S., *The Abolition of Man*, New York: Macmillan Publishing Company, 1973, 70, 71.

Linzey, A., *Animal Theology*, Chicago: University of Illinois Press, 1994.

———, Human and animal slavery, in *The Bio-Revolution: Cornucopia or Pandora's Box*, P. Wheale, R. McNally (eds.), Winchester, MA: Pluto Press, 1990, 175-188.

Lipkin, M. Jr., P.J. Rowley (eds.), *Genetic Responsibility: On Choosing Our Children's Genes*, New York: Plenum Press, 1974.

Lustig, B.A. (ed.), *Theological Developments in Bioethics, 1990-1992*, vol. 3, Dordrecht, The Netherlands: Kluwer Academic Publishers, 1993.

———, *Theological Developments in Bioethics, 1988-1990*, vol. 1, Dordrecht, The Netherlands: Kluwer Academic Publishers, 1991.

Lynn, B., *Genetic Manipulation*, New York: Office for Church in Society, United Church of Christ, 1977.

Mackenzie, D., A new crusade for science?: Morality in science, *New Scientist*, 13(November):49, 1993.

Mangum, J.M., *The New Faith-Science Debate*, Minneapolis: Fortress Press, 1989.

McCormick, R.A., Blastomere separation: Some concerns, *Hastings Center Report*, 24(2):14-16, 1994.

———, Should we clone humans?, *The Christian Century*, November 17-24, 1993, 1148-1149.

———, *Health and Medicine in the Catholic Tradition*, New York: Crossroad Publishing, 1984.

———, *How Brave a New World? Dilemmas in Bioethics*, Garden City, NY: Doubleday & Company, Inc., 1981.

———, Reproductive technology: Ethical issues, in *Encyclopedia of Bioethics*, W.T. Reich (ed.), New York: Free Press, 1978, 1454-1464.

Meier, R.L., *Jewish Values in Bioethics*, New York: Human Sciences Press, 1986.

Melton, J.G. (ed.), *Encyclopedia of American Religions*, 4th ed., Detroit: Gale Research, 1993.

Meyer, J.R., Cloning human embryos: Why artificial human procreation is immoral, *Linacre Quarterly*, 62(2):22-29, 1995.

Mitchell, C.B., Genetic engineering: Bane or blessing?, Nashville, TN: Christian Life Commission of the Southern Baptist Convention, 1994.

———, Was Jesus an embryo?: The ethics of human embryo research and the *Brave New World*, Nashville, TN: Christian Life Commission of the Southern Baptist Convention, 1994.

National Council of Churches in Christ, *Genetic Science for Human Benefit*, New York: National Council of Churches, 1986.

———, *Genetic Engineering: Social and Ethical Consequences*, New York: National Council of Churches, 1983.

———, *Human Life and the New Genetics*, New York: National Council of Churches, 1980.

Nelson, J.R., The role of religions in the analysis of the ethical issues of gene therapy, *Human Gene Therapy*, 1:43-48, 1990.

———, *Human Life: A Biblical Perspective for Bioethics*, Philadelphia: Fortress Press, 1984.

———, Genetic science: A menacing marvel, *The Christian Century*, July 6-13, 1983, pp. 636-638.

———, *Science and Our Troubled Conscience*, Philadelphia: Fortress Press, 1980.

———, (ed.), *On the New Frontiers of Genetics and Religion*, Grand Rapids, MI: Wm. B. Eerdmans Publishing Company, 1994.

Niebuhr, G., Suddenly, religious ethicists face a quandary on cloning, *New York Times*, March 1, 1997, 1, 10.

O'Donovan, O., *Begotten or Made?*, Oxford: Clarendon Press, 1984.

Peters, T., *Playing God? Genetic Discrimination and Human Freedom*, New York:Routledge, 1997.

———, 'Playing God' and germline intervention, *J Med Philos*, 20:365-386, 1995.

Peters, T.F., R.J. Russell, The Human Genome Project: What questions does it raise for theology and ethics? *Midwest Medical Ethics*, 8(1 Summer):12-17, 1992.

Playing God, *Hinduism Today*, June 1997, 22-25.

Rahman, F., *Health and Medicine in the Islamic Tradition: Change and Identity*, New York: Crossroad Publishing, 1989.

Rahner, K., *Theological Investigations*, vol. 9, G. Harrison (trans.), New York: Crossroad, 1972.

Ramsey, P., *Fabricated Man: The Ethics of Genetic Control*, New Haven, CT: Yale University Press, 1970.

———, Moral and religious implications of genetic control, in *Genetics and the Future of Man*, J.D. Roslansky (ed.), New York: Appleton-Century-Crofts, 1966, 107-169.

Ratanakul, P., Bioethics in Thailand: The struggle for Buddhist solutions, *J Med Philos*, 13(3):301-312, 1988.

Reformed Church in America, Genetic engineering, in *Minutes of General Synod*, New York: Office of Social Witness and Worship, 1988, 61-74.

Reiss, M.J., R. Straughan, *Improving Nature?: The Science and Ethics of Genetic Engineering*, Cambridge, UK: Cambridge University Press, 1996.

Roberts, M.A., Human cloning: A case of no harm done?, *J Med Philos*, 21(October):537-554, 1996.

Rorvik, D., *In His Image: The Cloning of a Man*, Philadelphia: J.B. Lippincott Company, 1978.

Roslansky, J.D. (ed.), *Genetics and the Future of Man*, New York: Appleton-Century-Crofts, 1966.

Rosner, F., J.D. Bleich (eds.), *Jewish Bioethics*, New York: Sanhedrin Press, 1979.

Shannon, T.A., Testimony before Senate Hearing on Human Cloning, Commonwealth of Massachusetts, March 10, 1997.

———, *Made in Whose Image?: Genetic Engineering and Christian Ethics*, Atlantic Highlands, NJ: Humanities Press, 1997.

———, Cloning, uniqueness, and individuality, *Louvain Studies*, 19:283-306, 1994.

Shinn, R.L., *The New Genetics: Challenges for Science, Faith, and Politics*, Wakefield, RI: Moyer Bell, 1996.

———, *Forced Options: Social Decisions for the 21st Century*, San Francisco: Harper & Row Publishers, 1982, 142.

———, Perilous progress in genetics, *Social Research*, 40(1):83-103, 1974.

Shinn, R.L., P. Albrecht (eds.), *Faith and Science in an Unjust World*, Philadelphia: Fortress Press, 1980.

Simmons, P.D., *Birth and Death: Bioethical Decision-making*, Philadelphia: The Westminster Press, 1983.

Steinfels, P., Beliefs, *New York Times*, March 8, 1997, 15.

Stinson, C., Theology and the Baron Frankenstein: Cloning and beyond, *The Christian Century*, January 19, 1972, 60-63.

Studdard, A., The lone clone, *Man and Medicine*, 3(2):109-117, 1978.

United Church of Christ, General Synod 17, A Pronouncement on the Church and Genetic Engineering, Cleveland: United Church of Christ, 1989.

United Methodist Church, New developments in genetic science, *The Book of Resolutions of the United Methodist Church*, Nashville, TN: United Methodist Publishing House, 1992, 325-340.

Vaux, K. (ed.), *Who Shall Live?: Medicine, Technology, Ethics*, Philadelphia: Fortress Press, 1970.

Verhey, A.D., Cloning: Revisiting an old debate, *Kennedy Institute of Ethics Journal*, 4(3):227-234, 1994.

Weir, R.F. (ed.), *Genes and Human Self-Knowledge*, Iowa City: University of Iowa Press, 1994.

Wheale, P., R. McNally, *Genetic Engineering: Catastrophe or Utopia?*, New York: St. Martin's Press, 1988.

Williams, P.N. (ed.), *Ethical Issues in Biology and Medicine*, Cambridge, MA: Schenkman Publishing Company, 1973.

Woodward, K.L., Today the sheep..., *Newsweek*, March 10, 1997, 60.

World Council of Churches, *Biotechnology: Challenge to the Churches*, Geneva: World Council of Churches, 1989.

———, *Manipulating Life: Ethical Issues in Genetic Engineering*, Geneva, World Council of Churches, 1982.