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HUMAN REPRODUCTION BY CLONING IN THEOLOGICAL PERSPECTIVE

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I. INTRODUCTION

This Article presents a Christian theological perspective on the intent to clone another human being.¹ The Christian belief in the divine creation of human beings includes, most importantly, our being created in the image of God. Evidently, the outcome of this creation is simply the fully matured human being as we find him or her, together with the capacity to reproduce, and the eventual death of each individual. Having placed human cloning in this theological context, how ought we to regard the scientific prospect of cloning as a method of human reproduction and set to the ongoing debate on the matter? Cloning, unlike the projects of medicine, does not enhance existing individual human lives but rather carries the prospect of replication and (according to "futurology") the possible, indefinite extension of individual human lives.² This, of course, is not the divine goal for human beings and should not, in any way, be confused with the hopes of human salvation.

The prospect of cloning human beings is now at hand, but the project itself bristles with conundrums that, this Article contends, eliminate it as a legitimate technique for enhancing human reproduction. This Article suggests that cloning, as a proposed technique for the reproduction of whole human organisms, possesses inherent moral flaws and legal contradictions that point to a violation of something basic in the created order. This Article proposes that other

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1. MARTIN EBON, *THE CLONING OF MAN: A BRAVE NEW HOPE--OR HORROR?* (1978); Ruth F. Chadwick, *Cloning*, 57 *PHIL.* 201-09 (1982); MARGARET O. HYDE & LAWRENCE E. HYDE, *CLONING A MAN? CLONING AND THE NEW GENETICS* 95-112 (1984); Martin LaBar, *The Pros and Cons of Human Cloning*, 59 *THOUGHT* 319-33 (1984); Robert Pollack, *Beyond Cloning*, N.Y. TIMES, Nov. 17, 1993, at A27; Kathy A. Fackelmann, *Cloning Human Embryos: Exploring the Science of a Controversial Experiment*, 145 *SCI. NEWS.* 92, 92-93, 95 (1994); Howard W. Jones et al., Editorial, *On Attempts at Cloning in the Human*, 61 *FERTILITY & STERILITY* 423-26 (1994); John A. Robertson, *The Question of Human Cloning*, HASTINGS CTR. REP., Mar.-Apr. 1994, at 6-14.

2. See Richard Kadrey, *Go Forth and Multiply: G. Richard Seed on Why Cloning Is God's Work*, WIRE, Mar. 1998, at 150.

technologies, namely, *in vitro* fertilization (IVF) and gene research,³ working together will likely supply the reproductive enhancements desired and produce the results that cloning cannot. Further, cloning should be rejected as a method of human reproduction because the procedures for perfecting such a process would inevitably involve morally unacceptable conditions and produce morally unacceptable results. First, the success of cloning can only be determined by observing the entire life-cycle of a cloned human being, and in order to be morally acceptable, this must be done before initiating human cloning in the first place—there is no way to legitimate a “dry run.” Second, it is impossible to “place,” in the social services sense of the term, a cloned child in a healthy relationship with parents and siblings.

II. THE ROLE OF THEOLOGY

For Christians involved in the public debate over the cloning of human beings, nature as divine creation functions, either directly or indirectly, as a basic belief. To some extent, they contend that informed religious perspectives must be allowed to participate in the development of a rational and ethical social and legal consensus. And Christians are now becoming more aware that this constructive approach to achieving public consensus is required in the present context, an approach quite different from the approach taken centuries earlier when Christianity once wielded more social authority.

Adherents of Christianity and the adherents of many other religions who hold a doctrine of creation as a part of their basic beliefs approach ethical issues differently, but all of them consider this fundamental theological tenet when evaluating issues affecting human life. Also, although they may have different traditions of scripture interpretation their basic belief in the divine creation of nature (and even of human nature) affects their judgment in the human cloning debate. The fact of this basic, common belief explains why the notion of nature as the product of a divine act, one that continues and persists through time, has proven to be so resilient. Certainly many in the public debate simply avoid the question of human beings as the creation of God, but as this Article contends, this doctrine of creation, functions, on a general level, as the “best explanation” of the cosmic system that we have. Additionally, the influence of informed religious beliefs is growing and is indicated in many ways, not the least of which is the many inter-disciplinary arrangements between theology and science.

3. Edward M. Berger & Bernard M. Gert, *Genetic Disorders and the Ethical Status of Germ-line Gene Therapy*, 16 J. MED. & PHIL. 667-83 (1991); W. French Anderson, *Human Gene Therapy*, 256 SCI. 808-13 (1992); Andrea Bonnicksen, *Genetic Diagnosis of Human Embryos*, HASTINGS CTR. REP., July-Aug. 1992, at S5-S11.

It is difficult to underestimate the significance of the Christian belief in the divine creation of human nature in understanding how informed Christians will engage in the debate over human cloning. For many scientists, medical professionals, and interested observers who are religiously committed, this theological doctrine provides the "best explanation" for human existence. Precisely this point is very important in the debate about human cloning. The notion that human beings are not self-explanatory connects closely with the notion that human beings are not self-generating, that is, nothing about human mental activity determines the processes essential to reproduction. Human beings cooperate with these processes whether we are speaking of humans who sexually reproduce or of humans who scientifically enhance their capacities to reproduce and who then successfully bring newborns to term.

At the heart of the doctrine of creation is the identification of male and female humans as beings created in the image of God. This doctrine is the source not only of the notion of the incalculability of human value, but also of human responsibility to the entire created order. Human responsibility incrementally increases with the expansion of knowledge, a fact which places, and has always placed, man at the "center" of this order. Other creatures simply do not reflectively interact with their environments in this way. In some regrettable cases, humans have mismanaged and thus destroyed their environments, while in others, they have reasonably managed and thus sustained and renewed their environments.

The capacity of humans to produce or re-produce living things repeatedly reintroduces the doctrine of a Creator of this comprehensive order. The sense that human beings cooperate with this order is directly connected with the impulse to identify their ethical entailments of such responsibility. The sense that human beings are agents, who cooperate on a massive scale with the processes they find in their environments, places ethical considerations very high on the agenda when considering the application of scientific knowledge and technology to the created order. Christians rather straightforwardly offer an account of why this must be so.

Perhaps the oddest development in the recent publicity of human cloning as a reproductive alternative is Dr. Richard Seed's appeal to the theology of creation and in particular to the human being as embodying the image of God.⁴ Equally odd is his contention that cloning is somehow part of the destiny of man, and thus the fact that man is made in the image of God and remade in the resurrection makes cloning a sort of way station on mankind's spiritual pilgrimage. This theologically uninformed declaration by this scientist irritates

4. See Kadrey, *supra* note 2, at 150, 182.

theologians as much as the uninformed, yet socially influential statements about nature by theologians irritate scientists. The resurrection of the body is central to the notion of salvation and of life after death in a new heaven and a new earth. Although an extensive modern tradition re-interprets the Christian doctrine of resurrection in immanent terms, this strategy has been notoriously lame on matters of the beginning and end of human nature. Thus, it is best to maintain the transcendent referent: resurrection is a future event or process that occurs entirely apart from the human ability determine it. This must be mentioned here only because Dr. Richard Seed has attempted to connect his idea of human cloning with the doctrine of resurrection.⁵

Of course, the real challenge to any ethical system that builds upon the relationship between the divine and the human is the requirement of wisdom in achieving moral consensus and legal definition. One may find it more exhilarating to think of man in terms of his "free will" to act rather than of genetic evolutionary determinism, but this does not remove the requirement to discern the value of certain actions. Ethical reasoning cannot properly be reduced to or confused with the structures of scientific reasoning because their domains are vastly different. There is little significance to how many successful cloning techniques might be developed if their costs are relatively the same; however, there is much significance to the question of whether these techniques should be applied to human beings at all. News stories continue to report eugenic practices, even in more advanced societies, and these reports will continue to cause rounds of public condemnation.⁶ Truly a vast difference exists between scientific and moral reasoning,⁷ but Christian theology claims to

5. See Kadrey, *supra* note 2, at 150.

6. DANIEL J. KEVLES, IN THE NAME OF EUGENICS: GENETICS AND THE USES OF HUMAN HEREDITY (1985); Arthur L. Caplan, *The Meaning of the Holocaust for Bioethics*, HASTINGS CTR. REP., July-Aug. 1989, at 2-3.

7. H. TRISTRAM ENGELHARDT, JR., THE FOUNDATIONS OF BIOETHICS (2d ed. 1996); LeRoy Walters, *The Ethics of Human Gene Therapy*, 320 NATURE 225-27 (1986); W. French Anderson, *Human Gene Therapy: Why Draw a Line?*, 14 J. MED. & PHIL. 681-93 (1989); G. Fowler et al., *Germ-line Gene Therapy and the Clinical Ethos of Medical Genetics*, 10 THEORETICAL MED. 145-67 (1989); Marc Lappe, *Ethical Issues in Manipulating the Human Germ Line*, 16 J. MED. & PHIL. 621-39 (1991); Council for Responsible Genetics, *Position Statement on Cloning* (visited June 4, 1998) <<http://www.essential.org/crg/cloning.html>>; Philip Elmer-Dewitt, *Cloning: Where Do We Draw the Line?* TIME, Nov. 8, 1993, at 64-70; Munawar Ahmad Anees, *Human Clones and God's Trust: An Islamic View*, NEW PERSP. Q., Winter 1994, at 23-24; National Advisory Board on Ethics in Reproduction, *Report on Human Cloning Through Embryo Splitting: An Amber Light*, 4 KENNEDY INST. ETHICS J. 251-82 (1994); Glenn McGee, *Ethical Issues in Genetics in the Next 100 Years*, Lecture at the UNESCO Asian Bioethics Conference, Kobe, Japan (Nov. 6, 1997).

offer the best explanation of their relationship and the most satisfactory/workable connection between them.⁸

III. THE CAPABILITIES OF HUMAN ACTION

We cannot begin to understand the obligations of human beings in the matter of cloning whole human organisms (that is, human beings) without also assessing our capabilities to do so, because these issues are inseparable. And as the debate over human cloning progresses now that the successful cloning of large animals has been accomplished, the moral issues surrounding human cloning become clearer. Are there any conditions under which the human capability to clone other humans entails the moral competency to take this course of action? Do parallels exist between the decisions of parents to have offspring through the normal fertilization process and the decisions of individuals to have offspring through a cloning process? Are there conditions, such as the cloning of a dying child by his or her parents, that might justify such an action?

These questions become difficult to answer when one considers the phenomenon of "technical intelligence"—what I regard as a subsidiary form of scientific reasoning. Many things about technology and about how man-made things work are beyond our ability, even our mathematical ability, to describe; nevertheless, at a certain practical level, we are able to contrive ways of producing machines that do work. But it is precisely this work that has often made the successes of technology seem far more ambiguous than the successes of natural science, even though they are actually inseparable in practice. The ethical questions arise at the technological edges of science, and increasingly we see how these questions involve every aspect of scientific endeavor. Technology more than natural science, presses us ethically, because technology is closer to larger human events than the highly specialized research of many natural scientists, and the consequences of our thoroughly technologized lives, are often much graver than the consequences of natural science upon our lives. Being thoroughly technologized means that every aspect of our survival and well-being depends upon the ameliorating contribution of human technologies. We think biologically and biographically about technology. The refinement of instrumentality in technology implies the modification of relations with us as

8. See *SCIENCE AND THEOLOGY: THE NEW CONSONANCE* (Ted Peters ed., 1998). One dominant rival way of thinking and evaluating is generally termed "utopianism." Utopianism includes sets of beliefs whereby the ingenuity of the human community, with the advantageous help of evolution, will inevitably lead to an ultimate, progressed state. But this Article will not pursue such a path of wisdom.

individual persons, with other persons, and with the larger environment. Technical intelligence, as it becomes an appropriate description of our lives, becomes part of how we describe the integrated selves and the communities that comprise our world—especially the world of human reproduction.

The challenge before us then is to show how our technical capabilities and our competency to make ethical judgments are to function together. For some, human cloning is fully consistent with the beneficial tendencies of technical intelligence. For others, human cloning, especially for reproductive purposes, is categorically unacceptable because it flies in the face of our moral competencies. Given our claims of human value and uniqueness, any technological development that would compromise these basic values is to be ruled out, *tout court*. The problem with human competency to make moral judgments regarding the application of new innovative technologies stems from the exclusive nature of the ongoing debate that exists among scholarly scientific, engineering, and ethics communities. Interdisciplinary efforts may be forged among them; indeed, universities have departments of ethics, such as Science and Technology Studies, which exist for this purpose, but the task of articulating moral judgments that will apply to educational institutions, for instance, is woefully incomplete. At this point, “moral competency” might seem to be too weak a term considering our technological capabilities, but this is not the case given the balance between the possible will to do good by human cloning and the impossibility of a moral resolution on the matter. The benefit of working with general religious principles that are held by persons from various religions is that a common foundation of religious commitments draw people together.

The reproductive challenge faced by all persons, religious or irreligious, includes the persistent realities of infertility, birth defects, and pre-natal death, and the cultural confusion that occurs when the technologies of birth control coexist with the technologies of birth enhancement. Two factors impinge upon all considerations of human cloning as a means of meeting the reproductive challenge. The first is the experimental edge which the theologian of genetic ethics, Dr. Ted Peters, points to in his book, *Playing God*,⁹ and which Dr. Richard Seed expressed in his ridiculously arrogant public statement.¹⁰ The

9. TED PETERS, *PLAYING GOD: GENETIC DETERMINISM AND HUMAN FREEDOM* (1997). See also GENETICS: ISSUES OF SOCIAL JUSTICE (Ted Peters ed., 1998); TED PETERS, *FOR THE LOVE OF CHILDREN: GENETIC TECHNOLOGY AND THE FUTURE OF THE FAMILY* (1996).

10. See *Chicago Physicist Says He Will Try to Clone Human*, ASSOCIATED PRESS, Jan. 7, 1998, available in 1998 WL 6636335; Peter Kendall et al., *Scientist's Fertile Imagination Spawning Global Debate on Cloning*, CHI. TRIB., Jan. 8, 1998, at 1; Marilyn Marchione, *Humans May Be Cloned Soon, Scientist Claims; Biologist Shocks Colleagues with News of Project in Chicago*, MILWAUKEE J. & SENTINEL, Dec. 6, 1997, at 1; Joyce Howard Price, *Cloning Touted as Infertility Solution Biologist's Proposal Draws Threat of Ban*, WASH. TIMES (D.C.), Dec. 11, 1997, at A9; Cindy Schreuder et al., *Attitudes Shift on Reproductive Technology; Scientist Says Seed Talked About*

experimental edge factor consists largely in the issue of whether there is a technological determinant in human cloning or just a very strong desire to "replicate" oneself or another's self. I reject determinism, but the technological culture to which we belong considers the desire to clone human beings as requiring a check only at the points of current technological limitations, e.g., too much trial and error will mean the death of real persons. The second factor involves limitations and obligations: the human factor, and the implications of a reverence for life.

Those who would call for some standard of reverence for life cannot do much with the arguments everywhere that no cloned human being would ever possess anything less than the rights accorded to any other human being. Quite clearly, being a person would be no less true of someone born through whole organism human cloning than through normal processes of fertilization. What ethicists will have to do with President Clinton's moratorium on federally funded research on human cloning is to show why this moratorium should become a prohibitive law and why the interests of some scientists and individuals in cloning human life given technological and legal supports, should still be proscribed.

IV. REACTIONS TO THE PROSPECT OF WHOLE ORGANISM CLONING

A number of acts have been undertaken by those who anticipate that some will rush to clone human beings. President Clinton's moratorium on federally funded research on human cloning shows this, as do federal and state legislative activities to draft laws banning such research. Of course these actions, have to cope with the larger realities of genetic research and cloning that have more modest designs than whole human organisms.

Theological/ethical position papers will soon lead to more formal, doctrinal statements by a number of Christian denominational bodies, including Lutherans, Methodists, the Orthodox, Presbyterians, the Roman Catholic Church, Southern (and other types of) Baptists, United Church of Christ, and others. Muslims and Hindus are also carefully debating the subject.¹¹ Whatever may be the religious background of these bodies, these statements typically reflect the liberal or conservative majorities of those drafting them. Two common threads are the Creator-creature relationship and the requirement to respect human life, but this is where the similarities end. Depending upon the weight given to the value of

Cloning. CHI. TRIB., Jan. 9, 1998, at 5; Rick Weiss, *Scientist Plans to Clone Humans; Anticipating Ban, Researcher Says He Has Assembled Doctors, Volunteers*, WASH. POST, Jan. 7, 1998, at A03. See also Kadrey, *supra* note 2, at 150, 182 (quoting Dr. Seed as saying in an interview, "When we attain an extended lifespan and access to unlimited knowledge, we will become God-like.").

11. See Anees, *supra* note 7.

individual decision-making or the inherent limits surrounding sperm/egg fertilization (for Catholics this is restricted to the sexual intercourse of husband and wife), a great divergence of perspectives can be expected.

Behind all of the religious statements is a sound appreciation of the technical trajectory of cloning research. Few religious statements raise what might be called "monstrous speculations" about human cloning—these would include the suggestions that new organisms would be created for the purpose of organ harvesting or for the raising of armies of clones, or that a genius or tyrant would continue his or her life through a clone. However, a general fear of eugenic ideology is common to these religious perspectives, and this will likely arouse the consciences of those otherwise disposed toward liberalization—much more than the option of abortion did. The real concerns here are whether we are playing God, whether we are opening the door to the future reproduction of human beings apart from family and community commitments, and whether the desire to clone human beings lies more with cavalier attitudes of consumerism than with actual human need. Christian theologians and ethicists, along with many others, are still very dissatisfied with the ethical conditions surrounding decisions to utilize other reproductive technologies, such as IVF. And any argument defending human cloning for reproductive purposes seems horribly lacking when one considers the way in which the human community would have to be made ready for such a radical procedure.

Undoubtedly, reproductive intent (that is, the simple desire to have a child), comes closest to the kind of appeal that could begin to carry ethical weight. But not upon closer scrutiny. No argument from technological determinism is found here—the will to clone and the justification to do so do not match, even in the case of limited reproductive options. One of the basic reasons why they do not match is inherent in the problems of gene-technology and ethical reasoning: to reduce human beings to the sum of their genetic codes (in popular interpretation) is to devalue the human reproductive process. The tendency to classify the cloning of human beings as merely a question of developing sophisticated breeding techniques is unacceptable reasoning. This becomes clear when we think of the legal status of children: cloned children would have all the rights of other children.¹² And carrying out the capability to clone becomes

12. SUSAN MOLLER OKIN, *JUSTICE, GENDER, AND THE FAMILY* (1989); Marvin R. Natowicz et al., *Genetic Discrimination and the Law*, 50 AM. J. HUM. GENETICS 465-75 (1992); Mary B. Mahowald, *Reproductive Genetic and Gender Justice*, in *WOMEN AND PRENATAL TESTING: FACING THE CHALLENGES OF GENETIC TECHNOLOGY* 67-87 (Karen H. Rothenberg & Elizabeth J. Thomson eds., 1994); United Nations Educational, Scientific and Cultural Organization, *Universal Declaration on the Human Genome and Human Rights* (visited June 4, 1998) <<http://www.unesco.org/ibc/uk/genome/projet/index.html>> (the General Conference of UNESCO adopted this declaration on Nov. 11, 1997, after four years of elaboration by the International Bioethics Committee of UNESCO).

especially repugnant if our society's eugenics ideologies persist.

Quite often, the intent to clone is fundamentally selfish, as one attempts to prolong one's own life (perhaps even indefinitely).¹³ The interest to innovate upon oneself in order to extend one's lifetime runs counter to longstanding moral and legal thought regarding the appearance of new human lives in the human community. The contradiction here is quite obvious. Either the cloned offspring is a kind of extension of oneself, and thus in some way an extension of a single identity, or the clone is entirely another person.

Some rather wild notions have even emerged using the faulty analogy of the mind as the "software" and of the brain as "hardware," whereby one's "software" could be "downloaded" and then "uploaded" into the "hardware" of one's clone. No thought is given to what time of life the clone would have to experience this along with the disregard for the integrity of experience as lived by the cloned offspring. Such thinking—worse than banal—exposes how desperately we need to recover spiritual and religious notions of the human soul. After all, the intimate relation at issue here involves more than merely having genetic or biological twins.

To the extent that the human soul requires both a healthy body and a healthy family for its development, cloning as human reproduction sets up an extraordinary set of challenges. Although a clone would be a biological twin, cloning puts the issue of psychological "twin-ness" into future moral and ethical debates. Although scientists may have a particular interest in studying the psychological traits of twins who are reared separately from each other, these scientists are interested precisely because the separate rearing of twins is not usually desirable for sets of twins—it represents only an unwelcome rupture of family relations. Technically, the clone is the twin of the person who provides the genetic material for him or her; however, in a profoundly disturbing way, a rupture in relationship between these twins would become normative because of the "older" twin's intent. This is vastly different from infants who are separated from each other at birth through no fault of their own. The issue of the relatedness of the twins and the power of the older sibling over the younger would be profound. Whatever private interests may be involved in such a

13. This is the case with Dr. Seed's public statements. He is quoted as saying:

You can now seriously contemplate unlimited life extension and unlimited access to knowledge. The Scottish cloning experiments proved that you can reprogram the DNA in cells back to division zero—back to undifferentiated cells. If we can learn to reprogram DNA back from division 30 to division 15, that would be great. You're going to be 20 years old again! And we could repeat that as many times as you'd want. It's mind boggling.

Kadrey, *supra* note 2, at 150.

decision to clone, the human soul's need for healthy sibling relations and for the encouragement of personal freedom through true parenting are subverted to the disadvantage of the child. Definitions of parenting and sibling relations that are so fundamental to the sense of self and respectful familial relationships cannot be sustained under such conditions. The capability of humans to utilize cloning as a reproductive technique is, to say the least, fundamentally problematic.

Theorizing about human beings in terms of embodiment takes on new meaning in this light, requiring a deep ecology of the soul. By this I mean to say that it is essential to the public debate regarding the prospect of human cloning that we candidly describe the ways in which the self requires, for physical and personal well-being, the worship of God and a wholesome community life. Reproduction, for all of the wholesome things it brings to a person's life, is really about giving life to another person and nurturing that life until he or she can enjoy life through his or her willing embrace of these very conditions for well-being. However, with human cloning the cloned persons is disadvantaged in the interest of the personal well-being of the person who wills to clone. The tragic sense of persons who would "wish they had never been born" is too likely here. Certainly, Christian theologians and ethicists are determined to see these children brought into the world and raised by married men and women according to the "pattern of creation," that is, according to wholesome relationships. These are some of the strongest issues facing the proponents in human cloning. Ultimately, the will to clone oneself, one's spouse, another relative, or even some other extraordinary person, begins to strike one as more caprice than anything else.

V. THE EVIDENT PROBLEMS OF HUMAN CLONING

One also needs to consider the many problems that cloning entails: legal, experimental, philosophical, sociological, self-referential, and cultural. Given the legal battles in recent years over the human reproductive cells of divorced partners and the growing sentiment that developing human fetuses should be accorded essential rights, the legal issues surrounding cloning become far more complex than the challenges that the technology itself presents. This complex legal situation is the primary reason for the moratorium on federal funding and will probably lead many legislatures to quickly pass laws that very severely restrict human cloning.

The conundrum of trial and error in the cloning process is also a great obstacle to the prospect of human cloning. Essentially, there is no room for trial and error in cloning human beings. Having to "get it right the first time" means having to get it best the first time. Thus, society should tolerate no error in human cloning experiments. Because some aspect of the laboratory work would require the testing of fully grown human beings up until the moment of

death (in order to determine the success of the project), the conditions under which approval should be granted are simply unrealizable.

Of course, cloning is not the straightforward replication of an individual because a person only “becomes” who he or she is through the complex relationships of community and locale. That society would consider cloning a positive alternative to advanced IVF techniques for bearing children is unfortunate, and problems with IVF at present do not render the application of cloning techniques the “better” alternative. Already, many aspects of IVF have not received adequate ethical debate and definition, and if utilized on a much larger scale, IVF would wreak havoc in terms of the emotional and financial costs involved. Reproduction, by definition, means the production of a unique human being who joins the community of other human beings in shared humanity with other children. But the knowledge that a person might be the product of replication, rather than reproduction, would put insuperable burdens upon children and adults.

One could argue, of course, that dependable techniques for the successful cloning of whole human organisms exist, and therefore the decision whether or not to clone is the prerogative of any individual who might be so disposed. But how could this prerogative be stated, let alone justified? Certainly, the prerogatives of parents who want to have children go unquestioned—this is the case with or without fertility-enhancing medical intervention. And, having children by adoption is more complicated and legal, accredited social service bodies test the motives of prospective parents. The issue of cloning requires fundamental thinking along the lines of the rights and the prerogatives individuals might have to “opt” for such a procedure, and the issue is far from settled.

From the other side of the issue, segments of the scientific community interested in cloning as a form of human reproduction very likely must deal with new laws that would make the procedure a criminal offense. This kind of legal development will cause the extreme reticence of the private economic sector to put forward the research and development funds for larger research projects.

Then there is the court of public opinion, where fickleness is mixed with sensibility—one wonders what the public reaction will be to Stephen Hawking’s prediction that in the next century, barring totalitarianism, an “improved human-being” will be produced.¹⁴ But we are far more sensitive to reproductive issues than we once were. This puts scientists yet again into a public relations

14. *Presidential Race 2000 off to Early Start* (ABC television newscast, Mar. 7, 1998) (transcript available in 1998 WL 7393161).

battle over the “democratization” of their findings.¹⁵ This can only be a good development, and university departments of Science and Technology Studies that consider ethical components of scientific developments are already accommodating this public sensitivity. These departments can become real allies in the mediation of important technical and moral issues surrounding the scientific interest in human cloning.

It is precisely here, at the informational level, that religious communities gather their information and consider the legitimacy of a technological innovation. Once they do, a particular scientific practice encounters considerable scrutiny in gaining legitimacy because arguments supporting the particular practice will have to respond to questions coming from many different directions. Some technologies do “get past” the new structures of legitimization, but only because these technologies originated in industrial areas where new products are predictably harmless, or because they were patented but were not yet marketed on a mass scale. In either case, the products in question have not yet entered the mainstream of democratized review and analysis. They have not yet undergone the rigors of success appeal to these legitimizing structures. Of course, the outcomes of democratization can go against religious points of view as well, but this only makes for healthy self-criticism and for careful review of the actual social impacts of those new technologies.

From the processes of democratization, a number of questions come to mind. Could cloning as reproduction become a criminal offense? In my opinion, many theologians and ethicists would be quite happy with cloning experiments being performed on human beings, resulting in new technologies that could replace chemotherapy in fighting cancers or cause the regeneration of body parts. But even this is difficult, because there is no question that scientists could achieve these results. But with reproduction, such a balance does exist between hope and trust in medical research and the desire for a child, and the government can hardly be expected to control the multitude of contradictions. This is already the case with IVF and fertility drugs. If one also considers the case by case situation of different family arrangements, the state is then pushed beyond its limits to regulate the practice of cloning human beings.

15. Democratization of science is a primary agenda of the many Science and Technology Studies departments in American universities. Democratization requires that scientific communities become politically and socially accountable for their work and the impact of their ideas upon culture at large.

If limits should be placed upon reproductive technology, a very broad question will likely be asked: in a world where anyone could have a child, who may not have one? The technical community must participate more in the pursuit of proper answers to such a question, especially considering the fact that legal boundaries will soon be established. But much more fundamental, the question of whether cloning is, by its very nature, inhumane comes to the fore. Even before a cloned child's basic human rights are considered, so many factors of human cloning appear inhumane that significant segments of the human community have already resorted, and will continue to resort, to moratoriums on the human cloning research—in which case, a permanent one. Cloning fails to satisfy the full range of human interest—social, moral, legal, and otherwise. It is not clear that cloning, as a human reproductive technique, can secure human rights. Already, IVF and the prospect of controlling birth defects through genetic manipulation raise enough problems for society to encounter.

Finally, cloning, as a form of human reproduction, ultimately looks like a personal project designed to fulfill futuristic and aesthetic self-interest. Unfortunately, this is a dangerous aesthetic. When one considers that modern technology also appeals on the level of pleasure and beauty, one can see why “aesthetics” is properly used. For many, when a machine works, it is beautiful, and when it is remade in a next “generation,” it is even more beautiful. The practice of science, from experimentation to theory, is shot through with its own aesthetic sensibilities. Indeed, these aesthetic sensibilities are at the heart of science fiction, so much so that some contend the best of this genre of literature plots a course of scientific advancement. What about the cloning aesthetic—the grand vision of producing a human being from scratch so to speak? It is everywhere observable in the popular and academic essays on the subject. What should one recommend? Wait for robotics to catch up? After all, there is a cosmic difference between the proposed fashioning of an “anthropoid” and the human reproduction of an “anthropos.” The cloning aesthetic is perhaps necessary on a much more banal front in order to overcome the violation of self that is entailed in a real act of cloning a human being.

Theologically, I believe we can say that cloning violates the life of the child in a fundamental way, and thus should not be used for reproductive purposes. Regarding cloning to reproduce a dying child, we already hear the myth that this would constitute “saving” the child. However, this would place an undue psychological burden on the cloned child, as the child would have to develop a self-concept while hearing phrases like “you had died . . . ,” which for the living child could only be a kind of horrific fiction. Other means of securing child-birth for families is already quite advanced and should advance further. The ethics of reproductive technology is already torturous, but in the case of

cloning, it is impossible. One cannot possibly reckon the legal and social standards embodied in our broadest definitions what it means to be a human being with human cloning activity and its results.

VI. A FUTURE HOME FOR CLONING TECHNOLOGY?

Obviously, this Article has tended to counsel against including cloning among the acceptable techniques of reproductive technology. Much of the current writing about cloning, both popular and scientific, that goes beyond the stringent discussion of cloning techniques is futuristic, if not utopian. For this reason, I have had no compunction whatsoever about writing theologically on the matter. All told, futuristic and utopian thought mythologizes not only "possible futures," but also desirable futures, and this mythology undergoes constant modification like the technology it idealizes. Furthermore, the futurology that scientists and technology aficionados indulge in is not science fiction and is very far from the necessary understanding and ethical reflection, especially as applied to human reproduction. While Christian theology reformulates itself, its core content abides, particularly the doctrine of human beings created in the image of God. While modern theology has often faltered in bringing belief and value up to speed with technical developments, many in the last decade or so, theology has greatly improved in its careful review and constructive debate regarding scientific advancements.

We must exercise our resources in determining the ethics of cloning, knowing that a great deal of work remains to be done. Perhaps this Article has contributed to a degree of advancement along these lines. Because ethics are done in light of overarching, religious or quasi-religious belief systems, theology will continue to be a fundamental part of this ethical reflection. If the public debate over human cloning for reproductive purposes includes a rigorous ethics component, the two primary reasons for implementing the procedure (namely, overcoming fertility problems and avoiding congenital birth-defects), will be shown not to have their resolution in this direction.¹⁶ Rather, we should anticipate that technological advancements in reproductive technology will soon displace whatever advantages now seem to be attached to cloning as a mode of reproduction.

16. Nelson A. Wivel & LeRoy Walters, *Germ-line Gene Modification and Disease Prevention: Some Medical and Ethical Perspectives*, 262 SCI. 533-38 (1993); Anderson, *supra* note 3, at 808-813; Arthur L. Caplan, *If Gene Therapy Is the Cure, What Is the Disease?*, in GENE MAPPING: USING LAW AND ETHICS AS GUIDES 128-141 (George J. Annas and Sherman Elias eds., 1992); Howard W. Jones, *Assisted Reproduction*, 35 CLINICAL OBSTETRICS AND GYNECOLOGY 749-57 (1992); D.F. Pencarinha et al., *Ethical Issues in Genetic Counseling: A Comparison of M.S. Counselor and Medical Geneticist Perspectives*, 1 J. GENETIC COUNSELING 19-30 (1992); Berger & Gert, *supra* note 3, at 667-83; ROBERT H. BLANK, REGULATING REPRODUCTION (1992).