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DOLLYWOOD IS NOT JUST A THEME PARK IN TENNESSEE ANYMORE: UNWARRENTED PROHIBITORY HUMAN CLONING LEGISLATION AND POLICY GUIDELINES FOR A REGULATORY APPROACH TO CLONING

PAUL TULLY*

"I know no method to secure the repeal of bad or obnoxious laws so effective as their stringent execution."

INTRODUCTION

On February 27, 1997, scientists at the Roslin Institute in Scotland disclosed an eruptive and ground-breaking scientific leap in an article detailing their cloning of a sheep named Dolly. Various researchers throughout the world subsequently reported several different mammalian clonings following Dolly's conception and resulting successful birth, including Polly, a cloned sheep

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* J.D. Candidate, June 1999.
2. Cloning is generally defined as "the process of growing a group of organisms derived from a single individual by asexual reproduction." RANDOM HOUSE DICTIONARY 117 (2d ed. 1980). Also, cloning may be viewed as the creation of "a precise genetic copy of a molecule, cell, plant, animal, or human being." Cloning Human Beings, NATIONAL BIOETHICS ADVISORY COMM’N, REPORT & RECOMMENDATIONS ON CLONING HUMAN BEINGS 13 (June 1997) [hereinafter NBAC REPORT].
3. E. Ian Wilmut et al., Viable Offspring Derived From Fetal and Adult Mammalian Cells, 385 NATURE 810, 810-13 (1997).
4. See Japanese Team Reports Breakthrough in Calf Cloning, JAPAN ECON. NEWSWIRE, Aug. 6, 1997 (describing the creation of 200 identical cattle produced from a single fertilized egg); see also CNN Interactive Sci-Tech Story Page, Mooove Over Dolly; Bull is Cloned (last modified Mar. 2, 1997) <http://cnn.com/TECH/9708/07/bull.cloned.ap/index.html> (describing the creation of Gene, a cow cloned using a "streamlined" cloning reproductive technique similar, but not identical to, NTT). The cloning techniques used single cells taken from 30-day old calf fetal tissue. Ronald Kotulak, Mooove Over Dolly: U.S. Firm Clones In New Way Latest Breakthrough Enhances Possibility of Work on Humans, CHI. TRIB., Aug. 8, 1997, at 1. While nuclear transfer technology (NTT) "starves" the cells used in cloning in order to force them into loss of specialization, the cloning technique used to create Gene
that contains an actual human gene in its DNA.\textsuperscript{6} 

As a result of these mammalian clonings, a considerable world-wide debate ensued on the potential application of the new technology to human cloning. Proponents and opponents alike are now sparring over perhaps the most ethically, morally and legally consequential scientific discovery of mankind since the invention of nuclear weapons.\textsuperscript{7} Several recent synopses detailed the legal issues surrounding this astounding discovery.\textsuperscript{8} Commentators have broadly discussed the legal aspects of human cloning, ranging from a Jewish legal analysis\textsuperscript{9} to potential criminalization of human cloning.\textsuperscript{10} These discussions have focussed on a variety of topics, including recommendations by the National Bioethics Advisory

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\textsuperscript{5} CNN Interactive Sci-Tech Story Page, Report: Cloned Sheep Has Human Gene (last modified July 24, 1997) <http://cnn.com/TECH/9707/24/polly/index.html>. Polly contains a human gene in its genetic make-up, and will produce a human protein in its milk; the protein can be extracted and given to human patients suffering from hemophilia and bone diseases. \textit{Id.} See also Jane Bradbury, First Dolly The Sheep, Now Multiple Monkeys, 349 LANCET 705, 705 (1997) (describing the creation of genetically identical monkeys produced using nuclear transfer technology).

\textsuperscript{6} DNA, technically termed deoxyribonucleic acid, is defined as a class of nucleic acids found primarily in the nuclei of cells; it is responsible for reproducing the genetic make-up of a person. \textit{RANDOM HOUSE DICTIONARY} 266 (2d ed. 1980).


\textsuperscript{8} James Podgers, The Clone Age, 83 A.B.A. J. 69, 69 (1997). This article summarizes an ABA Journal roundtable discussion on issues related to human cloning. \textit{Id.} Such issues include ethics, family law, inheritance, cell ownership, forensic DNA identification, negligent cloning, diminished worth and potential United States and international law conflicts. \textit{Id.} See also Cloning Symposium, 38 JURIMETRICS 1, 1-102 (1997) (discussing the National Bioethics Advisory Commission report on human cloning, the pending human cloning ban, and life after the creation of Dolly); Virginia Morell, A Clone of One's Own, \textit{DISCOVER}, May 1998 at 83-89 (discussing the cloning progression from Dolly, to cows, to monkeys and the likelihood of human cloning in the near future).


Commission to ban human cloning,11 the politics of cloning which developed immediately after the announcement of Dolly,12 the comparisons of twins to cloning,13 and possible beneficial aspects of human cloning techniques as applied to plants.14

Opponents of human cloning have equated this potential reproductive technique with a factory setting, stating that "[t]he principles of industrial production and design, such as quality control, predictability, profitability, and efficiency, should never be allowed to apply to the production of humans . . . . Cloning would tend to devalue the human life or dehumanize mankind."15 Proponents, on the other hand, urge legislators not to be blind to the potential benefits of human cloning by prematurely enacting a ban on the technology, whereby people could benefit by "creating a reserve of therapeutic cells that would increase their chance of being cured of various diseases, such as cancer, degenerative disorders and viral or inflammatory diseases."16

While the current cloning technology is scientifically proven on various non-human animals, an entry level scientific inquiry into the debate on human cloning is whether the new cloning technology is applicable to the cloning of a human being.17 A plethora of scientific rhetoric and disagreement exists on this fundamental issue.18 One reoccurring and unanswered scientific question is whether there is something unique about the new Scottish cloning technology in sheep versus other animals, such as humans.19 Notwithstanding pending anti-cloning laws, discussed infra, one researcher has boldly indicated that he plans to "produce" a two-month pregnant human female using cloning

17. NBAC REPORT, supra note 2, at 22-24. See also Harry Griffin, Roslin Institute, Dollymania (last modified April 1997) <http://www.ri.bbsrc.ac.uk/cloning/dollymania.html> (observing that the fervor over Dolly, with respect to human cloning, may be misplaced, as NTT may not be applicable to creating a human clone).
18. NBAC REPORT, supra note 2, at 22-24.
For the purposes of this Comment, it is assumed that current animal cloning techniques, or an improved derivative thereof, will become applicable to cloning human beings in the United States within the next ten years. However, if the United States government is successful with its current legislative agenda to ban human cloning and human cloning research, the question as to whether the new technology is applicable to cloning humans may remain unanswered for many years. Additionally, a modern reproductive technique will be unavailable to United States citizens who may be in uniquely and oppressively disadvantageous reproductive situations. Taken to the extreme, a moratorium enacted on human cloning in the United States could lead to desperate people in want of a child resorting to underground, private cloning services. There also exists a distinct possibility that genetic research companies will offer human cloning services, but only in third world countries which have not enacted anti-cloning legislation. Accordingly, the central proposal of this Comment is that human cloning and human cloning research should not be banned in the United States. Rather, the United States should enact legislation which regulates human cloning and human cloning research.

Part I details the basic scientific principles behind the newly discovered cloning technique, public reaction to the technology and its possible application to the cloning of a human being, other genetic cloning techniques and various reproductive technologies currently in use. Part II surveys pending federal and state legislation aimed at prohibiting human cloning and related cloning research. Part III analyzes the short comings of the pending federal and state legislation, constitutional implications to the right to procreate and potential property rights in deoxyribonucleic acid (DNA). Finally, Part IV sets forth proposed guidelines to be
used by legislators in the development of a human cloning policy which allows regulated human cloning and human cloning research in the United States.

I. THE DEVELOPMENT OF NUCLEAR TRANSFER TECHNOLOGY, APPLICATION TO CLONING ANIMALS, AND NON-CLONING ASSISTED REPRODUCTIVE TECHNIQUES

The creation of Dolly set off a fire storm of questions and concerns in the scientific, legal and religious communities. As a preface to the legal, moral and ethical aspects of possible human cloning, Section A first discusses the basic science behind the recent animal clonings. Section B discusses world-wide reaction to the new cloning technique. Section C contains a brief discussion of other post-Dolly clonings and future cloning investigations. Finally, Section D provides a discussion of alternative methods of human reproduction currently in use in the United States.

A. The Cloning Science Behind The Creation of Dolly and Comparisons to Traditional Embryo Formation

Typically, a mammalian embryo is comprised of the combination of male sperm and a female egg, where both the sperm and the egg each contribute a single set of chromosomes to the resulting embryo. Chromosomal material from both the egg and the sperm make up the DNA of the offspring resulting from such an embryo. "Nuclear transfer technology" (NTT), or somatic cell nuclear transfer technology is the term used to describe the new Scottish cloning technology. Genetic material in which all

26. E. Ian Wilmut & Bill Ritchie, Roslin Institute, Benefits From Cloning / Nuclear Transfer, (last modified May 23, 1997) <http://www.ri.bbsrc.ac.uk/cloning/benefits.html>. An embryo is an organism in the early stage of development. RANDOM HOUSE DICTIONARY 293 (2d ed. 1980). A chromosome is a thread-like material found in the nucleus of a cell that possess the genes of the cell. Id. at 163.


28. Wilmut et al., supra note 3, at 810. Nuclear transfer technology involves the transfer of DNA from an adult cell to an unfertilized egg whose nucleus has been removed. See also Roslin Institute, Nuclear Transfer Technology (last modified Feb. 24, 1997) <http://www.ri.bbsrc.ac.uk/library/research/nt_technology.html> (describing the multiple step procedure involving the growing of adult donor cells, making genetic modification to these cells if desired and fusing the cells with an unfertilized egg, whereby the resulting nucleus can form an embryo). The resulting embryos are then transplanted into a surrogate sheep, which results in the eventual birth of offspring. Id. Dolly is the first mammal cloned from another adult animal. Wilmut et al., supra note 3, at 810. This technology is an extension of sheep cloning using nuclear transfer technology from an embryonic cultured cell line. K.H.S. Campbell et al., Sheep Cloned by Nuclear Transfer From a Cultured Cell Line, 380 NATURE 64, 64-66 (1997). An earlier cloning report described the use of cells derived from sheep embryos. Id. at 66.
The chromosomal material originates from a single animal makes up the "reconstructed embryos" used in NTT. In basic terms, an NTT-based embryo contains DNA from a single individual donor; the resulting offspring has DNA originating from only one animal. The Scottish scientists "have shown the technology to be successful only in sheep," with an extremely high loss rate of implanted sheep fetuses.

After the Roslin scientists published the ground breaking results, Dolly's creators continued to expose the practical benefits of the new technology. NTT may have a variety of applications in medicine, such as human therapeutic protein generation, xenotransplantation, and nutricuetical production.

Conventional conception techniques produced these embryos. Wilmut & Ritchie, supra note 26. Cells from a single animal created Dolly, therefore her DNA and chromosomal material mirrors that of a single animal. Wilmut et al., supra note 3, at 810.

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Additionally, NTT may provide insight in the areas of aging, cancer, alternatives to embryo stems and cloning animals. NTT may lead to new ways of growing bone marrow for use in cancer patients, the healing of spinal cord trauma and a cure for sickle-cell anemia.

"Dollymania" has continued to confront Dolly's creators. Scientists at the Roslin Institute have been inundated with fearful inquiries as to whether their new discovery can, should, or will be used to create a human clone. Currently, based on the technique's implantation failure rate, the Roslin scientists seriously question whether their technology would in fact be applicable to human cloning. World-wide reaction to the development of NTT is not focussed primarily on the science behind the creation of Dolly, but rather is focussed on the more humanistic and public policy aspects of human cloning.

which are responsible for such rejection. Id. Approximately 150,000 people were awaiting organ transplants world wide in 1995, 49,000 people in the United States alone. Labor and Human Resources Hearing, supra, note 30. (statement of John Wallwork, Director of Cardiac Transplantation, Papworth Hospital Cambridge). Approximately nine people die every day in the United States due to the unavailability of a suitable organ for transplant. Id. Additionally, xenotransplantations from cloned animals may lower health care costs, increase patient life expectancy and productivity and may alleviate long term human suffering. Labor and Human Resources Hearing, supra, note 30 (statement of Lenard Bell, M.D., Alexion Pharmaceuticals, Inc.).

36. Wilmut & Ritchie, supra note 26. NTT technology may allow cows to produce milk from which premature infants would greatly benefit. Id.

37. Id. A six year old donor sheep's DNA was used to create Dolly. Id. By monitoring Dolly's aging processes, scientist hope to determine if premature aging is genetically determined. Id. The Scottish scientists also envision that the new technology will allow for the production of herds of genetically identical animals for various research purposes. John Woolliams, Roslin Institute, Cloning in Farm Animal Production, (last modified Feb. 24, 1997) <http://www.ri.bbsrc.ac.uk/cloning/cloning_uses.html>.

38. The Cloning Of a Sheep Named Dolly: Just One Biotech Development Producing Unprecedented Opportunities to Explore Treatments of Human Diseases, TRANSPLANT NEWS, May 12, 1997 at 7.

39. Griffin, supra note 17.

40. Id. Human cloning, in the context on NTT is more properly defined as "the duplication of an existing or previously existing human being by transferring the nucleus of a differentiated, somatic cell into an oocyte in which the nucleus has been removed, and implanting the resulting product for gestation and subsequent birth." Washington Fax, Prohibition of Federal Government Funding of Human Cloning Research; Legislative Hearing; Subcommittee on Technology, Committee on Science; U.S. House of Representatives; Statement of Arthur F. Haney (last modified July 22, 1997) <http://www.washington-fax.com/pass/doc-sets/bioethics/haney_7-22.html> [hereinafter Subcommittee on Technology].

B. Applicability of The New NTT to Human Cloning: The World Reacts With Ethical, Religious and Moral Concerns

The general and non-scientific public reaction to Dolly's creation is vast and on-going. The political debate at the federal level has been postured as perhaps the most monumental ethical and moral discussion in history. In polls conducted immediately after Dolly's creation, Americans overwhelmingly disapproved of human cloning and related research.

The majority of rhetoric circling Dolly contains overwhelming anti-cloning sentiment. Representatives from a global coalition of over 300 church/ethical groups have demanded a worldwide moratorium on human cloning. Conversely, taking the moral high-ground and enacting anti-cloning legislation may have an undesirable opposite effect of forcing human cloning research to go underground to avoid the law and stringent public scrutiny.

In answering the moral leaders who have spoken out against human cloning, proponents opine that someday a couple may successfully use cloning as a means of reproduction. These cloning proponents believe that such a couple will have a healthy, loving child who will become an integrated part of society. Proponents also feel that once such a child is born, the anti-cloning ethicists will be silenced, human cloning will become accepted, and the moralists will move on to the next controversy.

42. See, e.g., Sen. Bill Frist, Human Cloning Debate May be The Greatest Test to Date, THE HILL, Oct. 22, 1997, at 29 (describing a consensus amongst legislators to ban human cloning based the "most basic beliefs about human nature").

43. ABC Nightline: 82% Say Cloning of Humans is Morally Wrong, THE HOTLINE, Feb. 25, 1997. The survey was conducted on 519 people with an error of ± 4.5%. Id. Approximately 50% of people surveyed disapproved of animal cloning for scientific research, while 39% approved. Id. On whether human cloning should be allowed, 10% replied yes and 87% said no. Id. Approximately 82% of respondents said that human cloning was morally wrong and 93% said that, if technically possible, they would not clone themselves. Id.

44. Ehsan Masood, Cloning Technique "Reveals Legal Loophole", NATURE (last modified Aug. 13, 1997) <http://www.nature.com/Nature2/serve?SID&CAT=NatGen&PG=sheep/sheep 6.html>. In a similar stance, the Church of Scotland, located in the country in which Dolly was created, strongly opposes human cloning. Dr. Donald Bruce, Society, Religion and Technology Project: Church of Scotland, 1997 General Assembly Report-Cloning Animals and Humans, (last modified May 11, 1997) <http://webzone1.co.uk/www/srtproject/ga97clon.html>. The Vatican also called for a ban on human cloning because people have a right to be born in a human way and not in a laboratory. Pontifical Panel: Human Clones Wouldn't Have Same Souls, ASSOC. PRESS, June 24, 1997.

45. Powledge, supra note 24, at 5.

46. Mike Feinsilber, Quandaries of Cloning, ASSOC. PRESS, Apr. 7 1997.

47. Id.

48. Id.
Following Dolly, social scientists exhaustively sounded off in a series of opinions on the consequences of human cloning. Opponents to human cloning believe that cloning a human being is an inherently unethical experiment on the child. Additionally opponents feel that there is too great a risk that a clone could be born with deformities. There are grave psychic concerns of how a clone would react to being the "twin" of her parent and such a person may not feel unique to the world. When one clones oneself, the child is the result of non-sexual incest, whereby one is the parent of his own sibling. Individuals professing these views believe that human cloning would turn procreation as we know it into a human manufacturing process. Accordingly, proponents of these ethical and moral points of view would ban the cloning of humans and deny society any attempt to even determine if human cloning is possible.

Many commentators suggest that NTT may be used by animal preservationists for the positive goals of saving endangered species and possibly resurrecting extinct species. An obvious extension to live human cloning is the possibility of cloning deceased or dying individuals. The creator of Dolly points out that the cloning of a dead person is not possible using NTT, as the cells used for implantation in the embryo must be alive. However, this does not necessarily mean that, theoretically, a dying person could...
not be cloned.59 Predictions by many commentators extend to the possibility and concern that harvesting of human fetuses for spare body parts will occur.60

Conversely, some commentators view opposition to human cloning as equivalent to a form of racism.61 This supposition assumes that people generally agree that it is wrong to discriminate based on genetic traits or "race."62 "Calls for a ban on human cloning amount to discrimination against people based on another genetic trait-the fact that somebody already has [or would have] an identical DNA sequence."63 This genetic discrimination has been equated to pre-emptive genocide, whereby the possibility of a human clone is eliminated prior to ever being created.64

Comparisons and contrasting views are possible between human cloning using NTT and natural-born identical twins.65 A clone would be a person who, like an identical twin, shares the exact same genes as another person.66 Proponents of cloning offer that human cloning should not be the conduct which is viewed as unethical.67 Rather, the unethical conduct is to look down upon, criticize and subject a clone to demoralizing public scorn.68 Further, identical twins do, in fact, grow up to be two individual people, despite the fact that their genes are identical.69

59. Id.
60. See, e.g., David Derbyshire, A Frog Leap Closer to Human Organ Farms; Two Starkly Contrasting Ways of Tackling Transplant Shortages, DAILY MAIL (LONDON), Oct. 20, 1997, at 15. (describing the possible mass production of spare body parts); see also, Experts Predict Human Fetuses Will Be Harvested for Parts, ST. LOUIS POST-DISPATCH, Oct. 20, 1997, at 7A (predicting scientists will cultivate fetuses for human organ harvesting).
62. Id.
63. Id.
64. Id.
66. Id. Bailey succinctly points out that generally twins are not considered evil and therefore clones should not be either. Id.
67. Id.
68. Id. H. Tristam Englehardt, professor of medicine at Baylor and philosopher at Rice suggests that clones should be treated just as twins and triplets are, like normal human beings. Id. "Clones, of course, are fully human and are to be treated with the full dignity of any human being. Clones are not robots, slaves, or semi-humans, and any attempt to classify them as such must be vigorously combatted." Broyde, supra note 9, at 533.
69. Bailey, supra note 65, at 53. History suggests that bioethicists are power mongers who thrive and survive by saying "no" to new scientific discoveries. Id. If the general public is left to decide on human cloning based on their own free will, ethicists will lose their "power," receive no "perks" and not be invited to any conferences to speak. Id.
Acceptance of cloning by a child who is, in fact, the result of cloning, may actually be comparable to the reaction of children who are the products of adoption, in vitro fertilization or other non-traditional reproductive techniques. If a parent is at ease with the way her child was created, even if such a child is created by cloning, the child will be at ease with the reproductive technique as well. Religiously, one must question whether it is more plausible that God does not want humans to clone themselves or will God watch human cloning activity with the knowledge that humans are using their God given abilities to multiply? Politically, analysts suggest that elected officials should not have "veto power" over new technology which may be capable of creating life.

C. Post-Dolly Clonings and Future Investigations

Immediately following Dolly's creation, scientists began producing sibling "rhesus" monkeys, a species of monkeys very similar to humans, using cloned embryos. Australian scientists successfully produced 470 cattle embryos from a single embryo source; this cloning appears to be the largest mass cloning of embryos to date. This achievement may have positive commercial cattle production implications within three to four years. Additionally, scientists proposed to clone endangered giant Chinese pandas using NTT, however the suggestion is opposed by some panda experts. Most recently, a hybrid of cloning technology produced a headless frog from a genetically manipulated embryo. Such a frog is the first step in what may be

70. Wertz, supra note 25, at 5.
71. Id.
74. CNN Interactive Sci-Tech Story Page, Scientists Grow Monkeys From Cloned Embryos (last modified Mar. 2, 1997) <http://cnn.com/TECH/9703/02/monkey.monkey/index.html>. The monkeys contained cells from different embryos, which accordingly meant that the monkeys were not exact genetic clones. Id. Scientists envision the technology being most useful for drug experiments and development of infertility treatments for older women. CNN Interactive Sci-Tech Story Page, Report: Scientists Clone 2 Monkeys From Embryos (last modified Mar. 2, 1997) <http://cnn.com/TECH/9703/02/monkey.cloning/index.html>.
76. Id.
78. Derbyshire, supra note 60, at 15.
a method of producing replacement organs for human transplantation.\textsuperscript{79}

Scientists are investigating a variety of cosmetic and disease-preventative human enhancements utilizing human gene augmentation technology.\textsuperscript{80} Potential human gene treatments may someday include skin pigmentation modification, muscle enhancement, height control, behavioral habit modification and aggressive behavior control.\textsuperscript{81} One rather benign use of human gene therapy is the potential development of a cure for baldness.\textsuperscript{82}

D. Permissible Reproductive Techniques: What One May and May Not Do to Have a Child

There are many well known, technically advanced, non-traditional reproductive techniques\textsuperscript{83} which are used based on a strong desire to procreate.\textsuperscript{84} The increased, widespread use of

\textsuperscript{79} Id. The body parts from an animal produced using this technique would have the same genetic make up of the animal from which the DNA originated, thereby reducing organ transplant rejection in the originating-DNA animal. Id.

\textsuperscript{80} Rick Weiss, Gene Enhancements' Thorny Ethical Traits; Rapid-Fire Discoveries Force Examination of Consequences, THE WASH. POST, Oct. 12, 1997, at A1. Medical gene therapy involves the injection of healthy new genes into diseased patients. Id.

\textsuperscript{81} Id.

\textsuperscript{82} Id.


\textsuperscript{84} Cynthia B. Cohen, Give Me Children or I Shall Die! New Reproductive Technologies and Harm To Children, 26 THE HASTINGS CENTER RPT. 19
these non-traditional reproductive techniques is attributable not only to improvements in the techniques, but also to women delaying having children until later in life.\textsuperscript{85} Non-traditional couples, such as lesbians, are increasingly in search of alternative means to bear and raise their own children.\textsuperscript{86} Additionally, in the United States, one in six couples is infertile and approximately sixteen to twenty percent of couples experience some type of infertility problem.\textsuperscript{87} As a backdrop, a brief survey of the various alternative reproductive techniques is provided. Analysis is provided in the proposal contained herein, whereby cloning is postulated to be no more "unethical," "immoral" or against public policy as are any of these "accepted" reproductive alternatives.

Adoption is commonplace in the United States and is generally an efficacious and well-accepted route to becoming a parent.\textsuperscript{88} Surrogacy as a means of procreation is also utilized prolifically in the United States.\textsuperscript{89} All surrogacy settings involve some form of artificial insemination (AI) or in vitro fertilization (IVF).\textsuperscript{90} Recently, for the first time in the United States, a new technique allows women, who suffer from premature ovarian failure, to utilize artificial insemination using previously frozen, donated eggs.\textsuperscript{91} Not surprisingly, many surrogacy contracts often result in a fair amount of controversy.\textsuperscript{92} For example, IVF centers

\textsuperscript{85} Sharon Begley, \textit{Spring Cloning: More Animal Cloning}, 129 NEWSWEEK 26 (June 30, 1997), at 82. An average in vitro fertilization procedure costs approximately $5000 to $10,000; hormone egg production stimulation pills cost approximately $50 to $60 each. \textit{Id.}


\textsuperscript{87} \textit{Id.}


\textsuperscript{89} \textit{See, e.g.,} Christine L. Kerian, \textit{Surrogacy: A Last Resort Alternative For Infertile Women or a Commodification of Women's Bodies and Children?}, 12 WIS. WOMEN'S L.J. 113 (describing basic types of surrogacy arrangements in the United States).

\textsuperscript{90} \textit{Id.} at 114. AI surrogacy involves creating an embryo in vivo, which is derived from the egg of the surrogate and the injected sperm of the intended father. \textit{Id.} IVF surrogacy involves creating an embryo outside the surrogate, which is derived from the egg of the intended mother and the sperm of the intended father; the embryo is then implanted in the surrogate mother. \textit{Id.} Donor surrogacy involves creating an embryo in vitro, where both the egg and/or sperm are donated through sperm banks and egg depositories. \textit{Id.}


\textsuperscript{92} \textit{See, e.g.,} In re Baby M, 537 A.2d 1227, 1240 (N.J. 1988) (holding
are experiencing alleged misappropriation of their patients genetic materials.\footnote{83}

There is an ongoing proliferation of sperm banks in the United States and abroad that offer a variety of donor backgrounds to potential IVF participants.\footnote{85} While several states have regulatory guidelines to control sperm bank practices,\footnote{86} there is presently no federal law or regulation covering the purity of sperm used for IVF.\footnote{89} As such, sperm banks have not gone without their share of controversy over the past several years.\footnote{97} Many tragic stories have developed around desperate couples who have turned to unregulated sperm banks for reproductive help.\footnote{98}

Analysis is provided in the proposal contained herein, whereby cloning is postulated to be no more "unethical," "immoral" or against public policy as are any of these "accepted" reproductive alternatives.

The United States is currently proposing to ban human cloning, drawing the line and limiting permissive assisted reproductive techniques to those discussed above. While the United States does not currently have a law which prohibits human cloning, such legislation appears to be forthcoming. Additionally, the current laws of other countries

\footnote{83} See, e.g., Karen T. Rogers, \textit{Embryo Theft: The Misappropriation of Human Eggs At An Irvine Fertility Clinic Has Raised A Host Of New Legal Concerns For Infertile Couples Using New Reproductive Technologies}, 26 Sw. U. L. Rev. 1133, 1133-35 (1997) (describing a scenario where embryos belonging to a first set of parents were allegedly misappropriated by doctors who implanted the embryos into a second set of parents who mistakenly presumed the embryos were theirs; such implantation was done without the consent of the first set of parents). Approximately seven children were conceived through this potentially criminal course of conduct. \textit{Id.}


\footnote{95} \textit{Id.}

\footnote{96} \textit{Industry Lacks Appropriate Regulatory Control; Sperm Banks}, AIDS WEEKLY PLUS, Apr. 8, 1997, at 22.

\footnote{97} See, e.g., Charles Bremer, \textit{White Who Gave Birth To a Black Baby Sues Sperm Bank}, TIMES, Mar. 10, 1990 (describing a white woman's mistaken insemination through a sperm bank, which produced a black baby, rather than her deceased husband's white child). \textit{See also} John Hiscock, \textit{Parents Sue Sperm Bank}, DAILY TELEGRAPH, Aug. 11, 1997, at 10 (describing litigation brought by parents of a sperm bank baby who developed incurable kidney disease, whereby the sperm bank knowingly allowed a donor with a family history of kidney disease to give sperm).

\footnote{98} \textit{See, e.g., AIDS Risk Eyed: Artificial Insemination}, AIDS WEEKLY, May 16, 1994, at 20 (describing couple who unknowingly received HIV tainted sperm from a donor during IVF treatments).
appear to limit reproductive rights to the above proven reproductive technologies and alternatives.\textsuperscript{99}

II. PENDING FEDERAL AND STATE LEGISLATION PROHIBITS HUMAN CLONING AND RELATED RESEARCH

Recent federal and state legislation proposes to prohibit human cloning and related research. Section A examines the National Bioethics Advisory Commission (NBAC) report on human cloning and its recommendations for a human cloning ban. This section also outlines the NBAC scientific evaluation of NTT and various religious and ethical views offered by the NBAC. Section B details the federal legislative efforts to ban human cloning, including the Human Cloning Prohibition Act of 1998 (HCPA) and the Human Cloning Research Prohibition Act (HCRPA). Section C surveys a growing multitude of pending state legislation aimed at prohibiting human cloning and cloning research.

A. National Bioethics Advisory Commission Recommendations: A Publicly Acceptable Conclusion Which Bans Human Cloning and Related Research

Shortly after the announcement of NTT and the creation of Dolly, President Clinton announced an immediate ban on the use of federal funds for human cloning research.\textsuperscript{100} At the President's request, the NBAC began a prompt investigation into potential human cloning through NTT.\textsuperscript{101} Following the President's charge to the NBAC, the House Committee on Science and The Labor and Human Resources Committee both held multiple pre-NBAC hearings on the subject.\textsuperscript{102} Dolly's creator, Ian Wilmut, testified that human cloning would be unethical and that NTT may not be technically applicable to human cloning.\textsuperscript{103}

\textsuperscript{99} See, e.g., Human Fertilisation and Embryology Act, 1990, § 3 (Eng.) (controlling various assisted reproductive technologies in the United Kingdom).
\textsuperscript{100} Washington Fax, Remarks by The President on Cloning (last modified Mar. 4, 1997) <http://www.washington-fax.com/pass/docsets/bioethics/president-3-4-97.html>. The President's ban stated that "no federal agency may support, fund, or undertake [human cloning]." \textit{Id.} Additionally, the President asked the United States' scientific community to participate in a voluntary moratorium on human cloning, pending National Bioethics Advisory Commission recommendations. \textit{Id.}
\textsuperscript{101} \textit{Id.}
\textsuperscript{102} See generally Biotechnology and The Ethics of Cloning: How Far Should We Go?: Hearing of the House Committee on Science; Subcommittee on Technology, 105th Cong. (1997) (statements of Thomas H. Murray, Center for Biomedical Ethics, Case Western Reserve University School of Medicine; Caird E. Rexroad, Jr., Research Leader, U.S. Department of Agriculture; M. Susan Smith, Director, Oregon Regional Primate Research Center).
\textsuperscript{103} \textit{Labor and Human Resources Hearing, supra} note 30 (statement of Ian Wilmut). Dr. Wilmut succeeded in production of 27 "reconstructed embryos,"
During the pre-NBAC hearings a variety of ethical arguments attacked human cloning at length. One viewpoint expressed a concern that any human cloning would necessarily result in subsequent "experimentation" on the resulting children. Additionally, as NTT potentially allows for any cell in the human body to be equivalent to a fertilized egg, human cloning experimentation would require protection from potential scientific abuses. Public policy issues enumerated by reproductive experts speaking at the preliminary hearings included: (1) how does cloning coexist with genetic screening; (2) how should proposed cloning legislation deal with men's lack of necessity in conception through cloning; (3) who is the parent of a clone; and (4) should legislation address surrogate cloning mothers. Additionally, a wide variety of religious views are found in many of the pre-NBAC hearing transcripts.

Following these pre-NBAC hearings, the NBAC itself conducted several formal, public hearings on the religious, ethical, legal, scientific and public policy issues involving possible human cloning using NTT. From the pro-cloning stance, a balancing

recipient sheep received 29 of these embryos and one of the embryos resulted in Dolly. Id. A similar failure rate with humans "would be totally unacceptable." Id. However, the Human Research Subject Protections Act of 1997, if implemented would cover such an "experiment" and would require that the experiment involve a minimal amount of risk and be conducted by oversight of an Institutional Review Board. Id.

104. Id.
105. Id.
106. Id.
107. Labor and Human Resources Hearing, supra note 30 (statement of Karen H. Rothenberg, Professor of Law, University of Maryland); Labor and Human Resources Hearing, supra note 30 (statement of Majorie Cook, Professor of Law, University of Maryland).
approach is suggested by reproductive rights advocates. Prior to any final decision, a fundamental need exists to first realistically evaluate human cloning. Human cloning prohibition should not be based on a "worst case" scenario resembling a science-fiction movie. These sensationalistic portrayals do not per se mean that, even if appropriate regulations are in place, some type of evil will evolve from human cloning. In another pro-cloning stance, legal reproductive expert John A. Robertson adeptly stated that a public policy on human cloning should respect human rights, allow for individual freedoms, including scientific freedom, permit cloning where there is a substantial benefit to families and prevent cloning where harm is probable. Conversely, cloning may both further and compound the current issues surrounding assisted reproductive technology, such as visitation rights for parents in divorce settings, as well as the issue of who is the legal parent of the clone child.

Following the various scientific and public hearings, the NBAC released its long-awaited final report and recommendations to President Clinton regarding human cloning policy in the United States. The protracted NBAC report broadly evaluated potential human cloning using NTT and addressed a wide variety of key issues.

110. NBAC Conference, supra note 109, at <http://www.washington-fax.com/pass/doc-sets/bioethics/macklin.html>. "Evidence, not mere surmise, is required to conclude that the psychological burdens of knowing that one was cloned would be of such magnitude that they would outweigh the benefit of life itself." Id.
111. Id. An adult should not be cloned without his or her informed consent. Id. There is no steadfast rule that cloning an adult would actually harm anyone, as the adult participates voluntarily and waves her right to genetic autonomy. Id. The cloned individual will actual benefit from the gift of life and should protection of the law, regardless of whether the persons conception was natural or artificial. Id.
112. NBAC Conference, supra note 109 at <http://www.washington-fax.com/pass/doc-sets/bioethics/macklin.html>. Legislators may enact laws limiting or forbidding the selling of clones, for body part replacement as an example, just as current laws prohibit the selling of transplant organs or babies. Id.
113. Id.
114. Id. at <http://www.washington-fax.com/pass/doc-sets/bioethics/robertson.html>. Infertile couples may be in a "clone or no child at all" situation when it comes to cloning. Id. A policy which forbids human cloning should not be justified as protecting the resulting child, because the child would not have been born but for the actual cloning. Id.
116. NBAC REPORT, supra note 2. For a thorough review of the NBAC Report see Cloning Symposium, 38 JURIMETRICS 1, 1-46 (1997) (describing the various detailed facets of the report, including what the report did and did not accomplish).
117. NBAC REPORT, supra note 2.
1. The NBAC Evaluates the Science of Cloning and NTT

There are several basic types of cloning currently employed by scientists, including cellular cloning,\(^1\) molecular cloning,\(^2\) blastomere separation cloning,\(^3\) and NTT-based cloning.\(^4\) As general background, the cloning techniques were reviewed, along with the new NTT technique, and various difference between the techniques were discussed.\(^5\) The NBAC then primarily focussed on NTT, pointing out in summary, that there is only a three percent success rate for NTT in producing sheep like Dolly. The applicability of NTT to human cloning, as well as the long-term health of Dolly, is medically uncertain at the present time.\(^6\) The NBAC correctly indicates that Dolly may not be "normal" over the course of her entire life.\(^7\) Humans cloned using NTT has the potential to produce diseased offspring or children with defects.\(^8\) Accordingly, the NBAC has concluded that there is no scientific justification for the use of NTT in attempting to clone a human.\(^9\) However, the NBAC concluded that other proposed allowable uses of NTT, would include animal cloning for research purposes.\(^10\) In addition, the NBAC would accept NTT as a technique for targeting gene alterations,\(^11\) research of cell differentiation technology,\(^12\)

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118. Id. at 14. Cellular cloning involves growing individual cells in culture in a laboratory. Id.

119. Id. Molecular cloning involves the replication of DNA fragments in host cells, such as bacterium. NBAC REPORT, supra note 2, at 14. Recombinant DNA technology widely employs this technology, which is responsible for insulin production, blood clot dissolving medications and anemia treatment medications. Id.

120. Id. at 14-15. The term describing the splitting of a developing embryo just after fertilization into two to eight cells is called blastomere separation cloning. Id. at 15. Each "blastomere" cells is totipotent, making it capable of producing a complete offspring. Id. A surrogate animal receives the split embryos by implantation and produces multiple genetically identical offspring. Id.

121. Wilmut et al., supra note 3, at 810.

122. NBAC REPORT, supra note 2, at 16-21.

123. Id. at 22.

124. Id. Scientific safety concerns also focussed on several unanswered questions still remaining with NTT, such as the reproducibility of NTT, the applicability of NTT to other species, the effects of using cells from later stages of development, the "aging effect" of a clone produced by NTT and the possibility of propagating genetic mutations, such as cancer. Id. at 22-24.


126. NBAC REPORT, supra note 2, at 23.

127. Id. at 33-34.

128. Id.

129. Id. at 24-25.

130. Id. at 28-29.
organ and tissue transplantation, and cell-based disease therapy.

Upon completion of the scientific analysis of NTT, the NBAC entertained the opinions of various religious groups. Religious leaders, including Catholics, Jews, Methodists, Hindus and Lutherans, gave testimony in front of the NBAC condemning any attempt to clone a human being.

2. The Spiritual Perspective Presented to The NBAC: Religious Leaders Denounce Human Cloning

The NBAC solicited broad religious input for its report from a wide variety of religious leaders and scholars. An overwhelming majority of religious leaders have an anti-cloning position. Religious leaders urge that humans should not attempt to "play God" with respect to human cloning. Additionally, many religious leaders simply feel that cloning is an affront to human dignity.

Some religious leaders, however, took a rather pro-cloning stance, albeit under very narrow circumstances. For example, some Jewish leaders would absolutely allow human cloning for sterile Jews whose families were killed in the holocaust, and where such a person is the last of the genetic line of a family. Jewish leaders also would allow cloning for medical treatment.

3. Ethicists Convey Concerns to The NBAC: Ethical Troubles Should Spell Doom for Human Cloning

The NBAC concluded that human cloning is unethical based on the current lack of safety and efficiency of NTT. Additionally, the NBAC noted that psychological harm may come to a clone-child, as the child may experience a loss of uniqueness.

The NBAC addressed the concern that human cloning could be used to

131. Id. at 30.
132. Id. at 29-31.
133. NBAC REPORT, supra note 2, at 39-61. A broad range of religious views are provided from Jewish, Catholic, Protestant and Islamic leaders. Id.
134. Id.
135. Id.
136. Id. at 45.
137. Id. at 56.
138. NBAC REPORT, supra note 2, at 48.
139. Id. at 55. Jewish tradition views infertility as an illness and there is a responsibility to cure such an illness if possible. Id.
140. Id. For example, Jewish religious leaders would find it acceptable to create a child through cloning and use the newly created child's bone marrow for transplantation into a leukemia patient, so long as the cloned child is raised as would be any other child. Id.
141. NBAC Conference, supra note 109, at 62-84.
142. Id. at 69.
create "armies of cloned soldiers" who have no control over their lives or destiny.\textsuperscript{143} Cloning could be used to re-create evil figures from our past, such as Adolph Hitler for example.\textsuperscript{144}

While the Commission acknowledged the fact that cloning is publicly repugnant and could potentially harm the country's social values, the Commission also recognized that it may in fact be the only possible reproductive means possible for certain people.\textsuperscript{146} Nevertheless, the NBAC concludes that the banning of NTT may be necessary to protect society as a whole.\textsuperscript{146}

4. The NBAC Conclusions and Recommendations: Human Cloning Should Be Banned For a Minimum of Three to Five Years

The NBAC summarized its hearings, debates and investigations on human cloning into several recommendations.\textsuperscript{147} First, the Commission recommended a continued moratorium on any federally-funded research aimed at cloning.\textsuperscript{148} Next, the Commission recommended that Congress pass legislation which would prohibit research whose goal is child production using NTT.\textsuperscript{149} Third, the Commission stated that carefully written, prohibitive legislation banning the use of NTT on humans should protect other areas of scientific research, particularly human DNA sequence and cell line cloning.\textsuperscript{150}

B. Federal Legislative Approaches: The Human Cloning Research Prohibition Act and Bills Aimed at Prohibiting Human Cloning

Following the overall recommendations of the NBAC on human cloning, the United States government has taken a multi-pronged approach to insure that human cloning does not become a reality in the United States.\textsuperscript{151} One approach which appeared shortly after Dolly's creation, The Human Cloning Research Prohibition Act (HCRPA), would prohibit the use of federal funds for human cloning research.\textsuperscript{152} Other Congressional bills would

\begin{flushleft}
\textsuperscript{143} Id. at 68.
\textsuperscript{144} Id.
\textsuperscript{145} Id. at 76.
\textsuperscript{146} Id. at 81-82.
\textsuperscript{147} NBAC REPORT, supra note 2, at 107-110.
\textsuperscript{148} Id. at 108-09.
\textsuperscript{149} Id. at 109.
\textsuperscript{150} Id.
\textsuperscript{152} H.R. 922. The Act includes a prohibition on the use of federal funds for human cloning research, definitions of "human somatic cell nuclear transfer" and "somatic cell" and a protection clause for other forms of genetic cloning research. Id. The Senate has introduced a similar bill. S. 368, 105th Cong. (1997).
\end{flushleft}
prohibit human cloning altogether.  

Many of the early introduced federal bills are defective according to some expert critics. One analyst disagrees with the current versions of the federal legislation based on the fact that the bills do not clearly say that human cloning is being banned, versus cell and gene cloning. Additionally, critics opine that the proposed laws contain penalties which are too financial in nature and that criminal penalties, including the possibility of jail time should be included in the anti-cloning legislation. In addition to federal legislative attempts to ban human cloning and related research, the Food and Drug Administration has recently asserted statutory authority to regulate any attempt to clone a human.

In early 1998, a flurry of legislative activity occurred, whereby legislators attempted to correct the shortcomings of their early anti-cloning efforts. The new legislation is a narrowing of cloning activities which are prohibited. The pending Senate legislation has also added severe monetary penalties for cloning

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153. H.R. 923, 105th Cong. (1997). This bill would make it unlawful for a person to use a human somatic cell for the purpose of producing a human clone. Id. There would be a civil penalty for up to $5,000 for any person who violated the law. Id.


155. Id.

156. Id. The current bills, in order to be effective, should also define statutory cloning terms more carefully and address the regulation of animal cloning research. Id.

157. FDA Provides Stopgap to Delay Human Cloning, CHEMICAL & ENGINEERING NEWS, Jan. 26, 1998, at 23. The authority to regulate human cloning claimed by the FDA is derived from the Food, Drug and Cosmetic Act. Rick Weiss, Human Clone Research Will Be Regulated; FDA Asserts It Has Statutory Authority to Regulate Attempts at Human Cloning, WASH. POST, Jan. 20, 1998, at A1. Any attempt at human cloning will require the filing and approval of a formal application with the FDA. Id. Anyone who does not comply with the FDA will be subject to legal action by the agency. Id.


159. Human Cloning Prohibition Act, S. 1601, 105th Cong. §§ 1-6 (1998). Biomedical research not specifically prohibited by this act is permissible. Id.
and attempted cloning.\textsuperscript{160} Additionally, much of the federal legislation now provides for express preemption of any state law attempting to ban or regulate human cloning.\textsuperscript{161}

As the technological principles behind Dolly percolate through the general public and the scientific community, the existence of pre-Dolly international anti-cloning laws becomes much more meaningful to a federal human cloning ban. The United Kingdom (UK) enacted pre-Dolly legislation, governing human cloning.\textsuperscript{162} The Embryology and Fertilisation Act of 1990 (HFEA) rigorously regulates genetic research and reproductive technologies in the UK.\textsuperscript{163} Although this broad legislation presumably prohibits using NTT in the UK, such use may be permissible due to an apparent loophole in the Act.\textsuperscript{164} The "loophole" indicates that the HFEA neither covers nor prohibits human cloning using NTT techniques.\textsuperscript{165}

Recently, nineteen European countries signed an agreement which effectively bans human cloning throughout Europe.\textsuperscript{166} A recent G7 Summit of Economic Countries\textsuperscript{167} suggests an

\begin{itemize}
\item \textsuperscript{160} Prohibition of Cloning Human Beings Act of 1998, S. 1602, 105th Cong. §§ 1-4 (1998). A penalty of at least $1,000,000 may be imposed for each violation of the Act. \textit{Id.}
\item \textsuperscript{161} \textit{Id.}
\item \textsuperscript{162} See Human Fertilisation and Embryology Act of 1990, § 3 (1990) (Eng.) (enacting a law governing human cloning several years prior to the birth of Dolly).
\item \textsuperscript{163} \textit{Id.} The HFEA originally attempted to impede the advancement of advanced reproductive technologies which would allow for the creation of single-parent families, including lesbians. Gillian Douglas et al., \textit{The Right to Found a Family}, 142 New L.J. 488, 490 (1992). The European Commission (EC) has joined the UK in calling for a ban on human cloning, based primarily on ethical and safety concerns. \textit{EC Committee Condemns Research To Clone Human Beings}, BNA CHEMICAL REG. DAILY, June 2, 1997.
\item \textsuperscript{164} Sharon Korek, \textit{Following "Dolly"}, 147 New L.J. 428 (1997). The EC sees no distinction between an individual attempting to clone herself for personal preservation reasons and a parent attempting to replace a lost child. \textit{Id.} However, the EC has stated that animal cloning and related research would be acceptable if carried out under the proper licensing authorities. \textit{Id.}
\item \textsuperscript{165} \textit{Id.} at 428. There is much concern over the precise definitions of the HFEA scientific terms, with respect to embryos and NTT. \textit{Id.} The term "embryo," according to the HFEA definition, means a live embryo in which fertilization is consummated. \textit{Id.} The embryo which resulted in Dolly was not the result of a fertilizing an egg with sperm. Rather, the cells of a single donor produced Dolly. Wilmut, \textit{supra} note 3, at 810. Accordingly, the "Dolly embryo" does not fall under the precise HFEA embryo definition. Korek, \textit{supra} note 164, at 428. Therefore, the HFEA may not actually prohibit production of a "Dolly embryo" or a human-equivalent embryo. \textit{Id.}
\item \textsuperscript{167} \textit{G7 Countries} (last modified Aug. 26, 1997) <http://www.isi.gov.uk/isi/europe/g7.html>. Members of the G7 group include the UK, France, Germany, Italy, United States, Canada and Japan. \textit{Id.}
\end{itemize}
international ban on human cloning. In Canada, the pending Human Reproductive and Genetic Technologies Act (HRGTA) provides sweeping prohibitions on human cloning and other reproductive technologies. Australia provides very specific laws regulating and limiting the scope and access of reproductive technologies to its citizens. Other countries, such as China, have banned human cloning and cloning research.

The NBAC debated at length the prospect of human cloning from a federal regulation and prohibition perspective. Concurrent with, and subsequent to, the NBAC hearings, individual states were pursing and continue to pursue legislation which would ban human cloning. These state legislative efforts are being undertaken with much less moral, technical and ethical scrutiny, as compared to the NBAC investigation.

C. Individual States Advance Anti-Human Cloning Legislation

In a widespread movement, many states have introduced their own legislation aimed at banning human cloning and human cloning research. These legislative efforts would generally ban

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171. China Bans Human Cloning Research, XINHUA, May 22, 1997. Italy's newly introduced laws would not only ban all forms of human cloning, but would also impose an upper age limit of 50 on women wishing to use artificial insemination and strictly regulate sperm and egg donation. Richard Waddington, Italy Bids to Ban "Granny Mums", HERALD, Oct. 25, 1997, at 12. Other countries, such as Spain, Germany and Denmark have similar anti-cloning laws. One Lamb, Much Fuss, LANCET, Mar. 8, 1997, at 661.
172. See generally, NBAC REPORT, supra note 2, at 107-110 (recommending a human cloning and related research ban).
174. See id. (focusing on the legal aspects of cloning).
175. Anti-human cloning and anti-human cloning research legislation is presently pending in many states: S.B. 1344, 1997-98 Reg. Sess. (Cal. 1997) (prohibiting a person from cloning a human being and allowing an administrative fine by the State Director of Health Services of $2500 for a first violation, $5000 to $10,000 for the second violation and $15,000 to $100,000 for each subsequent violation); A.B. 1251, 1997-98 Reg. Sess. (Cal. 1997) (providing a criminal fine punishment for any person who clones a human cell or purchases or sells an ova, zygote, embryo or fetus, for the purpose of cloning a human being); H.B. 1237 1997 Reg. Sess. (Fla. 1997) (prohibiting human DNA cloning in the state); H.B. 2235, 90th Gen. Assembly, 1997-98 Reg. Sess. (Ill. 1997) (prohibiting human cloning and
human cloning, human cloning research and impose various penalties on those who violate the anti-cloning laws.\textsuperscript{176} While state efforts to effectuate a moratorium on human cloning are proceeding swiftly, many of these efforts generally appear to lack even a basic technical assessment of the new technology.\textsuperscript{177} Additionally, much of the pending state legislation is ambiguous with respect to what is actually being banned.\textsuperscript{178} Illinois,\textsuperscript{179} Maryland,\textsuperscript{180} Missouri\textsuperscript{181} and New York\textsuperscript{182} have all introduced bills and resolutions which attempt to go beyond a simple human cloning ban and related research ban. Recently, California became the first state to enact a law, effective January 1, 1998, which


177. \textit{See}, e.g., H.B. 1508, 144th Gen. Assembly, 1997-98 Reg. Sess. (Ga. 1997) (loosely defining "cloning" and not defining "human being"). "The term 'clone' means to reproduce another animal by any means other than using the egg of such female and the sperm of such male animal.” \textit{Id}. Under this vague definition, NTT could theoretically be legally utilized by using a female egg, with its genetic material removed, and implanting the empty egg with genetic material derived from male sperm.

178. \textit{See id.} (defining the term loosely).


makes human cloning illegal. The law provides monetary fines up to $1,000,000 for corporations, and up to $250,000 for individuals who violate the new law. In a move away from the imposition of large monetary fines, several pending state bills and resolutions make human cloning and human cloning research felonious acts. The Illinois legislature, for example, has determined that a person who intentionally violates the Illinois Human Cloning Prohibition Act commits a Class Four felony.

While both federal, state and foreign approaches to human cloning entail complete bans on such activity, a policy narrowly allowing human cloning and related research is not only possible, but procreatively desirable. Such a policy is commensurate with much of the aforementioned discussion, but provides a different conclusion than an absolute ban on cloning.

III. TOWARDS CREATING A NON-BANNING HUMAN CLONING POLICY: AN ANALYSIS OF PROPOSED REGULATIONS WHICH WILL SHAPE A MORE REASONABLE UNITED STATES POLICY

After release of the NBAC report on human cloning, critics and supporters voiced both negative and positive views of the NBAC recommendations. Section A discusses the praise and disdain expressed by many analysts following the NBAC report. Section B explores possible constitutional implications to the right to procreate, based primarily on a recent Seventh Circuit holding. Finally, Section C briefly addresses the issue of property rights in DNA. These sections lead to the suggestion that any human cloning policy should at a minimum mirror current federal and state reproductive laws.

A. Praise For and Against The NBAC Recommendations and Subsequent Federal Legislation: Did the Report Sell the Public Short?

Subsequent to the final NBAC report on human cloning, legislative debates began discussing new legislation banning human cloning and related research in the United States. Some

183. Jake Henshaw, GANNETT NEWS SERV., Oct. 8, 1997. The new cloning law does not interfere with cellular cloning or cellular cloning research. Id. The law clearly forbids the creation of a whole human being. Id.
185. Id.
188. See, e.g., Senate Panel Examines Ethical Issues Surrounding Cloning, Embryo Research, 5 HEALTH CARE POLY R. 25 (BNA) (June 23, 1997) (criticizing the anti-cloning position used by the NBAC).
Commentators agreed with the cloning ban which the NBAC recommended, but disagreed that such a ban should be cloaked in safety issues. Rather, greater deference should be given to the moral and ethical reasons behind banning human cloning.

Critics of the NBAC recommendations and the proposed federal legislation that followed pointed out several weaknesses in the anti-cloning approach which is being taken by the United States. There is great concern by scientists with respect to the definitions of scientific terms used in the NBAC report and in the federal legislation. One scientist opined that the definitions of many of these terms were not correctly stated by either the NBAC or legislators. Another concern that was expressed is that the federal legislation does not include a state law preemption clause. The lack of this clause may produce a myriad of state laws which are not only inconsistent from state to state, but also conflict with federal prohibitions. Additionally, the federal bills contain an "intent" requirement, whereby violation of the law would require the intent to create a human being using NTT, regardless if NTT-embryo implantation does or does not ultimately occur. Critics urge that intent is irrelevant and the act of cloning through NTT should control the illegality of a researchers conduct. One option blatantly absent, as observed by this author, from the NBAC policy recommendations was a policy which allowed human cloning and related research to proceed, but only under tight regulatory control.

189. Cath Blackledge, Cloning Conference Food For Thought... And Sheep, 13 PHARM. BUS.: NEWS 24, 24-27 (1997). Anti-abortion groups strongly disfavored the NBAC report based on the premise that the NBAC has opened the door on embryo cloning research which involves research on embryos less than 14 days old; these embryos are killed during the research. Cloning: Panel Offers Recommendations, ABORTION RPT., June 9, 1997.
190. Id. Other complaints included the fact that there was no moral justification for allowing embryo cloning research to proceed, the lack of concern over NTT from non-embryo somatic cells, and the failure to address the possible use of NTT whereby material is transferred to an egg from an embryo. Id.
192. See id. (explaining that restrictions on human cloning need to be clear).
193. Id.
195. Id.
196. Id.
197. Id.
198. NBAC REPORT, supra note 2, at 107-110. The NBAC report fails to provide the obvious option that human cloning through NTT could be allowed and well regulated. Id.
B. Procreative Rights: Is There a Constitutional Right to Procreate Through Cloning?

The Supreme Court has directly addressed procreative autonomy and the constitutional issues related thereto. The Court has not directly ruled that there is a constitutional right to procreate, but rather such a right is inferred from holdings guaranteeing a right to privacy in the bedroom and protection of various reproductive privileges. Additionally, the Court has held that there is no distinction between married and single persons with respect to procreative liberties. "If the right of privacy means anything, it is the right of the individual, married or single, to be free of unwarranted government intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child." It is well settled that a fundamental right to bear children does exist. This right is "one of the basic civil rights of man." There are fundamental liberties involved with intimate relationships, families and decisions on whether or not to have children.

In what appears to be another potential ground breaking case, Lifchez v. Hartigan, a woman was held to have a fundamental right to privacy to make reproductive choices free of governmental interference. Thus, the right to submit to a medical procedure that may bring about, rather than prevent, pregnancy, is constitutionally guaranteed.

Doctors in Lifchez were providing

199. See Skinner v. Oklahoma, 316 U.S. 535, 541 (1942) (holding that procreation is fundamental for continued human existence); see also Carey v. Population Serv. Int'l, 431 U.S. 678, 685 (1977) (stating that "the decision whether or not to beget or bear a child is at the very heart of [a] cluster of constitutionally protected choices.").

200. See, e.g., Griswold v. Connecticut, 381 U.S. 479, 486 (1965) (protecting the sanctity of marriage); see also Eisenstadt v. Baird, 405 U.S. 438, 453 (1972) (holding there is right to privacy in the use of contraception); Roe v. Wade, 410 U.S. 113 (1973) (providing the Constitutional right to choose to have an abortion is encompassed within the right to privacy).


202. Id. at 195 n.52 (quoting Eisenstadt, 405 U.S. at 453).

203. Id. at 195.

204. Skinner, 316 U.S. at 541. See also Carey, 431 U.S. at 685 (stating that "[t]he decision whether or not to beget or bear a child is at the very heart of [a] cluster of constitutionally protected choices."). The Court disfavors interference with this non-absolute procreative right. Id.

205. See Planned Parenthood v. Casey, 505 U.S. 833, 851 (1992) (holding that the Constitution protects decisions relating to marriage, procreation, contraception, family relations, child rearing and education).


207. Id.
experimental reproductive assistance through embryo transfer and chorionic villi sampling. These experimental procedures "fall within a woman's zone of privacy." Further, "[s]ince there is no compelling state interest sufficient to prevent a woman from terminating her pregnancy during the first trimester . . . there can be no such interest sufficient to intrude upon these other protected [reproductive] activities during the first trimester." Additionally, a doctor who specializes in providing assisted reproductive services, such as reproductive endocrinology and fertility counseling, can assert the reproductive privacy rights of his patients. Whether or not an absolute and fundamental right to procreate will evolve from this progressive and poignant case remains to be seen. However, the prospect of human cloning may force the Supreme Court to directly rule on this issue in the very near future. Should a fundamental, constitutional right to procreate exist, based on a right to privacy, states will be required to show a compelling state interest before interfering with such a right. Showing that there is a compelling state interest, which would likely be based primarily on subjective moral and ethical arguments to prevent the birth of a healthy human being, might prove difficult.

In addition to possible procreative constitutional barriers, the federal human cloning ban and pending state bills, if enacted, may even be subjected to constitutional questions of federal jurisdiction over private research. Additionally, a federal ban on cloning research could meet First Amendment claims of freedom of inquiry. The latter constitutional issue may have a direct bearing on whether scientists possess a constitutional right to experiment with human cloning using NTT and related technologies.

208. Embryo transfer involves creating an embryo in a surrogate, removing the embryo and implanting it in an infertile woman. Id. at 1367. The embryo may be created by IVF, sperm donation or egg donation. Id.
209. Chronic villi sampling involves the removal of a small amount of fetal tissue from an immature fetus, whereby the tissue gives diagnostic information which may aid a woman in deciding whether or not to have an abortion based on potential birth defects. Id.
210. Id. at 1376.
211. Id. at 1377.
212. Id. at 1376 n.8.
214. Labor and Human Resources Hearing, supra note 30 (statement of R. Alta Charo, Associate Professor of Law and Medical Ethics, University of Wisconsin). The Fifth and Fourteenth Amendments are potentially the foundation for federal jurisdiction, but private researchers and corporations could challenge such jurisdictional claims. Id.
215. Id.
216. Id.
C. Addressing Property Rights in DNA: Should Such A Right Exist In a World Where Human Cloning May Become a Reality?

An issue more than worthy of the brief discussion provided herein, is the recognition of a potential property right in DNA and reproductive materials, particularly with respect to human cloning and related research. In order for human cloning to occur, the use of a person's DNA must theoretically occur in order to make such a clone. Accordingly, addressing the property rights of a "donor's" DNA, relinquishment of those right by the donor and acquisition of those right by the clonee is necessary.

One view of DNA property rights suggests that if a property right does exist in DNA, then a person created from a parent's DNA through blastomere separation does not have a property right in her DNA, as that DNA property right belongs to the parent. The California Supreme Court in Moore v. Regents of The University of California addressed the issue of property rights in cells, tissues and body parts. It concluded that property rights do not exist in excised body tissues, nor in the proteins contained therein. Accordingly, a patient may not claim a valid property right with respect to improper conversion by her doctor, in using such tissues or proteins without her informed consent. The court, using fact specific reasoning, indicated that a person does not have a property right in proteins contained in body tissues, as these proteins were indistinguishable from the proteins in any other person's body tissues. A key observation is that the court did not address situations involving genetic material such as DNA. DNA in one person, unlike the indistinguishable tissues and proteins which the court in Moore v. Regents based its non-property right holding on, is clearly distinct from another persons DNA. DNA is clearly unique to each individual.

217. See, e.g., Mona S. Amer, Breaking The Mold: Human Embryo Cloning and Its Implications For a Right to Individuality, 43 UCLA L. REV. 1659, 1666-82 (discussing property rights in DNA and DNA as a potential body part); see also, OFFICE OF TECHNOLOGY ASSESSMENT, U.S. GOVERNMENT PRINTING OFFICE, OTA-BA-337, NEW DEVELOPMENT IN BIOTECHNOLOGY: OWNERSHIP OF HUMAN TISSUES AND CELLS (1987) (addressing the property rights in tissues and cells).
218. Wilmut et al., supra note 3, at 810.
219. Amer, supra note 217, at 1669.
222. Moore, 793 P.2d at 489.
223. Id. at 490.
224. Id. The court failed to address where it would stand with respect to distinguishable body cells. Id.
225. Warren Robak, Researchers Offer New Approach To Interpreting DNA Evidence; Method is Simpler, Less Prone to Scientific Dispute (last modified
Property rights disputes over reproductive materials have become more common as assisted reproductive techniques proliferate. The court in Hecht v. Superior Court essentially recognized a property right in the frozen sperm of a deceased donor. The court found that a sperm donor has a unique property right in such sperm.

While the court in Hecht found a property right in sperm, the property status of frozen embryos was contrastingly decided in Davis v. Davis and York v. Jones. The court in York held that a married couple had a property right in a "cryopreserved pre-zygote" or a frozen embryo, which was created using the couples sperm and eggs. In an opposite holding, the court in Davis held that frozen embryos are neither persons nor property. Many commentators viewed Davis as a negative limitation on a perceived right to procreate. In a more neutral decision, the court in Kass v. Kass declined to rule on property issues surrounding the fate of frozen embryos produced by a couple embroiled in divorce proceedings. Rather, the Kass court held that the clear intent of the parties that created the frozen embryos, with respect to "ownership" of such embryos, should control the fate of the embryos. Courts should not interfere with a parties private disposition towards a frozen embryo.

Notwithstanding the property status of reproductive materials, wide variety of "controversial," alternative reproductive techniques are currently available to individuals desiring children. People longing for children will benefit from a non-banning, well regulated human cloning policy, which expands reproductive liberties, rather than needlessly limiting such liberties.

IV. AN EQUITABLE HUMAN CLONING POLICY PROPOSAL WITH

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226. Id.
227. See, e.g., Hecht v. Superior Court, 20 Cal. Rptr. 2d 275 (Ct. App. 1993) (holding that frozen sperm could be willed by a dead man to his still living girlfriend for the purpose of posthumous conception).
229. Id.
230. Id.
231. 842 S.W.2d 588 (Tenn. 1992).
233. Id. at 427.
234. Davis, 842 S.W.2d at 597.
238. Id.
239. Id.
Central to the policy guidelines proposed herein is the position that enacting the pending federal and state legislation is miscalculated and reproductively oppressive. Rather than absolutely banning human cloning and related research, reasonable guidelines should be established to regulate human cloning in the United States. A policy proposal is presented for the allowance of human cloning in the United States. Such a proposal entails several guiding provisions, including the requirement of informed consent, a majority age requirement and narrowly recognizing property rights in DNA used for cloning purposes. Based on these minimal guidelines the federal government and individual states should enact legislation which allows for well-regulated human cloning and related research, which are both commensurate with this proposal.

Since Dolly’s creation, several propositions suggest moderate alternatives to a human cloning ban. An equitable and moderate human cloning policy which regulates human cloning on a federal level is based on ten key policy considerations proposed herein. Based on these minimal policy guidelines, the federal government and individual states should enact legislation which allows for well-regulated human cloning and human cloning research. Legislators should use the following ten policy considerations as guidelines for the formation of a non-prohibitory human cloning policy in the united states.

1. Human cloning should be allowed as a reproductive choice: The United States should err on the side of allowing the creation of life rather than prohibiting the conception of children through assisted reproductive technologies.

State and federal legislators should view human cloning as singular conception which will create a new human life. The voluntary bringing of life into existence is a positive accomplishment, not a negative deed worthy of criminal or civil punishment. Legislation now pending in many jurisdictions, however, advances the principle that creating human life by

240. See generally Steven Vere, The Case For Cloning Humans (last modified August 13, 1997) <http://www.best.com/~vere/cloning.htm> (discussing alternatives to a full human cloning ban). Any legislation enacted should encompass parallel legal protection for clones and non-clones. Id. Informed consent is a requirement for cloning and cloning should be allowed only for adults. Id. Additionally, convicted felons should be precluded from cloning themselves. Id. See also NBAC Conference, supra note 109 (proposing that the potential reproductive benefits of human cloning are great, that possible harms are speculative and that human cloning should be allowed with informed consent).
cloning would be a serious crime labeled as a "felony." Such legislation is short-sighted at best and reflects negatively on the creation of life. Quick-acting, "politically correct" legislators contemplating the anti-cloning laws should put themselves in the position of a loving, infertile couple. Their lives revolve around trying to have children and a moment of compassion and understanding by these legislators, with respect to human cloning, may actually provide not only a reasonable and humane cloning policy, but also a much needed reproductive technique to these couples. If the United States is going to err, it should err on the side of permitting the creation of life through cloning, rather than taking the paternalistic, moral high ground and prohibiting human cloning altogether. People should base a decision to have children through cloning on their personal moral, ethical and religious views. Such a basis is preferable over the political views and morals of governmental legislators and the media. The United States government, through pending anti-cloning legislation, feels that it knows what is reproductively proper for society. Neither the United States government nor individual state governments should intrude into the private bedrooms, or laboratories as it may be, of couples who desperately want to have children.

The federal human cloning ban should not succeed due to the implied Constitutional right to procreate. Lifchez v. Hartigan should serve as persuasive guidance for other courts. A human cloning ban restricts procreative liberty and will potentially deny thousands of individuals the means to have children. Infertile couples, unmarried women and men, involuntarily sterilized individuals and genetically-handicapped individuals are needlessly prohibited from using NTT and related cloning technologies as a viable alternative to sexual reproduction or IVF, under the proposed legislation. "Human cloning, like artificial insemination, is a means to improve the lives of infertile couples.

244. Id. at 1361.
246. Azell Murphy, Experts Argue Legal Issues Tied To Cloning, CHI. DAILY L. BULL., Dec. 8, 1997 (quoting John Robertson). "Should human cloning become established as a safe and effective practice, the most plausible reason to employ the procedure would be indistinguishable from currently accepted forms of assisted reproduction." Id.
2. Minor children in existence should not be cloned: The child's welfare is paramount and informed consent should be required for human cloning in all situations.

A recent essay addressed the issues of cloning children already in existence.247

Children, though generally unable to articulate, advocate, and exercise judgment about their interests nevertheless have critical interests . . . that deserve respect and recognition . . . . Cloning of an existing child by transferring DNA from a body cell of the child is ethically unacceptable because it involves a child in the process of human procreation.248

Cloning children does not involve reproducing one or both parents; it involves asexual reproduction with which only a child is involved.249 No child should be forced to have offspring, by unwillingly or unknowingly participating in replication.250

As with any medical procedure, whether reproductive or curative in nature, informed consent should be required in all situations involving human cloning.251 Again, as children are often incapable of informed consent, children should not be cloned based on this immaturity.252 Additionally, parents should be forbidden from imposing their reproductive will on a child by using their own "consent" to force an unknowing child to bear offspring through cloning, no matter how noble the purpose or motivation of such a parent.253

248. Id. at 525, 528. Although Professor Newman does not frame his comments under the title of informed consent, his poignant dialog implies that reproduction, no matter what its form, should be left to fully capable adults. Id. at 258-29. "The use of that cell [taken from a child] to produce a baby is an act that makes the child a participant in the reproductive process, a process that should be the exclusive domain of adults." Id. "A child cannot take responsibility for the act of reproduction, and should not be burdened with the knowledge that he has been used for such a purpose." Id. at 529. "Involving the child, however much or little, in a procreative act with its own mother is to cross a barrier between mother and child that must remain absolute and unbreachable." Id.
249. Labor and Human Resources Hearing, supra note 30 (statement of George J. Annas, Professor and Chair, Health Law Department, Boston University School of Public Health).
250. Id.
251. NBAC Conference, supra note 109 (suggesting that informed consent is paramount with respect to any human cloning procedures).
253. Id.
3. A formal, narrow personal property right in DNA: Human cloning demands such recognition.

Rather than banning human cloning, legislators and courts should focus on recognizing a narrow property right in DNA. Allowing such a property right will deter the misappropriation of DNA for cloning purposes, where a child is created using DNA without the "owners" consent. While there are calls for wide-ranging recognition of property rights in organs, body parts and tissues, such broad recognition is not necessary in allowing human cloning and related research to proceed. Just as a man and his girlfriend were found to possess a unique, personal, reproductive property right in sperm, so too should such a right exist in DNA. In view of potential human cloning in the future, DNA should now possess the same unique property attributes as does frozen sperm because "... unlike other human tissue it is gametic material that can be used for reproduction."

4. The selling of DNA for cloning purposes should be prohibited.

Just as the selling and profiting from ones organs, tissues and cells are prohibited in some states, the selling of DNA for cloning purposes should be prohibited. Conversely, the donation of DNA for reproductive purposes should be permitted, in line with any current or future state or federal sperm bank and egg donation laws. The creation of "DNA banks" should be acceptable, with the appropriate regulation, so long as DNA is donated, not sold, to such an enterprise.

5. Human cloning should be available as a reproductive alternative and regulated in a manner similar to current non-traditional reproductive techniques.

Concerns over the creation of a clone, whose sole purpose and existence is merely as a vehicle to be used for spare body parts, are misplaced and illogical. If a woman desires to have a child whose main purpose is to be an involuntary organ donor, presently or sometime in the future, she may use her egg and donated sperm from a sperm bank to create such a child. If a man desires organ servitude offspring, he may enlist the service of a surrogate, impregnate her using her egg with his sperm through IVF and also

255. Hecht, 20 Cal. Rptr. 2d at 275.
256. Id.
257. Moore, 793 P.2d at 479.
258. Carey, supra note 94, at 50.
create a child for organ harvesting purposes. Since the development of IVF, surrogate motherhood, sperm banks and egg donation, there has not been a crazed rush by the public to create children for spare parts. Much to the cloning alarmists surprise, this reality will also hold true for legalized human cloning. Accordingly, human cloning should be allowed and regulated as a viable reproductive choice in the United States. Existing state and/or federal laws which control the use of eggs, sperm and embryos for assisted reproduction purposes is extendable to the regulation of DNA for cloning purposes.\(^{260}\)

6. **Cloned offspring should acquire the same rights, liberties and legal protection as would any other human being.**

   Cloned people should be socially and legally treated no differently than any sexually or IVF-conceived person should be. The Constitution is designed to protect life, liberty and the pursuit of happiness for all citizens of the United States.\(^{261}\) The Constitution, along with state and federal laws, should be non-discriminatory in nature and should offer the same legal protections to all persons created sexually or asexually.

7. **Cloned offspring automatically acquire DNA property rights in their "new" DNA: A clonor relinquishes his or her control of his or her DNA, but only to the specific cloned offspring.**

   When a child is conceived through non-cloning reproductive means, be it through consensual sexual relations, IVF involving sperm donation or egg donation or both, or some form of surrogacy, the persons contributing to the genetic make up the resulting child essentially relinquish any "rights" they may have in their DNA. Both a man and a woman contribute genetic DNA to a child produced by the various non-cloning means of conception. However, a "genetic parent" should not have a controlling property right in their DNA which is voluntarily intermingled with the other parent's DNA, both of which go to making up the child. Theoretically, the child not only physically possesses the combined genetic material of the parents, but also is free from interference or control of such genetic material by the parents. The child, upon reaching maturity, is free to use its genetic material to reproduce, or not reproduce, as she sees fit.

   Accordingly, these logical concepts are ready extendable to cloned individuals. When a person voluntarily enters into reproduction through cloning, they give up any claim they may have to their DNA to the specific child created by cloning.\(^{262}\) The

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261. DECLARATION OF INDEPENDENCE para. 2 (U.S. 1776).
262. NBAC Conference, *supra* note 109, at <http://www.washington-
cloned child should logically acquire a "unique" property right in their DNA, even if such DNA is present in two or more individuals. The cloned child is free to use or not to use their DNA for reproductive purposes, just as sexually conceived person can.

8. **So long as informed consent is present from an adult, there should be no civil or criminal penalties for human cloning.**

   The approach of imposing monetary fines as a penalty for human cloning should not be allowed, based on public policy considerations, whereby such penalties convey a negative message to a person who has become a life in being as a result of cloning—it is demoralizing to the cloned child. Should a person break the "law," the child may feel that its existence is the result of a criminal act—when in reality, the child is really the result of two loving parents and some bright scientists. The conduct which must be regulated through possible criminal and civil penalties is not the actual creation of a child through human cloning, but rather, any abuse of such technology which harms a cloned child.

9. **Human cloning research should be actively pursued to improve the safety and efficacy of cloning technology.**

   Allowing active research on human cloning will avoid situations in which desperate individuals or couples turn to back-alley cloning services. Promptly perfecting human cloning through aggressive, open and non-secretive research will not only benefit parents who want children, but will also benefit the resulting children produced by cloning. The publication of human cloning research, in peer reviewed journals, will allow doctors and researchers to advance human cloning techniques, while minimizing physical and emotional harm to parents and children.

10. **Should NTT ever become adapted to cloning deceased persons, such cloning should be prohibited**

   Just as a child cannot give informed consent, a deceased person cannot give her consent from the grave to be "reincarnated" through cloning. Accordingly, the cloning of deceased persons should not be allowed. Such a prohibition should also be maintained for children who have died at a young age. While parents who have lost a child should be allowed to clone themselves to create a child based on reasons already mentioned, cloning of their deceased child using its DNA will not bring the lost child back and should not be allowed. Again, the child, although deceased, remains incapable of giving informed consent for the use

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fax.com/pass/doc-sets/bioethics/macklin.html.

263. Powledge, supra note 24, at 5.

264. Bovsun, supra note 57.
of his or her DNA from the grave. 265

The issue of whether a living person may designate the use of their preserved DNA for cloning purposes after they have died should be regulated in a fashion similar to state case law controlling frozen genetic material which is left behind by a deceased donor. The court in Hecht provided guidance that frozen sperm could be used for posthumous reproduction. 266 This case should serve as guidance, whereby preserved or frozen DNA should be usable in posthumous reproduction thorough cloning if its "owner" so desires.

CONCLUSION

Human cloning and related research offers the prospect of many potential benefits, including physical, emotional and commercially utility. 267 Human cloning also potentially entails many possible abuses. 268 However, many of these potential evils are speculative and based on paternalistic cultural values. 269 Baby selling is prohibited as is the selling of human organs and these same types of laws can protect human cloning and related research. 270 The potential good of NTT outweighs the purely speculative evil which may result from the cloning technology. 271 NTT may not only be a potential new reproductive technique, but it may in fact be the only way certain couples or individuals can have children genetically linked to themselves. 272

Human cloning is presented as an affront to human dignity and morality, and yet no precise definition is offered by commentators or law makers as to what actually is an affront to human dignity, 273 nor whose morals should be imposed in reproductive situations. The banning of human cloning should not be undertaken by the United States simply because it the morally, ethically and politically popular thing to do. By using the policy recommendations contained herein, law makers should be able to enact legislation which regulates human cloning, rather than banning it. Accordingly, the pending federal legislation banning human cloning should not be enacted, as neither should the various pending state legislation. Both current and pending state and federal laws are "obnoxious law" which should be stringently

266. Hecht, 20 Cal. Rptr. 2d at 275.
267. Kahn, supra note 16.
269. Powledge, supra note 24, at 5.
270. Id.
271. Id.
272. NBAC REPORT, supra note 2 at 31-32.
273. See NBAC Conference, supra note 109 (stating that cloning is an affront to human dignity without expounding on what is meant by the phrase).
executed.274

274. Grant, supra note 1.