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LEGAL RESPONSES TO THE POTENTIAL CLONING OF HUMAN BEINGS

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I. INTRODUCTION

The media frenzy and widespread public discussion regarding human cloning began in late February 1997 when the world learned of the first successful cloning of a sheep¹ by somatic cell² nuclear transfer.³ This technique involves obtaining genetic material from a differentiated somatic cell of an adult and then transplanting it into an egg from which the nucleus has been removed.⁴ This egg is then implanted in an adult womb for development. The result is the birth of an offspring with genetic material identical to the original somatic cell, with genetic information from only one "parent." Previously, this technique had never been successful in mammals. The National Bioethics Advisory Commission (NBAC or Commission) report suggests that this type of cloning involves "three novel developments: the replacement of sexual procreation with asexual replication of an existing set of genes; the ability to predetermine the genes of a child; and the ability to create many genetically

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1. See Ian Wilmut et al., *Viable Offspring Derived from Fetal and Adult Mammalian Cells*, 385 NATURE 810-13 (1997) (announcing the birth of live lambs from cell populations established from adult mammary gland, fetus, and embryo, and an explanation of the methods used).

2. The National Bioethics Advisory Commission defined a somatic cell as "any cell of the embryo, fetus, child, or adult which contains a full complement of two sets of chromosomes. . . ." NATIONAL BIOETHICS ADVISORY COMMISSION, CLONING HUMAN BEINGS: REPORT AND RECOMMENDATIONS OF THE NATIONAL BIOETHICS ADVISORY COMMISSION 1 (1997) [hereinafter NBAC REPORT].

3. Wilmut et al., *supra* note 1. For a discussion of blastomere separation and cloning issues, see Rebecca Kolberg, *Human Embryo Cloning Reported*, 262 SCI. 652 (1993); John A. Robertson, *The Question of Human Cloning*, 24 HASTINGS CTR. REP., Mar.-Apr. 1994, at 6. Blastomere separation involves cloning mammals from embryo cells by separating the cells of a single embryo to create other embryos. See also Mona S. Amer, Comment, *Breaking the Mold: Human Embryo Cloning and Its Implications for a Right to Individuality*, 43 UCLA L. REV. 1659 (1996) (providing an introductory discussion about blastomere separation).

4. Harold T. Shapiro, *Ethical and Policy Issues of Human Cloning*, 277 SCI. 195 (1997).

identical offspring.”⁵ Almost immediately, policy makers around the world began to question potential uses and abuses⁶ of such technology and subsequently began to develop legislation to regulate scientific developments related to the cloning of human beings.

This Article will address the current legal responses to the prospect of human cloning. Part II addresses proposed legislation at both the federal and state levels and comments on the international initiative. Part III describes the related constitutional issues. Part IV discusses issues and concerns raised in Parts II and III, including perceived harms and benefits of human cloning through the use of the somatic cell nuclear transfer technique.

II. LEGAL ACTIVITY AT THE FEDERAL, STATE, AND INTERNATIONAL LEVELS

Much controversy has surrounded the questions whether to regulate human cloning and what the appropriate legislative format might be. For example, Senator Tom Harkin of Iowa believes that human cloning is “right and proper.”⁷ Senator Bill Frist of Tennessee, Chairman of the Committee of Public Health and Safety, believes that lawmakers should work toward drafting a human cloning bill that does not jeopardize possibly life-saving research.⁸ Harold Varmus, Director of the National Institute of Health, cautioned a congressional subcommittee against premature cloning legislation.⁹ Varmus is concerned about anti-cloning laws being too restrictive and thus preventing potentially beneficial research.¹⁰ The controversy has resulted in different initiatives to regulate human cloning technology on both the federal and state levels.¹¹

5. NBAC REPORT, *supra* note 2, at 2.

6. See generally Kevin P. Quinn, *Human Cloning After Dolly: What Sort of Creatures Might We Become?*, 38 JURIMETRICS 91, 96 (1997) (explaining “[t]he danger that human cloning would alter the very meaning of humanity”); John Harris, ‘Goodbye Dolly?’ *The Ethics of Human Cloning*, 23 J. MED. ETHICS 353 (1997).

7. *Scientist Who Cloned Sheep: Cloning Humans Would Be ‘Inhuman’* (CNN Interactive, Mar. 12, 1997) <<http://www.cnn.com/HEALTH/9703/12/nfm/cloning/index.html>> [hereinafter *Scientist Who Cloned Sheep*].

8. *Id.*

9. Declan Butler & Meredith Wadman, *Calls for Cloning Ban Sell Science Short*, 386 NATURE 8 (1997).

10. *Id.* See also Herbert H. Jervis, *The Beneficial Aspects of Cloning: A View from the Plant World*, 38 JURIMETRICS 97 (1997). See *infra* notes 26-28 and accompanying text.

11. See generally George Annas, *Human Cloning: Should the United States Legislate Against It?*, 83 A.B.A. J., May 1997, at 80.

A. The Federal Level

In February 1997, President Clinton asked the NBAC to review the legal and ethical issues associated with human cloning.¹² The President asked the NBAC to discuss human cloning issues for ninety days and to draft a final report and recommendations on possible federal action to prevent the abuse of cloning techniques as applied to humans.¹³ On February 27, 1997, a bill was proposed in the U.S. Senate addressing the cloning of human beings.¹⁴ On March 4, 1997, President Clinton issued a moratorium directing that no federal funds shall be allocated for the cloning of human beings.¹⁵ President Clinton also asked privately funded scientists to halt human cloning research. On March 5, 1997, the U.S. House of Representatives proposed legislation addressing the issue of human cloning.¹⁶

Among other issues, the NBAC reviewed the current status of legislation related to human cloning and the possible constitutional arguments if laws were passed to restrict the creation of children through somatic cell nuclear transfer cloning.¹⁷ After a thorough inquiry into and discussion of the matter, the NBAC determined that "any attempt to clone human beings via somatic cell nuclear transfer techniques is uncertain in its prospects, is unacceptably dangerous to the fetus and, therefore, morally unacceptable."¹⁸ At this time, President Clinton's moratorium restricts human cloning only in situations involving federal funds.¹⁹ Thus, no regulations control the use of private funds for human cloning.²⁰ The NBAC recommended that President Clinton continue

12. Letter from William J. Clinton, President of the United States, to Harold Shapiro, Chair, National Bioethics Advisory Commission (Feb. 24, 1997), *reprinted in* NBAC REPORT.

13. Letter from Harold T. Shapiro, Chair, National Bioethics Advisory Commission, to William J. Clinton, President of the United States (June 9, 1997), *reprinted in* NBAC REPORT [hereinafter Letter to the President].

14. S. 368, 105th Cong. (1997).

15. President's Remarks Announcing the Prohibition on Federal Funding for Cloning of Human Beings and an Exchange with Reporters, 33 WEEKLY COMP. PRES. DOC. 278-79 (Mar. 10, 1997). *See also* Editorial, *One Lamb, Much Fuss*, 349 LANCET 661 (1997) (acknowledging that although the United States has no federal legislation banning human cloning, all federal funding for human embryo research has been banned since 1994). *Cf.* GREGORY E. PENCE, WHO'S AFRAID OF HUMAN CLONING? (1998) (arguing against President Clinton's ban on human cloning).

16. H.R. 923, 105th Cong. (1997).

17. NBAC REPORT, *supra* note 2, at i.

18. *Id.*

19. *Id.* at 3.

20. *Id.*

the current moratorium on human cloning and ask for voluntary compliance from the private sector while federal legislation banning human cloning was further explored and discussed.²¹

Following the recommendations of the NBAC, President Clinton introduced the Cloning Prohibition Act of 1997.²² President Clinton transmitted this legislative proposal to implement the NBAC's guidelines.²³ The President's proposal would prohibit any attempt to create a human being using somatic cell nuclear transfer technology, but would allow further review of both the ethical and scientific issues surrounding the use of somatic cell nuclear transfer in humans.²⁴ In reference to the proposed legislation, President Clinton stated, "What the legislation will do is to reaffirm our most cherished beliefs about the miracle of human life and the God-given individuality each person possesses [and it] will ensure that we do not fall prey to the temptation to replicate ourselves at the expense of those beliefs."²⁵

Although he would prohibit research on human cloning, President Clinton would carve out an exception for certain types of cloning research. The NBAC had acknowledged the potential medical benefits from cloning research, such as growing new tissue and using genes to prevent or improve the treatment of diseases.²⁶ Based on the findings of the NBAC that cloning technology may be beneficial for producing replacement skin, cartilage, or bone tissues for burn and accident victims and/or nerve tissue for spinal cord injuries, the proposed Cloning Prohibition Act of 1997 would not forbid such research activities.²⁷ President Clinton's proposal would permit the following research activities within biomedical and agricultural areas: (1) the use of somatic cell nuclear transfer or other cloning technologies to clone molecules, DNA, cells, and tissues; and (2) the use of somatic cell nuclear transfer techniques to create

21. Letter to the President, *supra* note 13. See also Elliot Marshall, *Panel Weighs a Law Against Cloning*, 276 SCI. 1185 (1997).

22. *Id.*

23. President's Message to the Congress Transmitting the Proposed "Cloning Prohibition Act of 1997," 33 WEEKLY COMP. PRES. DOC. 845-46 (June 16, 1997) [hereinafter Message to the Congress].

24. *Id.*

25. Paul Recer, *Clinton Backs Human Cloning Ban*, WASH. POST, June 9, 1997, at A1.

26. NBAC REPORT, *supra* note 2, at 34.

27. See Message to the Congress, *supra* note 23.

animals.²⁸ President Clinton's legislation proposal would also require the NBAC to perform further study and produce another report in four and a half years.²⁹ At that time, the President in office would reconsider how to address the issues of human cloning.

The NBAC suggested that human cloning may be regulated through either federal legislation or other means, such as voluntary participation in a moratorium or a prohibition on the use of federal money to fund human cloning research.³⁰ Currently, nine federal congressional bills relate to human cloning. Six bills were introduced or placed in the Senate:

1. Senator Bond sponsored one bill which was introduced on February 27, 1997.³¹ This bill is a proposal to prohibit the use of federal funds for research regarding the cloning of a human individual.³² The bill defines the term "cloning" as "the replication of a human individual by the taking of a cell with genetic material and the cultivation of the cell through the egg, embryo, fetal, and newborn stages into a new human individual."³³ The bill was referred to the Committee on Labor and Human Resources.³⁴

2. The Human Cloning Prohibition Act, sponsored by Senator Campbell, was introduced in the Senate on January 27, 1998. The bill states that "Congress finds that the Federal Government has a moral obligation to the nation to

28. *Id.* See also Recer, *supra* note 25.

29. President's Remarks Announcing the Proposed "Cloning Prohibition Act of 1997," 33 WEEKLY COMP. PRES. DOC. 844-45 (June 16, 1997).

30. NBAC REPORT, *supra* note 2, at 87. The NBAC proposed the following policy options:

- I. To continue the existing moratorium on federal funding of any effort to create a child through somatic cell nuclear transfer, and to emphasize that the intent of this moratorium is to cover any effort to use federal funds for this technology whether in a clinical or research setting.
- II. To obtain the agreement of the private sector to abide by the spirit of the federal moratorium.
- III. To extend to all participants in research protocols the human subjects protections already in place for those enrolled in federally funded protocols.
- IV. To prohibit efforts to clone human beings by federal statute.
- V. To facilitate public education and debate, in preparation for legislative action, if any, and to carry on a national discussion about the uses of somatic cell nuclear transfer cloning technology.
- VI. To cooperate with other nations to enforce any common elements of our respective policies regarding efforts to clone human beings.

Id. at 95-96.

31. 143 CONG. REC. S1734-35 (Feb. 27, 1997) (remarks by Sen. Bond).

32. S. 368, 105th Cong. (1997).

33. *Id.*

34. See *supra* note 31.

prohibit the cloning of human beings."³⁵ This bill proposes to make it unlawful for any person to clone a human being or to conduct research for the purpose of cloning a human being or otherwise creating a human embryo.³⁶ It would also prohibit federal funds from being obligated or expended to knowingly conduct any research project to clone a human being or otherwise create a human embryo.³⁷ Furthermore, it sets forth a civil monetary penalty. Any individual in violation of the legislation would be fined not more than \$5000 and would be prohibited from receiving any federal funding for research for a period of five years after such violation.³⁸ The bill was referred to the Committee of Labor and Human Resources.³⁹

3. Senator Lott and fourteen others sponsored the Human Cloning Prohibition Act which was introduced on February 3, 1998.⁴⁰ This bill proposes to amend the federal criminal code to prohibit any person or entity from using human somatic cell nuclear transfer technology or from importing an embryo produced through such technology.⁴¹ Furthermore, the bill would create penalties for violations of up to ten years in prison, a fine, or both, although the fine cannot be more than twice the amount of any gross pecuniary gain derived from a violation.⁴² The bill would also establish within the Institute of Medicine a national commission to promote a national dialogue on bioethics and expresses the sense of Congress that the federal government should advocate and join an international effort to prohibit the use of human somatic cell nuclear transfer technology to produce a human embryo.⁴³ A cloture motion to proceed to consideration of this measure failed in the Senate on February 11, 1998.⁴⁴

4. The Human Cloning Prohibition Act of 1998⁴⁵ was introduced on February 3, 1998, sponsored by Senator Bond and fourteen other senators.⁴⁶ This bill, related to Senate bill 1601 (#3 above) with similar language, was referred to the Senate Judiciary Committee.⁴⁷

35. S. 1574, 105th Cong. (1998).

36. *Id.*

37. *Id.*

38. *Id.*

39. 144 CONG. REC. S48 (Jan. 27, 1998).

40. 144 CONG. REC. S330 (Feb. 3, 1998).

41. S. 1601, 105th Cong. (1998).

42. *Id.*

43. *Id.*

44. 144 CONG. REC. S608 (Feb. 11, 1998).

45. S. 1599, 105th Cong. (1998).

46. 144 CONG. REC. S318-22 (Feb. 3, 1998).

47. 144 CONG. REC. S317 (Feb. 3, 1998).

5. Recent controversy has surrounded the language in Senate bills 1601 and 1602.⁴⁸ Senate bill 1602 is known as the Prohibition on Cloning of Human Beings Act of 1998.⁴⁹ The bill, sponsored by Senators Feinstein, Kennedy, and Moseley-Braun, was introduced on February 3, 1998.⁵⁰ The bill's restrictions are not as broad as those in Senate bill 1601. This bill proposes to amend the Public Health Service Act to make it unlawful for any person to implant or attempt to implant the product of somatic cell nuclear transfer into a woman's uterus, to ship the product of somatic cell nuclear transfer in interstate or foreign commerce for the purpose of implanting such product into a woman's uterus, or to use government funds for an activity prohibited by the bill.⁵¹ Furthermore, the bill would not restrict areas of biomedical and agricultural research or practices not expressly prohibited by the Act, including research or practices involving the use of somatic cell nuclear transfer or other cloning technologies to clone molecules, DNA, cells, and tissues, of mitochondrial, cytoplasmic, or gene therapy, or of somatic cell nuclear transfer techniques to create non-human animals.⁵² The bill would also require the NBAC to submit another report to the President and Congress in the future and would extend the life of the Commission for ten years.⁵³ It would also provide for civil penalties, civil actions, and the forfeiture of certain property.⁵⁴ Senate bill 1602 would give the Attorney General enforcement authority under the Act and the ability to render binding advisory opinions.⁵⁵ This bill also suggests that the President should cooperate with foreign countries regarding cloning technology.⁵⁶ Lastly, the bill would preempt any state or local law which prohibits cloning-related research.⁵⁷ This bill was referred to the Committee on Labor and Human Resources.⁵⁸

48. See Jerome P. Kassirer & Nadia Rosenthal, *Should Human Cloning Research Be off Limits?*, 338 JAMA 905, 906 (1998) (stating that the Bond-Frist bill in the Senate and the Ehlers bill in the House are too restrictive and that the Feinstein-Kennedy Senate bill, which prohibits implantation in a human womb but allows for other research, is a reasonable compromise). The authors assume that Kassirer & Rosenthal were referring to the Ehlers bill, 105 H.R. 922, before it was amended in August 1997 to include non-human cloning research.

49. S. 1602, 105th Cong. (1998).

50. 144 CONG. REC. S322-25 (Feb. 3, 1998).

51. S. 1602, 105th Cong. (1998).

52. *Id.*

53. *Id.*

54. *Id.*

55. *Id.*

56. *Id.*

57. *Id.*

58. 144 CONG. REC. S318 (Feb. 3, 1998).

6. Another Senate bill is also called the Prohibition on Cloning of Human Beings Act of 1998⁵⁹ and is related to Senate bill 1602. It was introduced on February 4, 1998, has the same sponsors, and the same language.⁶⁰ The bill has been placed on the Senate's legislative calendar.⁶¹

Three bills have been introduced in the House of Representatives:

1. Representative Ehlers and forty-two others introduced the Human Cloning Research Prohibition Act⁶² on March 5, 1997.⁶³ This bill was revised as of August 1, 1997, by the Committee on Science.⁶⁴ This proposed legislation would prohibit the expenditure of federal funds to conduct or support any research on the cloning of humans.⁶⁵ The amended bill expressly states that the Act does not restrict other areas of scientific research, such as the use of somatic cell nuclear transfer or other cloning technologies to clone molecules, DNA, cells other than human embryo cells or tissues, or non-human animals.⁶⁶

2. Representative Ehlers and forty-four others also introduced another House bill titled the Human Cloning Prohibition Act⁶⁷ on March 5, 1997.⁶⁸ This bill proposes that "it shall be unlawful for any person to use a human somatic cell for the process of producing a human clone" and sets forth a civil monetary penalty not to exceed \$5000.⁶⁹ On March 14, 1997, this bill was referred to the House Committee on Commerce, the Subcommittee on Health and Environment.⁷⁰

3. Representative Stearns introduced the Human Cloning Research Prohibition Act⁷¹ on January 28, 1998.⁷² This bill would prohibit the expenditure of federal funds to conduct or support research on the cloning of humans but expressly states that other "important and promising" scientific research using

59. S. 1611, 105th Cong. (1998).

60. 144 CONG. REC. S411 (Feb. 4, 1998).

61. 144 CONG. REC. S413 (Feb. 5, 1998).

62. H.R. 922, 105th Cong. (1997).

63. 143 CONG. REC. 765 (Mar. 5, 1997).

64. 143 CONG. REC. H6714 (Aug. 1, 1997) (this amendment was reported to U.S. House from the Committee on Science, H. REP. NO. 105-239, pt. 1, and altered the bill by allowing for non-human cloning research to proceed).

65. H.R. 922, 105th Cong. (1997).

66. *Id.*

67. H.R. 923, 105th Cong. (1997).

68. 143 CONG. REC. H765 (Mar. 5, 1997).

69. H.R. 923, 105th Cong. (1997).

70. 143 CONG. REC. H765 (Mar. 5, 1997).

71. H.R. 3133, 105th Cong. (1998).

72. 144 CONG. REC. E49 (Jan. 28, 1998).

cloning technology would not be prohibited.⁷³ The bill further encourages other countries to establish substantially equivalent restrictions.⁷⁴ This bill was also referred to the House Committee on Commerce, the Subcommittee on Health and Environment.⁷⁵

B. The State Level

Even before the NBAC convened, both federal and state legislation addressing the prohibition of human cloning and human cloning research were proposed.⁷⁶ Following President Clinton's proposals on the federal level, states continued to take steps to regulate human cloning. Proposed state bills vary in their specific prohibitions regarding human cloning. The main categories include: banning the use of governmental funds for any research using cloned cells or tissue; prohibiting the use of governmental funds for cloning an entire individual; banning any research using cloned cells or tissue; and banning cloning of an entire individual. Several bills would also require the creation of panels to analyze human cloning and then advise state legislatures.

1. Alabama

In 1997, two bills were introduced in the Alabama legislature. The bill in the House would prohibit the use of state facilities, employees, or funds for the purpose of cloning or cloning research of entire embryos.⁷⁷ The bill would also punish violators of the provisions. The bill in the Senate would prohibit the cloning of human beings, making cloning a first degree felony.⁷⁸ Additionally, the Alabama Senate proposed a joint resolution in March 1997 urging Congress to guarantee that human cloning is prohibited in the United States.⁷⁹ Neither of the Alabama bills nor the resolution were carried over when the Regular Session adjourned.

73. H.R. 3133, 105th Cong. (1998).

74. *Id.*

75. 144 CONG. REC. H100 (Jan. 28, 1998).

76. NBAC REPORT, *supra* note 2, at 87.

77. H.R. 1082, 1st Reg. Sess. (Ala. 1997).

78. S. 511, 1st Reg. Sess. (Ala. 1997).

79. S.J. Res. 58, 1st Reg. Sess. (Ala. 1997).

The Alabama Senate also introduced three bills in 1998. Two of the bills would prohibit the cloning of human beings.⁸⁰ These bills have been referred to the Senate Committee on Health and Human Resources. The third bill urges Congress to pass and President Clinton to sign federal legislation to prohibit genetic duplication or cloning of human beings.⁸¹ This bill has moved to the Senate Committee on Rules.

2. California

California is the only state which has enacted legislation outlawing human cloning.⁸² The prohibition became effective on January 1, 1998, and lasts for five years.⁸³ Introduced by Senator Patrick Johnston, the legislation addresses a number of issues surrounding human cloning.⁸⁴ The legislation requires California to set up a panel of experts to study the ramifications of human cloning.⁸⁵ The panel will then report its recommendations to both the governor and the legislature so that issues surrounding human cloning may be further studied before the five-year ban ends. The law also prohibits a person from cloning a human being and from purchasing or selling an ovum, zygote, embryo, or fetus for the purpose of human cloning.⁸⁶ The California measure punishes violators of the five-year ban. The state health director has the authority to fine corporations, clinics, firms, hospitals, laboratories, or research facilities up to \$1,000,000 for violating the ban.⁸⁷ The state health director may fine individuals who violate the ban the greater of: (1) up to \$250,000; or (2) double the profit made off their efforts. Additionally, if any profits result from human cloning, the state health director may double the amount of the fines.⁸⁸

80. S. 8, 1st Reg. Sess. (Ala. 1998); S. 68, 1st Reg. Sess. (Ala. 1998).

81. S.J. Res. 6, 1st Reg. Sess. (Ala. 1998).

82. CAL. HEALTH & SAFETY CODE § 24185 (Deering 1997).

83. CAL. HEALTH & SAFETY CODE § 24189 (Deering 1997).

84. See Kristi Coale, *California Takes on Human Cloning*, Political News from Wired News (Sept. 10, 1997) <<http://www.wired.com/news/news/politics/story/6737.html>>.

85. CAL. HEALTH & SAFETY CODE § prec. 24185 (Deering 1997). See also 1997 Cal. Stat. c. 688.

86. CAL. HEALTH & SAFETY CODE § 24185 (Deering 1997).

87. CAL. HEALTH & SAFETY CODE § 24187 (Deering 1997).

88. *Id.* See Jennifer Kerr, *Rules for Teen Drivers Toughened by New Law // LEGISLATION The Governor also Signs Bills That Ban Cloning of Humans and Further Protect the Coast*, ORANGE COUNTY REG. (Cal.), Oct. 9, 1997, at A4, available in 1997 WL 14878173; *Human Cloning Ban Signed*, UPI, Oct. 8, 1997, available in LEXIS, Nexis Library, UPI File.

The California Senate also introduced a joint resolution asking the President and Congress to ban and take all means necessary to prevent human cloning.⁸⁹ Although the resolution failed passage in the Senate Committee, it was granted reconsideration in April 1997.

Finally, California introduced a bill in the 1997-1998 Regular Session, which provides that 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, shall be punished by a criminal fine.⁹⁰ The bill would also make such a violation an act of unprofessional conduct under the Medical Practice Act and require the revocation of the local business license of any business violating this provision. The bill has been read a second time, amended, and re-referred to the Committee on Appropriations.

3. Connecticut

The Connecticut House introduced a bill in 1998 that would ban the cloning of human beings in an effort to address the threat to human dignity posed by genetic engineering.⁹¹ The bill would prohibit a person from intentionally growing or creating a human being by replacing the nucleus of a human oocyte cell with the nucleus of a differentiated somatic cell of any person for implantation and gestation of the resultant embryo. The prohibition against cloning a human being would not include: (1) research for the purposes of scientific investigation of disease or cure of disease or illness provided that such research does not result in the cloning of a human; or (2) *in vitro* fertilization. A person whose gamete material is used without such person's knowledge for the purpose of human cloning in violation of this bill could bring a civil action and recover treble damages, punitive damages, court costs, and reasonable attorney fees. Additionally, a person who was conceived by cloning in violation of the bill could take the same legal action. Finally, a commission could revoke the license or permit of a practitioner who violates the bill. The bill has been referred to the Committee on Judiciary.

4. Delaware

The Delaware Senate introduced a bill that would create a ban on human cloning using the somatic cell nuclear transfer technique.⁹² The bill includes a sunset clause that would terminate the ban on January 1, 2003, unless reauthorized. The bill would allow biomedical and agricultural research,

89. S.J. Res. 14, 1st Reg. Sess. (Cal. 1997).

90. A.B. 1251, 1st Reg. Sess. (Cal. 1997).

91. H.R. 5475, 1st Reg. Sess. (Conn. 1998).

92. S. 241, 139th Gen. Assembly, 2d Reg. Sess. (Del. 1998).

including, but not limited to, the use of somatic cell nuclear transfer or other cloning technologies to clone molecules, DNA, cells, and tissues or to develop animals. The penalty for an intentional violation of these provisions would be a fine of the greater of \$250,000 or two times the gross gain or loss from the offense. The bill has moved to the Senate Committee on Executive.

5. Florida

The Florida House introduced a bill in March 1997 that would prohibit the cloning of human DNA. As of June 1997, the bill remained at its second reading.⁹³ A revised draft of the Florida bill defines cloning as "creating a new individual by using the complete nuclear genetic material of an existing human being to create a second genetic duplicate of that human being."⁹⁴ The Florida bill would make cloning a first degree felony. However, the Florida bill has been withdrawn from further consideration.

6. Georgia

The Georgia House introduced a bill to prohibit any person from cloning or attempting to clone a human being.⁹⁵ A violation of these provisions would constitute a felony with up to two years imprisonment for the first offense, and between two and ten years for any subsequent offense. The Georgia bill has moved to the House Committee on Health and Ecology.

7. Hawaii

The Hawaii House introduced a bill in 1998 that would prohibit any person, whether in a research or clinical setting, from attempting to create a human being through somatic cell nuclear transfer.⁹⁶ The bill would also prohibit any person, whether in a research or clinical setting, from attempting to implant an embryo created by somatic cell nuclear transfer into the body of a woman. The bill would allow exceptions for cloning DNA sequences, cell lines, and non-human animals using somatic cell nuclear transfer. A violation would constitute a Class C felony.

93. H.R. 1237, 1st Reg. Sess. (Fla. 1997).

94. *Id.*

95. H.R. 1508, 144th Gen. Assembly, 1st Reg. Sess. (Ga. 1997).

96. H.R. 3206, 19th Leg., 1st Reg. Sess. (Haw. 1998).

8. Illinois

The Illinois House introduced two bills in March 1997 titled the Human Cloning Prohibition Act.⁹⁷ The House bills would prohibit human cloning and forbid the use of public funds and/or property for human cloning. The proposed Illinois legislation would make an intentional violation a Class Four felony. The House bills have been re-referred to the House Committee on Rules.

The Illinois Senate also introduced two bills in the 1997-1998 Regular Session titled the Human Cloning Prohibition Act.⁹⁸ The Senate bills would prohibit the cloning of human beings. The first bill would make an intentional violation of the provisions a Class Three felony. The first bill would also amend the State Finance Act to provide that any appropriation act shall not be construed to authorize the expenditure of public funds for human cloning or for the support of any project or institution that engages in human cloning. Finally, the first bill would amend the Unified Code of Corrections to make a person who intentionally violates the provisions ineligible for parole. This bill was tabled by its sponsor. The second bill would prohibit a person from purchasing or selling an ovum, zygote, embryo, or fetus for the purpose of cloning a human being. Under this bill, various licenses could be revoked for the violation of its provisions. Also, it would forbid a person from engaging in an activity that involves the use of a human somatic cell for the process of producing a human clone, and violations would constitute a Class Four felony. The bill has been re-referred to the Senate Committee on Rules.

9. Indiana

In 1998, the Indiana Senate introduced two bills addressing human cloning.⁹⁹ The first bill defines cloning as the growing or creating of a human being from a single cell or cells of a genetically identical human being through asexual reproduction. The bill specifically states that the term "cloning" does not apply to techniques of assisted reproductive technology. The bill would prohibit the State Department of Health from using public money, or allowing employees or facilities to be used to participate in or support research relating to human cloning. This bill has moved to the House Committee on Public Health. The second Indiana Senate bill is similar to the first and would exclude

97. H.R. 1829, 90th Gen. Assembly, 1st Reg. Sess. (Ill. 1997); H.R. 2235, 90th Gen. Assembly, 1st Reg. Sess. (Ill. 1997).

98. S. 1230, 90th Gen. Assembly, 1st Reg. Sess. (Ill. 1997); S. 1243, 90th Gen. Assembly, 1st Reg. Sess. (Ill. 1997).

99. S. 411, 110th Gen. Assembly, 2d Reg. Sess. (Ind. 1998).

biomedical research to develop cells, tissues, and organs that does not involve growing or creating an entire human being using cloning technology.¹⁰⁰

The Indiana House also introduced a bill in 1998 defining cloning in the same terms as the Senate bills and noting the same exclusion of assisted reproductive technologies from the definition of cloning.¹⁰¹ The House bill would prohibit state officials, administrative agencies, and local governmental bodies from using county, state, or federal funds for research regarding or an activity facilitating the cloning or attempted cloning of a human being.

10. Kansas

In 1998, the Kansas House introduced a bill related to human cloning.¹⁰² The bill would make it unlawful to perform research with a human somatic cell for purposes of human cloning. The bill would also make it unlawful to use a human somatic cell in the process of creating human clones. A violation of the bill would constitute a person felony, severity level 5. The bill has moved to the House Committee on the Judiciary.

11. Maryland

The Maryland House introduced a bill in March 1997 to ban state funding of human cloning and human cloning research.¹⁰³ The 1997 bill was not carried over when the Regular Session adjourned.

Maryland introduced two bills regarding human cloning in 1998. The first bill would prohibit state funding for human cloning.¹⁰⁴ The second bill would ban state funding of cloning and cloning research that would replicate a human being.¹⁰⁵ Both bills have been moved to the House Committee on Environmental Matters.

12. Michigan

The Michigan House introduced bills in May and June 1997 to prohibit human cloning.¹⁰⁶ The Michigan bills would provide criminal penalties for

100. S. 212, 110th Gen. Assembly, 2d Reg. Sess. (Ind. 1998).

101. H.R. 1408, 110th Gen. Assembly, 2d Reg. Sess. (Ind. 1998).

102. H.R. 2846, 77th Leg., 1st Reg. Sess. (Kan. 1998).

103. H.J. Res. 28, 1st Reg. Sess. (Md. 1997).

104. H.R. 932, 1st Reg. Sess. (Md. 1998).

105. H.J. Res. 1-1, 1st Reg. Sess. (Md. 1998).

106. H.R. 4846, 89th Leg., 1st Reg. Sess. (Mich. 1997); H.R. 4962, 89th Leg., 1st Reg. Sess. (Mich. 1997).

violations. The bills were read for a third time in the House, have passed in the House, and have now moved to the Senate for concurrence.

The Michigan House introduced a bill in 1998.¹⁰⁷ This bill would prohibit the use of state funds for cloning a human being or for conducting research on the cloning of human beings. This bill has also been read for a third time, passed in the Senate, and has moved to the House for concurrence. The Michigan Senate introduced a bill in 1998.¹⁰⁸ This bill would prohibit human cloning for a period of five years. It would also provide both civil and criminal penalties for any violations. This bill has moved to the House Committee on Health Policy. The Michigan House also introduced a resolution in 1998 requesting the Congress of the United States to enact legislation prohibiting the cloning of human beings.¹⁰⁹ It has moved to the Senate Committee on Health Policy and Senior Citizens. Finally, the Michigan House introduced a resolution in 1998 that entreats the Congress of the United States to enact legislation to prohibit the cloning of human beings.¹¹⁰ It has passed in the House.

13. Minnesota

In 1998, the Minnesota House introduced a bill addressing human cloning issues. The first section would make it unlawful for any person to engage in human cloning.¹¹¹ The penalty for such a violation would constitute a felony. The second section of the bill would make it unlawful to purchase or sell an ovum, zygote, embryo, or fetus for the purpose of human cloning. The penalty for a violation of the second section would constitute a gross misdemeanor. The bill also provides that human cloning would not include assisted reproductive technologies, as long as the pregnancy is not intended to result in a child who is genetically identical to another human being or results in two or more natural identical twins. The bill would also allow a health-related licensing board to revoke the license of a regulated person who violates the provisions. It has moved to the House Committee on Health and Human Services Finance Division. Also, the Minnesota Senate introduced a bill in 1998 with the same provisions as the House bill.¹¹² This bill has been withdrawn from the Senate Committee on Health and Family Security.

107. H.R. 5475, 89th Leg., 1st Reg. Sess. (Mich. 1998).

108. S. 864, 89th Leg., 1st Reg. Sess. (Mich. 1998).

109. H.C. Res. 80, 89th Leg., 1st Reg. Sess. (Mich. 1998).

110. H.R. 197, 89th Leg., 1st Reg. Sess. (Mich. 1998).

111. H.R. 2730, 80th Reg. Sess. (Minn. 1998).

112. S. 2423, 80th Reg. Sess. (Minn. 1998).

14. Missouri

The Missouri House introduced a bill in March 1997 to prohibit funding of human cloning research.¹¹³ The Missouri bill was not carried over when the Regular Session adjourned.

15. Mississippi

The Mississippi House introduced a bill in 1998 to prohibit cloning and conspiracies to clone a human being.¹¹⁴ The bill would also prohibit the purchase or sale of an ovum, zygote, embryo, or fetus for the purpose of such cloning. The bill would provide both civil and criminal penalties for violations of the provisions. The Mississippi bill died in committee.

16. New Hampshire

The New Hampshire House introduced a bill in 1998 which would establish a five-year moratorium on the cloning of an entire human being in order to evaluate the medical, ethical, and social implications raised by cloning.¹¹⁵ The bill would also establish a commission to study the issues and report to the legislature and the governor. The bill has moved to the Senate Committee on Public Institutions.

17. New Jersey

In March 1997, the New Jersey Assembly introduced a bill that would make the cloning of a human being a first degree crime.¹¹⁶ A violation of the New Jersey bill would result in a fine of \$100,000 to \$200,000 or a prison term of ten to twenty years, or both.¹¹⁷ The New Jersey bill would also provide that an individual's genetic information is the property of that individual. The New Jersey cloning bill has moved to the Assembly Committee on Health.

The New Jersey Assembly introduced a bill in 1998 that would make the cloning of a human being a crime of the first degree.¹¹⁸ The bill would also provide that an individual's genetic information is the property of the individual. This New Jersey bill has moved to the Assembly Committee on Health.

113. H.R. 824, 89th Gen. Assembly, 1st Reg. Sess. (Mo. 1997).

114. H.R. 996, 1st Reg. Sess. (Miss. 1998).

115. H.R. 1658, 155th Reg. Sess. (N.H. 1998).

116. A.B. 2849, 207th Leg., 1st Reg. Sess. (N.J. 1997).

117. *Id.*

118. A.B. 329, 208th Leg., 1st Reg. Sess. (N.J. 1998).

18. New York

In February and March 1997, Senator John Marchi introduced two complex and detailed bills.¹¹⁹ The New York bills define cloning as the growing or creating of a human from a single cell of a genetically identical being by means of asexual reproduction.¹²⁰ The New York bills would prohibit anyone from extracting the nucleus from an unfertilized human egg and implanting DNA from another cell into the egg. Additionally, the bills would give the New York State Department of Health regulatory authority over animal cloning research.¹²¹ The New York bills would create a new crime of "cloning of a human being." The new crime would be a Class D felony. The Assembly bill has been recommitted to the Assembly Committee on Codes. The Senate bill has moved from the Senate Committee on Health. The New York Senate introduced another bill which would create a Temporary State Commission on Cloning and Genetic Engineering.¹²² This New York bill has moved to the Senate Committee on Rules.

In 1998, the New York Assembly introduced two bills regarding human cloning. The first Assembly bill would prohibit a person from cloning a human being and from purchasing or selling an ovum, zygote, embryo, or fetus for the purpose of cloning a human being.¹²³ This bill would also establish civil penalties for violation of the provisions. The second Assembly bill would prohibit human cloning and the use of public funds, resources, property, employees, or those of political subdivisions or public corporations for the purpose of human cloning.¹²⁴ A violation of this bill would constitute a felony and provide grounds for license revocation. Both bills have moved to the Assembly Committee on Health.

The New York Senate introduced three bills in 1998. The first bill would prohibit a person from cloning a human being and from purchasing or selling an ovum, zygote, embryo, or fetus for the purpose of cloning a human being.¹²⁵ This bill would also establish civil penalties for violation of its provisions. This Senate bill has moved out of the Senate Committee on Health. The second Senate bill is titled the Cloning Prohibition and Research Protection Act. It would prohibit the cloning of human beings while permitting scientific

119. S. 2877, 220th Leg., 1st Reg. Sess. (N.Y. 1997); A.B. 5383, 220th Leg., 1st Reg. Sess. (N.Y. 1997).

120. Butler & Wadman, *supra* note 9, at 9.

121. *Id.*

122. S. 5503, 221st Leg., 1st Reg. Sess. (N.Y. 1997).

123. A.B. 9116, 221st Leg., 1st Reg. Sess. (N.Y. 1998).

124. A.B. 9183, 221st Leg., 1st Reg. Sess. (N.Y. 1998).

125. S. 5993, 221st Leg., 1st Reg. Sess. (N.Y. 1998).

research and experimentation, including, but not limited to, the use of somatic cell nuclear transfer and other cloning technologies to clone molecules, DNA, cells, and tissues, and to develop non-human animals.¹²⁶ The penalty for a violation of this bill would be a civil fine of \$250,000. This bill has been read twice, amended, ordered reprinted, and recommitted to the Committee on Health. The third Senate bill would create a temporary state commission on cloning and genetic engineering to examine and make responses to the scientific, technological, moral, and ethical issues raised by human cloning research and development.¹²⁷ The purpose of the commission would be to study such issues and advise the governor and the legislature of its findings, including the possible scientific and medical benefits of human cloning research, the feasibility of human cloning, and the possible scientific and medical circumstances under which human cloning should or should not be sanctioned. This bill has been read twice, ordered printed, and will be committed to the Committee on Rules.

19. North Carolina

In April 1997, a bill was introduced in North Carolina that would ban human cloning and make it a felony to create another human being by cloning or to conspire to do so.¹²⁸ The North Carolina bill was not carried over when the Regular Session adjourned.

20. Ohio

Two bills addressing human cloning were introduced in Ohio in 1998. The Ohio House introduced a bill to prohibit the cloning of human beings.¹²⁹ The bill would establish the Human Cloning Advisory Council. The Ohio House bill has moved to the House Committee on Health, Retirement and Aging. The Ohio Senate introduced a bill to prohibit the cloning of human beings,¹³⁰ and it has moved to the Senate Committee on the Judiciary.

21. Pennsylvania

In 1998, two human cloning bills were introduced in Pennsylvania. The Pennsylvania House introduced a bill that would impose a ban on the cloning of human beings and penalize violators.¹³¹ This bill has moved to the House Committee on the Judiciary. The Pennsylvania Senate introduced a bill that

126. S. 6071, 221st Leg., 1st Reg. Sess. (N.Y. 1998).

127. S. 5503, 221st Leg., 1st Reg. Sess. (N.Y. 1998).

128. S. 782, 1st Reg. Sess. (N.C. 1997).

129. H.R. 675, 122nd Gen. Assembly, 1st Reg. Sess. (Ohio 1998).

130. S. 218, 122nd Gen. Assembly, 1st Reg. Sess. (Ohio 1998).

131. H.R. 2128, 182nd Gen. Assembly, 1st Reg. Sess. (Pa. 1998).

would establish a moratorium on the cloning of human beings.¹³² The bill would also prohibit the use of state funds for cloning human beings, require the Department of Health to conduct a study, and impose penalties for violations of the act. The Pennsylvania Senate bill has moved to the Senate Committee on Public Health and Welfare.

22. Rhode Island

The Rhode Island House introduced a bill in 1998 to prohibit the cloning of human beings through somatic cell nuclear transfer.¹³³ The bill would not ban the cloning of human cells, genes, tissues, or organs intended for biomedical, microbiological, and agricultural research that would not result in the replication of an entire human being. The bill would also exclude assisted reproductive techniques, so long as the procedures are not specifically intended to result in the gestation or birth of a child who is genetically identical to another conceptus, embryo, fetus, or human being, living or dead. A violation of these provisions by a corporation, firm, clinic, hospital, laboratory, or research facility would result in a civil penalty of the greater of: (1) not more than \$1,000,000; or (2) not more than an amount equal to double any gross pecuniary gain. A violation by an individual would result in the civil penalty of the greater of: (1) not more than \$250,000; or (2) not more than an amount equal to double any gross pecuniary gain. The prohibitions in the Rhode Island bill would expire five years after its enactment. This bill has been referred to the Senate Committee on Health, Education, and Welfare.

23. South Carolina

In South Carolina, a bill was introduced in March 1997 addressing human cloning.¹³⁴ The bill would make it unlawful for any individual to grow or create another human being or to conspire to do so using the cloning technique. The bill would also provide penalties for violating the provisions. The South Carolina bill was passed in the House and has moved to the Senate.

24. Tennessee

In 1998, four bills were introduced in Tennessee that address human cloning. The first House bill would prohibit the cloning of human beings.¹³⁵ The second House bill would make the cloning of human beings a felony

132. S. 1285, 182nd Gen. Assembly, 1st Reg. Sess. (Pa. 1998).

133. H.R. 7123, 1st Reg. Sess. (R.I. 1998).

134. H.R. 3617, 112th Gen. Assembly, 1st Reg. Sess. (S.C. 1997).

135. H.R. 2198, 100th Gen. Assembly, 1st Reg. Sess. (Tenn. 1998).

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offense.¹³⁶ Both House bills have moved to the House Committee on Health and Human Resources. The Tennessee Senate introduced a bill that would prohibit the cloning of human beings.¹³⁷ Another Senate bill would make the cloning of human beings a felony offense.¹³⁸ Both Senate bills have moved to the Senate Committee on the Judiciary.

25. Utah

The Utah Senate introduced a joint resolution that would direct the Legislative Management Committee to study the prohibition of human cloning.¹³⁹ The resolution would require the committee to produce a report to the Fifty-third Legislature in the 1999 Annual General Session regarding the prohibition of human cloning.

26. Virginia

The Virginia House introduced a bill in 1998 that would prohibit human cloning.¹⁴⁰ The bill would penalize violators by imposing a fine of up to \$50,000. The bill has moved to the House Committee on Health, Welfare, and Institutions.

27. West Virginia

The West Virginia Senate introduced a bill in March 1997 that would prohibit human cloning¹⁴¹ and provide penalties for violations. The bill was not carried over to the 1998 Regular Session.

28. Wisconsin

The Wisconsin Assembly introduced a bill in 1998 that would prohibit any person from cloning a human being or from selling or purchasing an ovum, zygote, embryo, or fetus for the purpose of cloning a human being.¹⁴² A violation by an individual would result in a penalty of not less than \$25,000 and not more than the greater of \$250,000, or double any monetary gain derived from the violation. A violation by a non-individual (such as a corporation) would result in a penalty of not less than \$100,000 nor more than the greater of

136. H.R. 2281, 100th Gen. Assembly, 1st Reg. Sess. (Tenn. 1998).

137. S. 2208, 100th Gen. Assembly, 1st Reg. Sess. (Tenn. 1998).

138. S. 2295, 100th Gen. Assembly, 1st Reg. Sess. (Tenn. 1998).

139. S.J. Res. 16, 52d Leg., 1st Reg. Sess. (Utah 1998).

140. H.R. 752, 1st Reg. Sess. (Va. 1998).

141. S. 410, 73rd Leg., 1st Reg. Sess. (W.Va. 1997).

142. A.B. 769, 93rd Reg. Sess. (Wis. 1998).

\$1,000,000, or double any monetary gain. The bill failed to pass pursuant to the Senate Joint Resolution 1.

C. *The International Level*

One of the NBAC's policy options is cooperation among nations to enforce common policies regarding the prohibition of human cloning.¹⁴³ The NBAC suggests that countries agree to enforce each other's prohibitory legislation.¹⁴⁴ For example, the United States could recognize the current international proposals.¹⁴⁵ The Council for Responsible Genetics has called for a worldwide ban on human cloning, in addition to increased public discussion about biotechnology.¹⁴⁶ UNESCO and the Human Genome Organization (HUGO), two international ethics committees, are also involved in exploring the ethical and legal implications of human cloning.¹⁴⁷ Both organizations are committed to protecting human rights and dignity.¹⁴⁸ UNESCO particularly is dedicated to preserving human rights based upon international agreements.¹⁴⁹

Many individuals have advised that international guidelines should be enacted. Ian Wilmut, a scientist at the Roslin Institute in Edinburgh, Scotland, has recommended international guidelines regarding human cloning.¹⁵⁰ Having informed the U.S. Senate Committee of Public Health and Safety that human cloning can and should be controlled, Wilmut specifically endorsed an international ban on human cloning.¹⁵¹ Wilmut and other scientists agree that while animal cloning has numerous potential benefits, such as new medicines or new disease treatments,¹⁵² human cloning research is unethical.¹⁵³ Some claim that halting human cloning research is the sole means of supporting an international prohibition of human cloning.¹⁵⁴

143. NBAC REPORT, *supra* note 2, at 102-03.

144. *Id.*

145. *Id.*

146. Council for Responsible Genetics, *Position Statement on Cloning* (visited June 4, 1998) <<http://www.essential.org/crg/cloning.html>>.

147. NBAC REPORT, *supra* note 2, at 102-03.

148. *Id.*

149. *Id.*

150. *Scientist Who Cloned Sheep*, *supra* note 7.

151. *Id.* Others at the Roslin Institute agree with Wilmut. Aside from believing it to be unethical, the scientists also believe that the sheep cloning technique would not be clinically useful if applied to humans. K.H.S. Campbell et al., *Implications of Cloning*, 380 NATURE 383 (1996).

152. See sources cited *supra* note 10.

153. See Campbell et al., *supra* note 151.

154. See Editorial, *supra* note 15 (advocating stopping any research aimed at cloning humans but recognizing that research involving farm-animal breeding and medicine is acceptable).

Following President Clinton's instructions to the NBAC, several other countries asked commissions to review issues relating to human cloning. On January 12, 1998,¹⁵⁵ nineteen countries signed the Council of Europe Protocol¹⁵⁶ which prohibits the cloning of human beings.¹⁵⁷ The forty member countries of the Council of Europe, plus Australia, Canada, the United States, Japan, Holy Sea, and the European Community, were invited to sign the Protocol. This document is the first binding international treaty on human cloning. The Protocol prohibits "any intervention seeking to create a human being genetically identical to another human being, whether living or dead," without exception.¹⁵⁸ In developing the Protocol, the Council of Europe considered the "serious difficulties of a medical, psychological, and social nature that such a deliberate biomedical practice might imply for all the individuals involved."¹⁵⁹ The Protocol took effect May 1, 1998.

Jacques Chirac, the President of France, Jacques Santer, the President of the European Commission, and Federico Mayor, the Director General of UNESCO, had all previously asked their own bioethics advisory committees to make recommendations on human cloning.¹⁶⁰ Santer had informed the chair of the Group of Advisors on the Ethical Implications of Biotechnology (GAEIB) that the commission would adhere to the GAEIB's recommendations on both animal and human cloning.¹⁶¹ The GAEIB submitted its advice to the

155. On the same day that the Protocol was signed, French President Jacques Chirac opened the European Conference of National Ethics Committees, which will focus on ethical aspects of health choices. Christiane Dennemeyer, *Opening for Signature of the Council of Europe Protocol Banning Cloning of Human Beings*, Council of Europe Press Service (Jan. 7, 1998) <[http://www.coe.fr/cp/98/3a\(98\).htm](http://www.coe.fr/cp/98/3a(98).htm)>.

156. The Council of Europe Protocol is distinct from the Additional Protocol to the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine, on the Prohibition of Cloning Human Beings, ETS NO. 168 (Jan. 12, 1998) <<http://www.coe.fr/eng/legalxt/168e.htm>> [hereinafter Council of Europe, *Additional Protocol*].

157. Christiane Dennemeyer, *Europe Takes a Stand Against Human Cloning*, Council of Europe Press Service (Jan. 12, 1998) <[http://www.coe.fr/cp/98/6a\(98\).htm](http://www.coe.fr/cp/98/6a(98).htm)>. The Council of Europe was founded in 1949 and is the oldest European Organization. The nineteen signing countries were: Denmark, Estonia, Finland, France, Greece, Iceland, Italy, Latvia, Luxembourg, Moldova, Norway, Portugal, Romania, San Marino, Slovenia, Spain, Sweden, "the Former Yugoslav Republic of Macedonia," and Turkey. *See id.*

158. Council of Europe, *Additional Protocol*, *supra* note 156.

159. *Id.*

160. Butler & Wadman, *supra* note 9, at 8. *See also* Adam Michael, *Europe/Japan Face up to Legal Hurdles to Cloning*, 15 NATURE BIOTECH. 609, 609-10 (1997) (discussing the GAEIB report and its consequences).

161. Michael, *supra* note 160, at 610.

European Commission on May 30, 1997.¹⁶² The GAEIB suggested to the European Commission that reproductive human cloning by nuclear transfer should be banned, but that the cloning of human parts for organ and skin replacement should remain legal.¹⁶³ At that time, it remained unclear how the human cloning legislation in Europe would be shaped.¹⁶⁴

Other countries are also considering the human cloning issue. In China, scientist delegates at the annual meeting of China's parliament agreed that new legislation was necessary to ban human cloning.¹⁶⁵ Additionally, two Japanese groups, the Committee for Basic Plans for Life Sciences and the Committee for Life Sciences, plan to present the Japanese government with a report and recommendations.¹⁶⁶ Kanji Fujiki, the Director of the Life Sciences Division of the Science and Technology Agency in Tokyo, believes that the two Japanese committees will make reports and recommendations similar to those produced in both Europe and the United States.¹⁶⁷ Because Japan does not have any embryology legislation, Fujiki thinks it will be difficult to implement a human cloning ban into legislation.¹⁶⁸

In addition to the Council of Europe Protocol, some signatories had previously enacted human cloning legislation. Denmark and Spain have legislation against the cloning of humans.¹⁶⁹ The Danish law forbids experiments "whose purpose is to enable the production of genetically equal human beings."¹⁷⁰ The law in Spain includes "creating human beings by cloning or other procedures directed to selection of traits; creating human beings

162. *Id.* at 609 (noting that the GAEIB reported that legislation will be difficult to draw up and must distinguish animal from human and reproductive from nonreproductive without merely banning nuclear transfer or cloning). See also Advisers to the President of the European Commission on the Ethical Implications of Biotechnology, *Ethical Aspects of Cloning*, 23 J. MED. ETHICS 349 (1997).

163. Michael, *supra* note 160, at 609. Note that the GAEIB also advised the European Commission that all animal cloning should be allowed so long as it does not harm the animal's welfare. See also Declan Butler, *European Ethics Advisers Back Cloning Ban*, 387 NATURE 536, 536 (1997) (discussing the GAEIB's report).

164. Michael, *supra* note 160, at 610.

165. See Nigel Williams, *Cloning Sparks Calls for New Laws*, 275 SCI. 1415 (1997).

166. Michael, *supra* note 160, at 609.

167. *Id.* at 610.

168. *Id.*

169. See Editorial, *supra* note 15.

170. See Andrea L. Bonnicksen, *Ethical and Policy Issues in Human Embryo Twinning*, 4 CAMBRIDGE Q. HEALTHCARE ETHICS 274 (1995).

by cloning in any of its variants, or any other procedure capable of yielding several identical human beings . . .” under the category of “very serious offenses.”¹⁷¹ France has vowed to enact legislation against human cloning if someone attempts a “monstrous” experiment.¹⁷²

Germany has also attempted to address the human cloning issue. Human cloning is purportedly prohibited under Germany’s 1990 Embryo Protection Act.¹⁷³ While some argue that this law is broad enough to include a prohibition on the cloning of human beings,¹⁷⁴ others believe that Germany’s current law on human experimentation may contain a loophole that permits human cloning.¹⁷⁵ Ernst Benda, a former President of the German Constitutional Court, has disapproved of UNESCO’s draft convention on bioethics for its failure to explicitly prohibit the cloning of human beings.¹⁷⁶

Britain’s Human Fertilization and Embryology Act of 1990 states that an embryo cannot be created outside of the human body without authorization.¹⁷⁷ According to David Shapiro of the Nuffield Council on Bioethics, the 1990 Act provides a legal framework to forbid human application of the technology used to clone Dolly.¹⁷⁸ Conversely, others think that the 1990 Act may contain loopholes and allow human cloning.¹⁷⁹ The British House of Commons Select Committee on Science and Technology has decided to convene and discuss whether the current British legislation includes loopholes that might actually permit human cloning.¹⁸⁰ Although the 1990 legislation prohibited the transplant of nuclei into embryos, it may not explicitly forbid the transfer of nuclei into eggs, which is somatic cell nuclear transfer.¹⁸¹ British law may

171. *Id.*

172. See Editorial, *supra* note 15.

173. Declan Butler & Meredith Wadman, *Putting a Lid on Pandora’s Box of Genetics*, 386 NATURE 9, 9 (1997).

174. See Editorial, *supra* note 15. *But see infra* note 175.

175. See Williams, *supra* note 165, at 1415.

176. See Butler & Wadman, *supra* note 173, at 9.

177. See Ehsan Masood, *Cloning Technique ‘Reveals Legal Loophole,’* 385 NATURE 757, 757 (1997). Note that Baroness Mary Warnock, chair of the government’s advisory committee on human fertilization and embryology, stated that the act only included research current at that time, and that the act probably should be amended to ban human cloning. See *id.*

178. See Jacqui Wise, *Sheep Cloned from Mammary Gland Cells*, 314 BMJ 623 (1997). See also Editorial, *supra* note 15 (stating that the UK has a law against cloning humans). See, e.g., Owen Dyer, *Sheep Cloned by Nuclear Transfer*, 314 BMJ 623 (1997). *But see infra* notes 180-81 and accompanying text (discussing the possibility of a loophole in the 1990 law).

179. See *infra* notes 180-82 and accompanying text.

180. See Butler and Wadman, *supra* note 173, at 9. See also Masood, *supra* note 177 (noting that some believe the Human Fertilization and Embryology Act of 1990, which was intended to ban human cloning, may not include the technique used to clone Dolly).

181. Williams, *supra* note 165.

need to specifically state that such experimental cloning on humans is prohibited in order to close any loopholes.¹⁸²

III. CLONING-RELATED CONSTITUTIONAL CHALLENGES

Any legislation enacted in the United States must pass constitutional challenge. Finding clear guidance from the United States Constitution or judicial interpretations about whether human cloning restrictions are constitutional is extremely difficult. In the cloning discussion, the main constitutional issue is whether the concept of procreative liberty is contained within the right of privacy. Furthermore, other "constitutional values," such as the protection of the freedom of scientific inquiry and the potential right to one's own uniqueness and individuality, may deserve consideration.

In the United States, there is a "presumption in favor of individual freedom of action"¹⁸³ Absent specific prohibitions, people have the freedom and liberty to act as they wish; however, this freedom is constrained "to ensure the good order of society."¹⁸⁴ At the same time, certain fundamental rights are carefully protected under the Constitution.¹⁸⁵ Fundamental rights are those rights "so deeply rooted in our culture and history . . . [that they] are necessary to a system of ordered liberty."¹⁸⁶ Our fundamental rights include the right to vote, the right to travel, and the right of privacy. Various privacy rights, including marriage, sexual relations, abortion, and childrearing are also deemed fundamental. The standard that courts use to review the legitimacy of governmental acts that restrict or impinge upon fundamental rights is strict scrutiny. Under the strict scrutiny standard, any government action restricting such fundamental rights must be necessary to protect a compelling governmental interest, and the means must be narrowly tailored to achieve that end; thus, there must be no less restrictive means to achieve the governmental goal. Therefore, it must be decided whether the rights involved with the cloning of humans are fundamental and whether governmental action to restrict human cloning is necessary to protect a compelling governmental interest. An individual's choice to reproduce using a cloning technique or a scientist's choice

182. *Id.*

183. NBAC REPORT, *supra* note 2, at 92.

184. *Id.*

185. Other ordinary individual liberties can be limited if the government has a rational reason to do so. The more important the liberty at stake, the stronger the reasons must be for its limitation or restriction.

186. NBAC REPORT, *supra* note 2, at 94. See *Palko v. Connecticut*, 302 U.S. 319, 325-26 (1937); *Moore v. City of East Cleveland*, 431 U.S. 494, 503 (1977).

to continue with cloning research may be constitutionally restricted based upon the potential harms associated with the cloning of human beings that would rise to the level of a compelling government interest.

A. Reproductive Liberty

Human cloning technology may eventually be used to assist in bringing children into the world. Whether to interpret the Constitution to provide protection for a right to create children through the cloning process involves a debate about the scope and meaning of procreative liberty.¹⁸⁷ Certain aspects of childbearing do fall within the penumbra of privacy rights embedded in the Constitution.¹⁸⁸ A broad view of the constitutionally protected rights related to reproduction is that an individual possesses the "right to submit to a medical procedure that may bring about . . . pregnancy."¹⁸⁹ Furthermore, the Fourteenth Amendment protects "freedom of personal choice in matters of marriage and family."¹⁹⁰

On the one hand, proponents of human cloning argue that access to cloning should be protected by individuals' "legal right to reproductive freedom."¹⁹¹ The concept of reproductive freedom is the idea "that we have a right to reproduce the way we choose . . ." ¹⁹² Reproductive freedom protects one's bodily integrity from direct governmental interference so that the law does "not unduly burden women's choices."¹⁹³ These proponents suggest that "[c]loning opponents need to come up with a 'compelling reason to overcome that right' [to reproductive freedom]."¹⁹⁴ Commentators such as John Robertson and Ruth Macklin suggest that "a commitment to individual liberty requires that individuals be left free to create children using somatic cell nuclear transfer if

187. NBAC REPORT, *supra* note 2, at 95.

188. *Griswold v. Connecticut*, 381 U.S. 479 (1965); *Eisenstadt v. Baird*, 405 U.S. 438 (1972); *Planned Parenthood v. Casey*, 505 U.S. 833 (1992). See *Cleveland Bd. of Educ. v. LaFleur*, 414 U.S. 632, 639-40 (1974) (stating that "[f]reedom of personal choice in matters of marriage and family life is one of the liberties protected by the Due Process Clause of the Fourteenth Amendment"). See generally Debra Feuerberg Duffy, *To Be or not to Be: The Legal Ramifications of the Cloning of Human Embryos*, 21 RUTGERS COMPUTER & TECH. L.J. 189, 194-95 (1995).

189. *Lifchez v. Hartigan*, 735 F. Supp. 1361, 1377 (N.D. Ill.), *aff'd without opinion, sub nom.*, *Scholberg v. Lifchez*, 914 F.2d 260 (7th Cir. 1990), *cert. denied*, 498 U.S. 1068 (1991).

190. John A. Robertson, *Embryos, Families, and Procreative Liberty: The Legal Structure of the New Reproduction*, 59 S. CAL. L. REV. 939, 958 (1986) (citing *Cleveland Bd. of Educ. v. LaFleur*, 414 U.S. 632, 639-40 (1973)).

191. Dan W. Brock, *Cloning Human Beings*, MED. ETHICS NEWSL. (Lahey Hitchcock Clinic, Burlington, Mass.), Fall 1997, at 1.

192. Susan Cohen, *What Is a Baby? Inside America's Unresolved Debate About the Ethics of Cloning*, WASH. POST, Oct. 12, 1997, (Magazine), at W12.

193. NBAC REPORT, *supra* note 2, at 95.

194. See Cohen, *supra* note 192, at W25.

they so choose”¹⁹⁵ Robertson has stated that “[a]s long as the interests of couples and offspring are well served [by human cloning], there will be no need for governmental restrictions on the decisions made by medical professionals and their patients.”¹⁹⁶

Other types of assisted reproductive technologies, such as *in vitro* fertilization (IVF), are currently practiced without constitutional challenges. Because IVF technology is widely available and legally permissible, one may argue that the implantation of an embryo created from somatic cell nuclear transfer should be permissible as well. Therefore, it must be determined whether procreation through cloning is distinguishable from currently allowed reproductive technologies. Proponents argue that the right to reproductive freedom includes access to new assisted reproductive technologies.¹⁹⁷ Testifying at the NBAC hearings, Robertson “unequivocally defended the right to reproductive liberty and argued that Dolly marked just one more perfectly acceptable step on a continuum of artificial reproduction methods that help infertile couples have children.”¹⁹⁸

On the other hand, opponents of human cloning believe governmental interference is reasonable and even necessary. They argue that “individuals [are not guaranteed] unfettered access to assisted reproductive technologies.”¹⁹⁹ Opponents accede that, in general, a couple’s reproductive choices are considered private affairs. However, the “ongoing controversies regarding the moral standing of human genetic material”²⁰⁰ have necessitated governmental intervention. When the government has compelling reasons to curtail individual liberty, society allows curtailment with minimal limitations. It is clear that “[g]overnment in our constitutional, democratic society has the authority and obligation to make and enforce reasonable regulations to manage the new reproductive market in order to protect the interests of the public, prospective parents, and their future children.”²⁰¹ Bonnie Steinbock claims that “[e]ven if the Supreme Court has held procreation, in some contexts, to be a fundamental liberty, it does not follow that it is protected in every context, nor

195. NBAC REPORT, *supra* note 2, at 76. See also Harris, *supra* note 6, at 358 (defending a conception of reproductive rights which shows human cloning to be not inconsistent with human rights and dignity).

196. Robertson, *supra* note 3, at 13. Note that Robertson made this statement prior to the development of somatic cell nuclear transfer.

197. Brock, *supra* note 191.

198. Cohen, *supra* note 192.

199. NBAC REPORT, *supra* note 2, at 95.

200. *Id.* at 4.

201. George J. Annas, *Regulatory Models for Human Embryo Cloning: The Free Market, Professional Guidelines, and Government Restrictions*, 4 KENNEDY INST. ETHICS J. 235 (1994).

that individuals have a constitutional right to procreate 'by any means necessary.'²⁰²

Opponents to human cloning also claim that previously acknowledged reproductive rights are significantly different from somatic cell nuclear transfer because these other rights involve embryos created from a male and a female. Traditional reproductive technologies have resulted from combining the genes of two genetic parents of a child and involve the "transmission of genes vertically across a generation."²⁰³ Although the new cloning technology has the ultimate effect of transmitting genes, the "child" produced will be genetically identical to a single "parent."

This essential difference has led some to question whether human cloning is even "procreation" at all. These critics view cloning as "an entirely new means of creating persons, more a means of manufacturing a person than reproducing."²⁰⁴ In this view, cloning correlates with "'replication' not 'reproduction,' and is not constitutionally protected."²⁰⁵ Steinbock argues that "[i]t is virtually inconceivable that the present Court—or any Court in the near future—would deem SCNT [somatic cell nuclear transfer] cloning to be a fundamental constitutional right."²⁰⁶ Steinbock bases her argument on the following facts: most Americans do not assume that cloning is a basic right; cloning is not part of our country's history and tradition; and access to cloning is not essential to ordered liberty.²⁰⁷

In sum, it is unclear whether the somatic cell nuclear transfer technique will be considered "procreation" akin to currently accepted reproductive techniques and the corresponding, recognized rights. According to the NBAC, past Supreme Court decisions have not yet decided this issue.²⁰⁸ If the right to create children using a cloning method is considered a fundamental right, any government regulation will need to satisfy the strict scrutiny standard, that is, the government must have a compelling interest and must choose narrowly tailored means to achieve the governmental purpose. The speculative and

202. Bonnie Steinbock, *The NBAC Report on Cloning Human Beings: What It Did—And Did Not—Do*, 38 JURIMETRICS 39, 46 (1997).

203. *Id.* at 45.

204. Brock, *supra* note 191.

205. See Steinbock, *supra* note 202, at 45.

206. *Id.* at 45-46.

207. *Id.* See generally *Bowers v. Hardwick*, 478 U.S. 186 (1986); *Moore v. City of East Cleveland*, 431 U.S. 494 (1977); *Palko v. Connecticut*, 302 U.S. 319 (1937).

208. NBAC REPORT, *supra* note 2, at 95 (stating that the decisions offer only partial guidance as to whether cloning is procreation or something entirely new).

potential psychological and social harms²⁰⁹ which could occur must be evaluated using the strict scrutiny standard. The main argument upon which the NBAC based its recommendation that the moratorium should continue was that the somatic cell nuclear transfer technique would not be safe to attempt on children.²¹⁰ The American Medical Association has stated that using nuclear transfer cloning to treat infertility is uncertain and unsafe.²¹¹ The NBAC report states that "the direct physical harms to the children who may result. . . is sufficient to justify a prohibition at this time, even if such efforts were to be characterized as the exercise of a fundamental right to procreate."²¹² Thus, the potential psychological and social harms thought to be associated with human cloning may be sufficiently compelling or legitimate to justify a prohibition.

B. Is There a Constitutionally Protected Freedom of Scientific Inquiry?

One of our "constitutional values"²¹³ is to promote the freedom of scientific inquiry. Our society has long valued and encouraged scientific research and advances.²¹⁴ Initially, we must determine whether this "scientific liberty" interest is a constitutionally protected right. Also, we must determine whether the government's interest is strong enough to withstand the test associated with the appropriate level of scrutiny.

Proponents of human cloning research claim that a "prohibition of somatic cell nuclear transfer with the wrong intent and its unavoidable chilling effect on research may infringe freedom of scientific inquiry. . . ."²¹⁵ Many scientific societies oppose a legal ban because they fear that an "ambiguous definition of cloning" could shut down a lot of uncontroversial, ongoing research.²¹⁶ They believe that anti-cloning laws could prohibit or stifle tremendous opportunities

209. See Stephen A. Newman, Essay, *Human Cloning and the Family: Reflections on Cloning Existing Children*, 13 N.Y.L. SCH. J. HUM. RTS. 523 (1997), for a discussion of some of the potential psychological and social harms involved in the cloning of existing children.

210. For a related discussion, see Melinda A. Roberts, *Human Cloning: A Case of No Harm Done?*, 21 J. MED. & PHIL. 537 (1996). Roberts challenges Robertson's argument that offspring from cloning are not harmed because they owe their very existence to the cloning procedure. Roberts argues that cloning does place human offspring of cloning at risk of genuine harm. *Id.*

211. Cohen, *supra* note 192, at W26. Researchers used 277 embryos before succeeding with Dolly. "This failure rate was unacceptable in humans, and the failures showed evidence of lethal malformations." *Id.*

212. NBAC REPORT, *supra* note 2, at 8-9.

213. See Shapiro, *supra* note 4.

214. NBAC REPORT, *supra* note 2, at 78-79. Discussing the "value of intellectual freedom," the NBAC cites to *Branzburg v. Hayes*, 408 U.S. 665, 705 (1972); *Meyer v. Nebraska*, 262 U.S. 390 (1923); and *Henley v. Wise*, 303 F. Supp 62 (N.D. Ind. 1969).

215. Susan M. Wolf, *Ban Cloning? Why NBAC Is Wrong*, 27 HASTINGS CTR. REP., Sept.-Oct. 1997, 12, 13.

216. Cohen, *supra* note 192, at W26.

that derive from the application of the cloning technique to animal biotechnology.²¹⁷

Conversely, because scientific developments and applications can have profound social implications, the freedom of scientific inquiry is not absolute.²¹⁸ Many governmental regulations²¹⁹ restrict types of scientific research based on moral constraints and safety concerns. Even if scientific inquiry were determined to be constitutionally protected, "the government could regulate to protect against compelling harms" ²²⁰ Robertson claims:

[I]f the government can show that restrictions on cloning and cloning technology are sufficiently important to the general well being of individuals or society, such restrictions are likely to be upheld as legitimate, constitutional governmental actions, even if scientists were held to have a First Amendment right of scientific inquiry.²²¹

A logical argument that would justify governmental restriction is that cloning is simply too harmful and morally distasteful.

Assuming a right to scientific inquiry exists, any restriction on cloning research must be narrowly drawn. The NBAC recommends that any "regulatory or legislative actions . . . should be carefully written so as not to interfere with other important areas of scientific research."²²² The Commission warns against regulating the cloning of human DNA sequences and cell lines because "neither activity raises the scientific and ethical issues that arise from"²²³ cloning human beings. The NBAC also suggests that the cloning of animals by the somatic cell nuclear transfer technique should continue subject to regulations requiring the humane treatment of animals.²²⁴

217. Grahame Bulfield, *Roslin Unfunded*, 386 NATURE 12 (1997). Such opportunities include the production of valuable human proteins in animals for medical purposes and maintaining the competitiveness of the animal breeding industry. *Id.* See also *Companies Team up to Make Cloned Cattle, Human Milk* (Reuters, Oct. 7, 1997) <http://www.nando.net/newsroom/ntn/health/100797/health2_18393_noframes.html>. See *supra* note 10.

218. NBAC REPORT, *supra* note 2, at 6.

219. See generally June Coleman, *Playing God or Playing Scientist: A Constitutional Analysis of Laws Banning Embryological Procedures*, 27 PAC. L.J. 1331 (1996).

220. *Id.*

221. NBAC REPORT, *supra* note 2, at 79 (citing John Robertson, *The Scientist's Right to Research: A Constitutional Analysis*, 51 S. CAL. L. REV. 1203 (1977)).

222. NBAC REPORT, *supra* note 2, at iv. See also *supra* note 10.

223. NBAC REPORT, *supra* note 2, at iv.

224. *Id.*

C. *A Right to Individuality?*

Others argue that U.S. citizens have constitutional rights to their own individuality and uniqueness.²²⁵ Because of the novelty of somatic cell nuclear transfer, society has not yet fully considered the issue of the right to genetic individuality. Cloning technology may infringe upon this "moral or human right"²²⁶ to individuality if such a right exists. Cloning technology has the potential to lead to "excessive control of children and their characteristics."²²⁷ Such uses of the cloning technology will decrease the genetic uniqueness of each human being. Some have argued:

The individual rights of a human being are the most concrete of ethical facts This is a right that supersedes every other right. Individuals have the right to be who they are simply because they are who they are. Their right to their own life, liberty, and the pursuit of their happiness is identical to their right to be who they are Cloning violates this right and violates one's destiny.²²⁸

Conversely, opponents of the view that cloning will violate a right to individuality state that "our uniqueness comes not just from our genes, but as well from our environment, personal history, human relationships, and choices through which we create our own biographies. Cloning would not deny anyone an unique human identity."²²⁹

D. *Federalism*

Another constitutional concern involves the concept of federalism. All powers not delegated to the federal government are reserved to the states.²³⁰ A federal ban may exceed the limits of federal power, especially when one considers that "the regulation of health and clinical practice has traditionally fallen to the states."²³¹ The United States has a tradition of state regulation governing certain areas such as family affairs and medical practice.

225. Amer, *supra* note 3. See also Newman, *supra* note 209.

226. Brock, *supra* note 191. Perhaps this right is simply an ethical consideration and does not fall under constitutional purview, but will be discussed as a related concept.

227. Tom Murray, *Hello Dollies!*, CENTERVIEWS (Center for Biomedical Ethics, Case Western Reserve University, Cleveland, Ohio), Fall 1997, at 2.

228. Gladys L. Husted & James H. Husted, *An Ethical Examination of Cloning*, 65 AORN J. 1112-13 (1997).

229. Brock, *supra* note 191, at 2. See also Steinbock, *supra* note 202, at 42-43 (explaining the "fallacy of 'genetic determinism'"); Dena S. Davis, *What's Wrong with Cloning?*, 38 JURIMETRICS 83 (1997).

230. U.S. CONST. amend. X.

231. See Wolf, *supra* note 215, at 13.

Furthermore, a federal ban “could stifle the diverse policy responses of the states, should some states wish to be more liberal in permitting nuclear transfer to create a child.”²³² However, federal powers are given an expansive interpretation, and human cloning may be appropriate for federal regulation.

IV. DISCUSSION

When drafting legislation and assessing its constitutionality, several related concerns factor into the decision-making process. In general, our government aims to legislate to protect the largest number of people from harm and to promote the good of the greatest number. This aim is achieved through a balancing process in which the harms and benefits of a particular proposal are weighed. Generally speaking, the benefits afforded by any legislation must outweigh the burdens imposed. The considerations involved in the human cloning discussion are whether the conduct legislatively prohibited is ethical, scientifically sound, moral, and accepted by religious teachings. To ensure that the enactment of constitutionally valid cloning legislation will receive public support, the discussion of human cloning must include several components.

On one side of the balancing equation, the burdens created by human cloning are strongly evidenced by the danger of and moral repugnance to the practice. The proposed bills in federal and state legislatures outlawing human cloning are the result of the public reaction to the prospect of human cloning.²³³ Initially fearful public reaction varied from images of “Mary Shelley’s Frankenstein, armies of drones, and clone farms to produce spare parts”²³⁴ to dreadful images of organs grown from headless human clones.²³⁵ Upon further consideration, the public became alarmed with the possibility that human cloning could interfere with “traditional notions of family, kinship,

232. NBAC REPORT, *supra* note 2, at 182. The NBAC report also suggested advantages to federal as opposed to state legislation such as comprehensive coverage and clarity, an assurance against state inconsistency, and prevention against forum shopping. *Id.* at 101.

233. See, e.g., Sharon Begley, *Little Lamb Who Made Thee, ?* NEWSWEEK, Mar. 10, 1997, at 56; Jeffery Kluger, *Will We Follow the Sheep, ?* TIME, Mar. 10, 1997, at 71; Gina Kolata, *With the Cloning of a Sheep, the Ethical Ground Shifts*, N.Y. TIMES, Feb. 24, 1997, at A1; Nancy Duff, *Clone with Caution: Don't Take Playing God Lightly*, WASH. POST, Mar. 2, 1997, at C1.

For related discussion, see Jean B. Elshtain, *Bad Seed*, NEW REPUBLIC., Feb. 9, 1998, at 9. For a related discussion regarding the recent controversy created by Dr. Richard Seed, see Guy Gugliotta, *United Against Human Cloning, Hill Leaders Differ on Specifics*, WASH. POST, Feb. 4, 1998, at A04. Seed plans to clone a human being sometime in the next year and a half. If the U.S. passes legislation to prohibit his activities, he plans to go to another country without similar restrictions.

234. Arlene J. Klotzko, *The Debate About Dolly*, 11 BIOETHICS 427, 429 (1997).

235. The Associated Press, *Headless Human Clones Will Grow Organs in 10 Years* (Oct. 19, 1997) <<http://www.globalchange.com/frogs.htm>>. See also Davis, *supra* note 229, at 84.

procreation, and human power over nature."²³⁶ The prospect of utilizing human cloning to adjust the genetic makeup of society could alter the future of all humankind. The widespread public outcry against human cloning, along with the general fear of and aversion to it, has provoked and fueled the current public policy discussions.

Yet others focus on the benefits of human cloning and advocate for the somatic cell nuclear transfer cloning technique. Human cloning could provide a viable option to couples unable to have their own children. In addition, the unknown possibilities associated with the somatic cell nuclear transfer technique could offer both life-saving and life-enhancing technologies. Furthermore, the protection of human cloning would promote the right to autonomy of scientists and safeguard the freedom to investigate. Finally, there are several potentially useful plant and animal technologies yet to be created which could also have vast human advantages.

Balancing these divergent interests and creating public policy are onerous tasks. Even a cursory glance at the tremendous volumes of legislative history warrants an appreciation of the difficulty of establishing widespread, acceptable public policy.²³⁷ Because the United States is a composite of divergent traditions, values, religions, and morals, any attempt to accommodate the various interests is an arduous undertaking. Regulating human cloning is especially challenging because the prospect of human cloning provokes such a diversity of opinions.²³⁸ To create sound cloning public policy, legislatures are striving to harmonize individual interests and beliefs while promoting the good and general welfare of the greater public.

Both the NBAC recommendations and the proposed legislation are examples of the attempt to balance the interests involved. The NBAC acknowledges that the creation of public policy regarding human cloning encompasses more than a simple analysis of the benefits and harms of cloning.²³⁹ The NBAC suggests that enacting cloning public policy also entails the complex consideration of "traditions, customs, and principles of constitutional law."²⁴⁰ In its effort to make public policy recommendations, the NBAC struggled to incorporate the multitude of public opinions. During their ninety-day assessment, the NBAC "hired a series of contractors (mainly academics) . . . to rapidly put together

236. R. Alta Charo, *Dealing with Dolly: Cloning and the National Bioethics Advisory Commission*, 38 JURIMETRICS 11, 19 (1997).

237. See generally Jeffrey P. Kahn, *A Temporary Halt: National Bioethics Commissions and NBAC's Cloning Report*, 38 JURIMETRICS 33, 34 (1997).

238. See generally IRA H. CARMEN, CLONING AND THE CONSTITUTION (1995).

239. NBAC REPORT, *supra* note 2, at 90-91.

240. *Id.* at 91.

reports documenting the underlying science of cloning, the main religious arguments for and against its use in humans, the outlines of secular ethics arguments on the same point, and the legal and policy issues raised” by human cloning.²⁴¹ The NBAC ultimately rested its conclusion to temporarily ban human cloning on safety and ethical concerns.

The recommendations of the NBAC are the product of a thoughtful analysis of cloning-related issues and a balancing of the benefits and harms at stake. The NBAC offered several justifications for a federal legal ban on research related to the cloning of human beings. The recommendations “reflect[ed] the Commission’s best judgments about the ethics of attempting such an experiment and [its] view of traditions regarding limitations on individual actions in the name of the common good.”²⁴² The NBAC determined that the fetuses and children resulting from cloning would be exposed to ethically unacceptable physical, psychological, and social risks and harms. Based on current public and academic perception, the NBAC deemed these risks and harms to outweigh the benefits of human cloning. Therefore, the NBAC advocated a prohibition on human cloning.

Some commentators have suggested a different assessment of the harms and benefits. A notable representative of such a view is Andrea Bonnicksen. She cautions against a premature legislative ban because human cloning is a “speculative technique” and because legislators are acting under “a false sense of urgency.”²⁴³ Bonnicksen suggests creating a cloning policy which “combines private and public oversight and that incorporates two other potential methods of replicating genomes: twinning and embryo cell nuclear transfer.”²⁴⁴ Another commentator, Susan Wolf, also criticizes the NBAC’s recommendation for a ban.²⁴⁵ She thinks cloning warrants regulation, but not a ban. She suggests “extend[ing] human subjects protection in the private sphere and regulat[ing] reproductive technologies efficiently, with a central advisory body for” such novel issues.²⁴⁶ John Robertson also criticizes the NBAC’s recommendation of a federal ban, stating that “[the NBAC] has not shown that the risks are so great or so likely to occur as to justify criminal law at the federal level, nor is it sufficiently sensitive to the procreative liberty and federalism costs of such an approach.”²⁴⁷

241. *Id.* at 17.

242. *Id.* at ii.

243. Andrea L. Bonnicksen, *Creating a Clone in Ninety Days: In Search of a Cloning Policy*, 38 JURIMETRICS 23 (1997).

244. *Id.* at 24.

245. See Wolf, *supra* note 215, at 12.

246. *Id.*

247. John A. Robertson, *Wrongful Life, Federalism, and Procreative Liberty: A Critique of the NBAC Cloning Report*, 38 JURIMETRICS 69, 81 (1997).

The different policy considerations and recommendations and the resulting legislation will inevitably face constitutional challenge. The prospect of human cloning forces a re-examination of basic constitutional values and guarantees. As the Constitution is interpreted over time, the protections afforded evolve. The Framers of the Constitution intended to develop a flexible document capable of varying interpretations. Judges and policy makers attempt to create law which responds to new scientific developments and emerging public attitudes. The Supreme Court has recognized rights embedded within the meaning of the Constitution. For example, while not explicitly stated in the text of the Constitution, the right to privacy has been acknowledged as a fundamental right, but the limits of this right are challenged on a continual basis. Whether human cloning is included in the penumbra of recognized privacy rights will be determined by and reflective of our moral, cultural, and religious values. Determining whether human cloning falls within the spirit of our Constitution is the essence of the current controversy.

V. CONCLUSION

The differing opinions expressed regarding the prospect of human cloning emphasize our current vague understanding of its implications. Federal and state legislatures are presently assessing the morality and legality of human cloning research. Similarly, international initiatives are exploring the vast ramifications of the new technology. In the United States, the human cloning discussion is inevitably intertwined with considerations regarding the constitutional validity of prohibitive legislation. A discussion of the scope of our protected liberty interests and the countervailing governmental interests is necessitated by the somatic cell nuclear transfer technique and its applicability to human cloning. The current NBAC recommendations and the federal and state proposals reflect a balancing of the divergent interests at stake and are an attempt at responsible public policy regarding human cloning.

