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## NOTES

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# PATENTING HUMAN LIFE AND THE REBIRTH OF THE THIRTEENTH AMENDMENT

*Esther Slater McDonald\**

### INTRODUCTION

In 1998, James Thompson successfully cultivated embryonic stem cells in a culture dish, helping to further scientific claims that human embryonic<sup>1</sup> research could provide the cures for fatal diseases and the means for cloning.<sup>2</sup> Since that day, embryonic research<sup>3</sup> has become

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\* Candidate for Juris Doctor, Notre Dame Law School, 2003; B.A., Pensacola Christian College, 2000. I dedicate this note to my mother and father for teaching me the way that I should go and to my husband Andrew for joining me in my continued journey along that way. Also, I thank Professor Patricia Bellia for her invaluable comments. Last, I thank the members of the Austin Fellowship for introducing me to this topic.

1 In this Note, the words “embryo” or “embryonic” refer to human embryos unless otherwise noted.

2 See Tim Friend, *Human Cells Grown in Lab for First Time*, USA TODAY, Nov. 6, 1998, at A1.

3 In this Note, “embryonic research” refers to *non-therapeutic* embryonic research. There are two forms of embryonic research: therapeutic and non-therapeutic. Alex Maun, *What Developments of Human Embryo Research Would Be Philosophically Challenging?*, in *CONCEIVING THE EMBRYO: ETHICS, LAW AND PRACTICE IN HUMAN EMBRYOLOGY* 283, 283 (Donald Evans ed., 1996). Therapeutic research is performed for the benefit of the embryo. *Id.* Non-therapeutic research is performed for the benefit of another, without regard for the interests of the embryo. *See id.* Non-therapeutic research is “not designed to benefit [the] specific embryo” subjected to research. *Id.*

Some of the more well-known uses of non-therapeutic embryonic research occur in cloning and embryonic stem-cell research. *See* Francis Fukuyama, *The House Was Right To Ban Cloning*, WALL ST. J., Aug. 2, 2001, at A14 (stating that therapeutic or research cloning involves the creation of a human embryo for destruction); Sheryl Gay Stolberg, *Science Academy Supports Cloning To Treat Disease*, N.Y. TIMES, Jan. 19, 2002, at A1 (quoting the National Academy of Sciences panel report that reproductive cloning is “‘dangerous and likely to fail’”); *see also* Rick Weiss & Ceci Connolly, *Experts Urge Ban on Cloned Babies*, WASH. POST, Jan. 19, 2002, at A1 (noting that a legal

a breeding ground for moral and political debate because the research requires the destruction of human embryos.<sup>4</sup> Debates over the federal funding of embryonic stem-cell research and the legality of cloning have produced factions in political parties and interest groups alike, creating dividing lines in unexpected places.<sup>5</sup> In November 2001, Advanced Cell Technology (ACT), a company specializing in biotechnology, revealed that it had cloned a human embryo.<sup>6</sup> More recently, on December 27, 2002, Clonaid, a corporation associated with the Raelian religion,<sup>7</sup> claimed it had facilitated the birth of the world's first human clone.<sup>8</sup> Both announcements added fervor to the cloning debate.

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ban on reproductive cloning alone would create "a de facto federal insistence on embryo destruction").

4 See Gautam Naik, *In 2 Separate Studies, Human Stem Cells Are Used To Generate Brain Tissue in Mice*, WALL ST. J., Dec. 3, 2001, at B14.

5 See Antonio Regalado et. al., *Stem-Cell Issue Entangles Science and Policy*, WALL ST. J., Aug. 10, 2001, at A10. The Regalado article notes that the debate about embryonic stem-cell research does not divide along pro-life/pro-choice lines. *Id.* For example, the article states that pro-life Senators Orrin Hatch and Bill Frist support such research, while the pro-choice United Methodist Church opposes such research. *Id.*; see also Sheryl Gay Stolberg, *Some for Abortion Rights Lean Right in Cloning Fight*, N.Y. TIMES, Jan. 24, 2002, at A25 (debunking the idea that the cloning debate is "a classic left-right clash" and describing the formation of a liberal-conservative coalition to oppose cloning); Rick Weiss, *Bush Backs Broad Ban on Human Cloning*, WASH. POST, June 21, 2001, at A1. Noting pro-life Senator Orrin Hatch's support of non-therapeutic embryonic research, Weiss credits the debate on embryonic stem-cell research with "giv[ing] rise to unusual political bedfellows." *Id.* On the opposite end of the spectrum, Weiss describes reproductive rights advocates' support of a total ban on human cloning and refers to the support as "an unusual political crossover." *Id.*

6 See Antonio Regalado et al., *Stem-Cell Researchers Make Cloned Embryos of a Living Human*, WALL ST. J., Nov. 26, 2001, at A1. Although ACT claimed to have been the first to clone an embryo, others discredited the claim, saying that ACT had done nothing new. See Paul Elias, *Cloning Co. Faces Stiff Competition*, AP ONLINE, Nov. 26, 2001, available at 2001 WL 30249068. Cythera, a competitor of ACT, responded to the news by saying, "It's been known for quite some time that you could do this and get a one or two cell division." *Id.* The *New York Times* reported, "[ACT] could not even report that it had used ground breaking techniques, its methods had already been used in animals." Gina Kolata & Andrew Pollack, *A Breakthrough on Cloning? Perhaps, or Perhaps Not Yet*, N.Y. TIMES, Nov. 27, 2001, at A1.

7 Manuel Roig-Franzia & Rick Weiss, *Religious Sect Says It Cloned Human*, WASH. POST, Dec. 28, 2002, at A3. The Raelian religion holds that all humans are clones of aliens. *Id.*

8 Clonaid's claim that it has delivered the first human clone is unconfirmed. See *id.* (noting that Clonaid offered no proof to support its claim); see also *House Members Again Seek To Ban Human Cloning*, WASH. POST, Jan. 9, 2003, at A5 (noting that Clonaid's claim has not yet been confirmed). The scientific community, though skeptical of Clonaid's claim, has not dismissed this claim. See Roig-Franzia & Weiss, *supra*

With increasing advancements in the field of embryonic research, cloning is no longer a mere science-fiction idea. Cloning is a reality.<sup>9</sup> Biotechnology companies continue to submit various patent applications for the process of human cloning and for the resulting human clones.<sup>10</sup> Seeking to avoid the debate on patenting embryos, the U.S. Patent & Trademark Office (PTO) will state only that it “does not issue patents drawn to human beings”<sup>11</sup> because the Thirteenth Amendment prohibits such patents.<sup>12</sup> Commentators believe, however, that it will not be long before the PTO does grant patents on human embryos.<sup>13</sup> Others believe that the PTO has already granted such patents.<sup>14</sup>

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note 7 (quoting a cloning expert with ACT as saying that while highly questionable, Clonaid’s claim “cannot be completely dismissed because it may be rather easier than any of us thought to clone a human”).

9 See *supra* notes 5–6 and accompanying text.

10 See Amy Fagan, *University’s Cloning Patent Raises a “Mammal” Issue*, WASH. TIMES, May 21, 2002, at A12; *USPTO Grants Patent Related to Human Reproductive Cloning*, BIOTECH PATENT NEWS, May 1, 2002, at 11 (detailing three such patents pending before the PTO); see also Antonio Regalado, *Kansas Senator Seeks To Block Patents on People*, WALL ST. J., May 17, 2002, at B7 (stating that the PTO “has issued several patents covering methods of genetically engineering humans . . . [which] appear to give several U.S. universities rights to novel ways of creating human embryos in the laboratory, and in some cases bringing them to term”).

11 Neil Munro, *The New Patent Puzzle*, 34 NAT’L J. 577, 629 (2002) (quoting statement by the chief spokesman for the PTO).

12 Aaron Zitner, *Patently Provoking a Debate*, L.A. TIMES, May 12, 2002, at A1 (noting that “[s]ome patent experts doubt that this stance [reliance on the Thirteenth Amendment] is legally sound”). The PTO also justifies its position through statutory interpretation. Although Congress has never specifically addressed the subject, the PTO interprets the patent laws to exclude humans. *Id.*

In a recent rejection notice of a patent, the PTO “appears to concede that it has little or no legal authority” to prevent the patenting of human embryos. Aaron Zitner, *Of Mice and Men*, MILWAUKEE J. SENTINEL, June 3, 2002, at 1G; see also *infra* note 192.

13 See Dashka Slater, *huMouse*, 1 LEGAL AFF. 20, 23 (2002); see also Zitner, *supra* note 12 (quoting a patent attorney as stating that there are compelling scientific reasons for wanting a patent on a human embryo and noting that biotech companies will likely pressure the PTO to grant patents on human embryos).

14 On April 3, 2001, the PTO issued patent No. 6,211,429 to the University of Missouri at Columbia. Justin Gillis, *A New Call for Cloning Policy*, WASH. POST, May 17, 2002, at A12. This utility patent covers not only a method for cloning mammals but also “the cloned products produced by these methods.” *Id.* (emphasis added) (quoting the specific language of the patent). Although similar patents on cloning contain explicit language excluding humans from the patent’s coverage, the Missouri patent contains no such language. *Id.* When asked about the Missouri patent, a PTO spokeswoman refused to comment, stating only, “Our policy has not changed. . . . We do not patent claims drawn to humans.” *Id.*; see also William Kristol & Jeremy Rifkin, *First Test of the*

This Note examines the claim that the Thirteenth Amendment's prohibition against slavery prohibits the patenting of human embryos. Part I establishes the humanity of the human embryo. Part II discusses in general the regulations of patent law and the application of those regulations to biotechnology. Part III considers the relevance of abortion law to the patenting of human embryos. Part IV traces the development of the Thirteenth Amendment and establishes its meaning. Part V applies the Thirteenth Amendment to the patenting of human embryos. This Note concludes that patenting a human embryo violates the Thirteenth Amendment.

## I. THE HUMANITY OF THE EMBRYO

Before considering the question of whether human embryos are patentable, one must first determine the biological status of an embryo. What is an embryo? The term "embryo" refers to "the unborn human from fertilization to 8–10 weeks gestation."<sup>15</sup> Human development begins with fertilization, the union of an egg and a sperm.<sup>16</sup> Fertilization creates an embryo<sup>17</sup> possessing the forty-six chromo-

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*Biotech Age: Human Cloning*, L.A. TIMES, Mar. 6, 2002, at B11 (stating that "[I]f science companies already have patented . . . human embryos"). Shortly thereafter, Sen. Sam Brownback of Kansas offered legislation prohibiting patents on human embryos. See Amy Fagan, *Brownback Stays with Effort To Pass Human-Cloning Ban*, WASH. TIMES, June 15, 2002, at A5. That legislation was promptly defeated. See Amy Fagan, *Cloning Proposal Stripped from Bill*, WASH. TIMES, June 19, 2002, at A4.

15 Clarke D. Forsythe, *Human Cloning and the Constitution*, 32 VAL. U. L. REV. 469, 474 (1998). This Note does not distinguish between the so-called preembryo and the embryo. The preembryo-embryo distinction did not exist until recently and has been discredited by science. RONAN O'RAHILLY & FABIOLA MÜLLER, HUMAN EMBRYOLOGY & TERATOLOGY 88 (3d ed. 2001). The term "preembryo" was created in 1986 "largely for public policy reasons." *Id.* The term has been rejected by human embryologists as "ill-defined," "inaccurate," "unjustified," and "equivocal." *Id.*

Even now, in light of controversy over non-therapeutic embryonic research, proponents of the research have attempted to create new "scientific" terms to replace the word "embryo." See J. Bottum, *While the Senate Sleeps*, WKLY. STANDARD, Dec. 10, 2001, at 9–10 (stating that "insistence from Michael West [president of ACT] and others that their clones aren't really embryos but 'somatic cells' is falsified by their own *Scientific American* article, which announces 'the first human embryos produced using the technique of nuclear transplantation, otherwise known as cloning'"); Tim Graham, *Monstrous, Inc.*, WORLD, Dec. 8, 2001, at 22 (noting the attempts of ACT's lead advisor to persuade reporters to refer to the company's human embryos as "activated eggs").

16 See BRUCE M. CARLSON, HUMAN EMBRYOLOGY AND DEVELOPMENTAL BIOLOGY 3 (1994); KEITH L. MOORE & T.V.N. PERSAUD, THE DEVELOPING HUMAN: CLINICALLY ORIENTED EMBRYOLOGY 14 (5th ed. 1993).

17 See CARLSON, *supra* note 16, at 3.

somes that “mark the human species.”<sup>18</sup> Fertilization produces “an individual member of the species *homo sapiens sapiens*—or [a] human being.”<sup>19</sup> That human being is the embryo.<sup>20</sup>

The embryo possesses the essential elements of humanity. From the embryo come all cells in the human body.<sup>21</sup> The embryo begins as a one-celled zygote and then divides into multiple totipotent<sup>22</sup> cells called blastomeres.<sup>23</sup> Totipotent cells have “unlimited developmental capacity,”<sup>24</sup> or the ability to form any cell in the human body. Those blastomeres differentiate into “structurally and functionally specialized” cells.<sup>25</sup> The embryo’s cells are “metabolizing (processing matter and energy within the cells), reproducing, and growing.”<sup>26</sup> Just like a newborn, a teenager, or an adult, the embryo is growing and developing.

The embryo is a unique genetic individual.<sup>27</sup> Fertilization determines his sex and genetic identity.<sup>28</sup> Because the embryo contains “the entire genetic code of the individual,”<sup>29</sup> he is a distinct human being with a distinct identity. With predispositions to certain conditions such as heart disease,<sup>30</sup> the embryo is “destined for a specific

18 Forsythe, *supra* note 15, at 475–76 (citing CARLSON, *supra* note 16, at 31).

19 *Id.* at 475; *see also* BRADLEY M. PATTEN, HUMAN EMBRYOLOGY 54 (2d ed. 1953) (stating that fertilization “marks the initiation of the life of a new individual”).

20 *See, e.g.*, ERICH BLECHSCHMIDT, THE BEGINNINGS OF HUMAN LIFE 17 (1977) (stating that “the evidence no longer allows a discussion as to if and when and in what month of ontogenesis a human being is formed. To be a human being is decided for an organism at the moment of fertilization”); MOORE & PERSAUD, *supra* note 16, at 1, 6 (stating that fertilization is “the beginning of a new human being”); O’RAHILLY & MÜLLER, *supra* note 15, at 5 (noting that an embryo is a “developing human being”).

21 Forsythe, *supra* note 15, at 476.

22 CARLSON, *supra* note 16, at 60; *see also* O’RAHILLY & MÜLLER, *supra* note 15, at 23 (stating that each blastomere is “capable, on isolation, of forming a complete embryo”).

23 CARLSON, *supra* note 16, at 31–33.

24 *Id.* at 137.

25 *Id.*

26 *Id.*

27 *See* O’RAHILLY & MÜLLER, *supra* note 15, at 23; Forsythe, *supra* note 15, at 477.

28 *See* CARLSON, *supra* note 16, at 31; MOORE & PERSAUD, *supra* note 16, at 32; O’RAHILLY & MÜLLER, *supra* note 15, at 20.

29 Forsythe, *supra* note 15, at 477; *see also* O’RAHILLY & MÜLLER, *supra* note 15, at 20.

30 *See* O’RAHILLY & MÜLLER, *supra* note 15, at 71; *see also* CARLSON, *supra* note 16, at 123–25 (noting that an embryo can have a predisposition to a shortened life-span due to Down’s syndrome); O’RAHILLY & MÜLLER, *supra* note 15, at 71 (noting that an embryo can be predisposed to develop diabetes).

life.”<sup>31</sup> Fertilization sets the embryo “on a predetermined pathway of life.”<sup>32</sup>

From fertilization, the human embryo is a genetically distinct human being. The embryo is not mere human material or potential human life. An embryo is a human *being*:<sup>33</sup>

[T]he embryo from the earliest moment has the active capacity to articulate itself into what everyone acknowledges is a human being. The embryo is a being; that is to say, it is an integral whole with actual existence. The being is human; it will not articulate itself into some other kind of animal. *Any being that is human is a human being.* If it is objected that, at five days or fifteen days, the embryo does not look like a human being, it must be pointed out that this is precisely what a human being looks like—and what each of us looked like—at five or fifteen days of development.<sup>34</sup>

Biology confirms that the embryo is a human being.<sup>35</sup> Nonetheless, some may argue that abortion jurisprudence suggests otherwise. Part III will examine that argument.

## II. THE REQUIREMENTS OF PATENT LAW

After determining the status of the human embryo, one can then consider the applicability of relevant law to the patenting of human embryos. As noted in the Introduction, the relevant law is primarily constitutional. Relevant to the question of whether human embryos can be patented are patent law, abortion law, and Thirteenth Amendment law. Though the three areas of law begin with the Constitution, patent law devolves into statutory law. For that reason, this Note will discuss the application of both constitutional and statutory law to the patenting of human embryos.

The first relevant area of law is patent law. To promote scientific advancement, the Framers drafted the Patent Clause as a means of rewarding the labor of inventors. The Patent Clause grants Congress the power “to promote the Progress of Science and useful Arts, by

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31 Kelly Hollowell, Essay, *Cloning: Exposing Flaws in the Preembryo-Embryo Distinction and Redefining When Life Begins*, 11 REGENT U. L. REV. 319, 337 (1999).

32 *Id.* at 338.

33 See, e.g., BLECHSCHMIDT, *supra* note 20, at 16 (stating that the human embryo develops into a man rather than a chicken because a human embryo is a human being, not a chicken egg); MOORE & PERSAUD, *supra* note 16, at 1, 6 (stating that fertilization is “the beginning of a new human being”); O’RAHILLY & MÜLLER, *supra* note 15, at 5 (noting that an embryo is a “developing human being”).

34 *The Inhuman Use of Human Beings: A Statement on Embryo Research*, FIRST THINGS, Jan. 1995, at 17, 17–18 (emphasis added).

35 See *supra* note 33.

securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries.”<sup>36</sup> Congress exercises this power through a patent system overseen by the PTO.<sup>37</sup> In exchange for disclosure of the details of an invention, an inventor receives a patent from the government.<sup>38</sup> Depending on the patent, a patent grants its holder a fourteen-<sup>39</sup> or twenty-year<sup>40</sup> right to exclude others from making, using, or selling the patented invention.<sup>41</sup> If the invention is a process, the patent also grants its holder the right to exclude others from making, using, or selling the products of the patented invention.<sup>42</sup>

To receive a patent, an invention must satisfy the statutory conditions for patentability. First, the inventions must be useful,<sup>43</sup> novel,<sup>44</sup> and nonobvious.<sup>45</sup> Second, the invention must fall within a category of patentable subject matter. In delineating patentable subject matter, Congress has created several categories of patents. The category most relevant to our discussion is the utility patent.<sup>46</sup> Under 35 U.S.C. § 101, utility patents are granted to “a process, machine, manufacture, or composition of matter or any new and useful improvement thereof.”<sup>47</sup> Of the different patents, the utility patent covers the broadest subject matter because the words “machines, manufactures, and compositions of matter” have “a meaning as broad as the human mind can range.”<sup>48</sup>

The statutory language of the utility patent was not always interpreted so broadly, however. Until recently, living organisms were not considered patentable. In 1974, the PTO rejected patent applications for microorganisms<sup>49</sup> and multicellular organisms.<sup>50</sup> Stating that “35 U.S.C. 101 must be strictly construed,” the PTO Board of Appeals held

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36 U.S. CONST. art. I, § 8, cl. 8.

37 See 35 U.S.C. §§ 1–2 (2000).

38 See *id.* § 112.

39 A design patent grants its holder a fourteen-year right. See *id.* § 173.

40 A plant or utility patent grants its holder a twenty-year right. See *id.* § 154.

41 *Id.*

42 *Id.*

43 See *id.* § 101.

44 See *id.* § 102.

45 See *id.* § 103.

46 See *id.* § 101.

47 *Id.*

48 ROBERT L. HARMON, PATENTS AND THE FEDERAL CIRCUIT 41 (4th ed. 1998).

49 See 1 IVER P. COOPER, BIOTECHNOLOGY AND THE LAW § 2:3 (2002).

50 *Id.* § 2:4.



that strict construction "precludes the patenting of a living organism."<sup>51</sup>

In 1980, the Supreme Court reviewed the PTO's interpretation of 35 U.S.C. § 101 in *Diamond v. Chakrabarty*.<sup>52</sup> A five-to-four decision held that an organism could be a "manufacture" or "composition of matter" within the meaning of § 101.<sup>53</sup> The Court reasoned that "the relevant distinction [is] not between living and inanimate things, but between products of nature, whether living or not, and human-made inventions."<sup>54</sup> Noting that Congress drafted the section in "expansive terms," the Court stated that the statutory subject matter "include[s] anything under the sun that is made by man."<sup>55</sup>

Thereafter, relying on its interpretation of the *Chakrabarty* decision, the PTO announced that it would consider "nonnaturally occurring, nonhuman multicellular living organisms, including animals, to be patentable subject matter within the scope of 35 U.S.C. 101."<sup>56</sup> The PTO regulations state that under *Chakrabarty* "the question of whether or not an invention embraces living matter is irrelevant to the issue of patentability."<sup>57</sup> However, according to PTO regulations, "[i]f the broadest reasonable interpretation of the claimed invention as a whole encompasses a human being, then a rejection under 35 U.S.C. 101 must be made."<sup>58</sup>

Because of the broad language used in § 101, a patent application for a human embryo would likely fall in the utility category.<sup>59</sup> Analysis of whether a human embryo would satisfy the remaining statutory requirements of patent law is beyond the scope of this Note. This Note assumes, therefore, that a human embryo would satisfy the requirements of novelty, usefulness, and nonobviousness.

### III. THE RELEVANCE OF ABORTION LAW

Abortion law is the second area of law relevant to the question of patenting human embryos. Although some may argue that abortion

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51 *Ex parte Bergy, Coats, and Malik*, 197 U.S.P.Q. 78, 79 (Pat. & Trademark Off. Bd. App. 1976), *rev'd sub nom.* Application of Bergy, 563 F.2d 1031 (C.C.P.A. 1977).

52 447 U.S. 303 (1980).

53 *Id.* at 308.

54 *Id.* at 312-13.

55 *Id.* at 308-09.

56 U.S. PATENT OFFICE, DEPT. OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE § 2105 (8th ed. 2001).

57 *Id.*

58 *Id.*

59 *See supra* note 14 (describing a utility patent that potentially grants a patent on a human embryo).

law bears on the question,<sup>60</sup> those who make such an argument often confuse a legal question with a biological question. They confuse the terms “person” and “human being.”<sup>61</sup> Before examining the relevance of abortion law, one must define those terms. “Person” is a legal term; “human being,” a biological term. “Person” is defined by law; “human being,” by science. “Person” has a meaning that changes through time; “human being,” a meaning that remains constant through time.

“Person” is a legal term defined subjectively by law. Under the law, a human being *may not* be a “person” but a non-human being *may be* a “person.” Whether someone or something is a person depends upon the context of the question. For example, in the United States, the law makes Jane Doe, a non-resident alien not present in the United States, a non-person for purposes of Fifth Amendment law<sup>62</sup> but makes corporation ABC, Inc. of Delaware a person for purposes of federal statutory law.<sup>63</sup>

In contrast with “person,” “human being” is a biological term defined objectively by science. A human being is “a member of the species homo sapiens.”<sup>64</sup> Therefore, non-citizens are human beings, and corporations are not. Although non-residents can sometimes be non-persons, non-residents can never be non-humans, and though corporations can sometimes be persons, corporations can never be humans. Non-citizen Jane Doe became a human being at fertilization. Hence, even as an unknown embryo, Jane Doe was a human being. The law cannot change the scientific fact that an embryo is a human being.<sup>65</sup>

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60 See Dan Burk, *Patenting Transgenic Human Embryos: A Nonuse Cost Perspective*, 30 Hous. L. Rev. 1597, 1656 (1993) (arguing that the Thirteenth Amendment does not apply to human embryos because they are not “persons”). Although Burk does state that “the discussion of the embryo’s status must necessarily stand on a different legal footing than that of the discussion of fetal abortion,” he defines the limits of the Thirteenth Amendment with *Roe v. Wade*’s concept of personhood. *Id.* at 1652–56 (citing *Roe v. Wade*, 410 U.S. 113, 158 (1973)).

61 See *id.* at 1656 (arguing that the Thirteenth Amendment does not apply to human embryos because they are not “persons”); Stevan M. Pepa, Note, *International Trade and Emerging Genetic Regulatory Regimes*, 29 LAW & POL’Y INT’L BUS. 415, 447 n.116 (1998) (citing *Roe*, 410 U.S. at 113, for the proposition that the Constitution provides no protection to human embryos because they are not “persons”).

62 See *Johnson v. Eisentrager*, 339 U.S. 763, 783–85 (1950) (holding that the word “person” in the Fifth Amendment does not include non-resident, extraterritorial aliens).

63 See The Dictionary Act, 1 U.S.C. § 1 (2000). The Dictionary Act defines “person” as including “corporations, companies, associations, firms, partnerships, societies, and joint stock companies, as well as individuals.” *Id.*

64 Forsythe, *supra* note 15, at 478.

65 See *supra* Part I.

Abortion law deals not with the humanity of the embryo but rather with the “personhood” of the embryo. In *Roe v. Wade*,<sup>66</sup> the Court held that fetuses were not “persons” within the meaning of the Fourteenth Amendment.<sup>67</sup> However, because the term “person” is a legal term, the meaning of “person” in the Fourteenth Amendment could change at any time. The Constitution could be amended to read as follows: “The word ‘person’ as used within the Constitution shall henceforth be defined as blue-eyed, blond-haired female citizens having reached 21 years of age.” Were that amendment passed, aliens, males, children, brunettes, and many other individuals would no longer be “persons” within the meaning of the Constitution. Nonetheless, those “non-persons” would still be human beings.

Similarly, although the law often considered African-American slaves “non-persons,”<sup>68</sup> the slaves were undoubtedly human beings. By the same logic, although the law may consider embryos to be “non-persons,” embryos are still human beings because of their membership in the species *homo sapiens*. A lack of personhood under the law does not equal a lack of humanity.

Although *Roe v. Wade* and *Planned Parenthood v. Casey*<sup>69</sup> addressed the legal status of embryos, neither case bears on the question of human embryo patentability. The cases are inapplicable to the issue because neither case addressed the ownership of human beings. *Roe v. Wade* answered the following questions: (1) does a woman have a constitutional right to an abortion?<sup>70</sup> and (2) if a woman has a right to an abortion, when can the state limit that right?<sup>71</sup> The Court held that a woman has a constitutional right to an abortion<sup>72</sup> that can be

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66 410 U.S. 113 (1973).

67 *Id.* at 158.

68 See generally *Dred Scott v. Sandford*, 60 U.S. (19 How.) 393 (1857) (holding that blacks were not entitled to constitutional protections). In his decision, Chief Justice Taney stated that blacks were “beings of an inferior order” and “so far inferior [to whites], that they had no rights which the white man was bound to respect.” *Id.* at 407. Although the *Dred Scott* Court defined the constitutional meaning of “citizen” rather than “person,” commentators agree that the decision stands as a denial of the legal personhood of slaves. See, e.g., Erwin Chemerinsky, *Getting Beyond Formalism in Constitutional Law*, 54 OKLA. L. REV. 1, 2 n.4 (2001) (stating that *Dred Scott* held that “slaves are property, and not persons”); Cass Sunstein, *Standing for Animals (With Notes on Animal Rights)*, 47 UCLA L. REV. 1333, 1361 & n.154 (2000) (citing *Dred Scott* for the proposition that the law did not consider slaves to be persons).

69 505 U.S. 833 (1992).

70 *Roe*, 410 U.S. at 129.

71 *Id.*

72 *Id.* at 153.

limited only to protect a viable fetus<sup>73</sup> if the limitation does not endanger the mother's health.<sup>74</sup> While the Court recognized the state interest in protecting the fetus, the Court also noted the "[s]pecific and direct harm" that pregnancy may impose upon a woman.<sup>75</sup>

The Court rejected the argument that a fetus had a fundamental right to life under the Fourteenth Amendment.<sup>76</sup> The Court held that the Fourteenth Amendment guarantees rights only to a "person."<sup>77</sup> The Court further held that a fetus is not a person within the meaning of the Fourteenth Amendment because the Amendment's use of the word "person" has no "possible pre-natal application."<sup>78</sup> The Court expressly declined to reach the question of whether unborn children are human beings.<sup>79</sup> According to the Court, the humanity of the embryo had no relevance to the conclusion that Fourteenth Amendment rights do not extend to fetuses.<sup>80</sup> Whether a fetus is human or not, he has no rights under the Fourteenth Amendment.<sup>81</sup> As the Court stated, even if the fetus is a human being, he is not a human being "entitled to Fourteenth Amendment protection."<sup>82</sup>

In *Casey*, the Court affirmed the central holding of *Roe* but modified *Roe*'s trimester framework because "it misconceive[d] the nature of the pregnant woman's interest; and in practice it undervalue[d] the State's interest in potential life."<sup>83</sup> In upholding the fundamental right to abortion, the Court noted that *pregnancy* makes the woman "unique to the human condition and so unique to the law."<sup>84</sup> However, the Court buttressed the state's interest in protecting the life of the fetus "from the outset of the pregnancy"<sup>85</sup> by expanding the restrictions that a state may place on the right to an abortion.<sup>86</sup>

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73 *Id.* at 164–65.

74 *Id.* at 165. A state cannot prevent a woman from having an abortion "where it is necessary . . . for the preservation of the life or health of the mother." *Id.*

75 *Id.* at 153.

76 *Id.* at 156–57.

77 *See id.*

78 *Id.* at 157.

79 *See id.* at 159.

80 *See id.*

81 *Id.*

82 *See id.*

83 *Planned Parenthood v. Casey*, 505 U.S. 833, 873 (1992).

84 *Id.* at 852. This reasoning and similar reasoning within *Casey* suggest that the right to an abortion arises not from a right of privacy but rather from a right of bodily autonomy. *Id.*

85 *Id.* at 846.

86 *See id.* at 878.

Together *Roe* and *Casey* reflect a balancing of (1) the woman's interest in her "bodily integrity"<sup>87</sup> and (2) a state's substantial interest in protecting unborn life from the moment of conception.<sup>88</sup> Because they exist outside of her body, extracorporeal embryos do not implicate a woman's interest in her "bodily integrity."<sup>89</sup> Courts considering the ownership of embryos have agreed that *Roe* and *Casey* do not control the decision. In *Davis v. Davis*,<sup>90</sup> the Tennessee Supreme Court, in determining ownership of a divorced couple's embryos, stated that "[n]one of the concerns about a woman's bodily integrity . . . is applicable here."<sup>91</sup> Similarly, in *Kass v. Kass*,<sup>92</sup> the Court of Appeals of New York held that disposition of embryos "does not implicate a woman's right of privacy or bodily integrity."<sup>93</sup> Because abortion law has no relevance outside of the context of a pregnancy, *Roe* and *Casey*'s holdings are irrelevant to the question of patenting human embryos.

Furthermore, *Roe* and *Casey* are inapplicable because neither case decided the humanity of the fetus. The cases dealt only with the legal personhood of the fetus.<sup>94</sup> Because extracorporeal embryos do not implicate a woman's bodily integrity and because neither *Roe* nor *Casey* dealt with the humanity of the fetus, abortion law bears no relation to question of patenting human embryos.<sup>95</sup> As law professor Dan Burk noted, "the discussion of the embryo's status must necessarily stand on a different legal footing than that of the discussion of fetal abortion."<sup>96</sup>

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87 *Id.* at 857.

88 See Jill Madden Melchoir, Comment, *Cryogenically Preserved Embryos in Dispositional Disputes and the Supreme Court: Breaking Impossible Ties*, 68 U. CIN. L. REV. 921, 941-42 (2000).

89 See Kristine E. Luongo, Comment, *The Big Chill: Davis v. Davis and the Protection of "Potential Life"?*, 29 NEW ENG. L. REV. 1011, 1038 (1995) (arguing that a woman's right to "bodily autonomy" is invoked by the "intra-body nature of a pregnancy").

90 842 S.W.2d 588 (Tenn. 1992).

91 *Id.* at 601.

92 91 N.Y.2d 554 (1998).

93 *Id.* at 564.

94 The legal personhood of the embryo is irrelevant because the Thirteenth Amendment prohibits the enslavement of *human beings*. See *infra* Part IV. The scope of the Amendment is not limited to legal persons. See *infra* Part IV.

95 Abortion law's recognition of the state's interest in protecting potential human life would bear some relation to the question. Because extracorporeal embryos do not implicate a woman's bodily integrity, the state's interest in protecting the embryos would be greater.

96 Burk, *supra* note 60, at 1652; see also George J. Annas et al., *The Politics of Human-Embryo Research—Avoiding Ethical Gridlock*, 334 NEW ENG. J. MED. 1329 (1996) (arguing that the abortion policy should not apply to the question of embryonic research).

## IV. THE THIRTEENTH AMENDMENT

The last area of law relevant to the question of patenting human embryos is the Thirteenth Amendment. A relatively short amendment, the full text of the Thirteenth Amendment reads,

Neither slavery nor involuntary servitude, except as a punishment for crime, whereof the party shall have been duly convicted, shall exist within the United States, or any place subject to their jurisdiction.

Congress shall have power to enforce this article by appropriate legislation.<sup>97</sup>

Though brief in text, the Amendment speaks volumes in history. The principle of the Thirteenth Amendment incited the bloodiest war ever fought by Americans.<sup>98</sup> By the time of the Amendment's proposal, the debate of its merit had already been fleshed out in the public square:<sup>99</sup> "By the mid-eighteen hundreds, the abolitionist movement and the question of whether slavery should be abolished pervaded the American consciousness."<sup>100</sup> For this reason, the members of Congress "did not need to recite the particulars of the evils of slavery to justify the Amendment."<sup>101</sup> To understand wholly the Amendment, therefore, one must consider it within its full historical context.<sup>102</sup> Public debates, congressional debates, and judicial interpretation establish that the Thirteenth Amendment abolished *human* slavery.

Public debate over slavery had existed since the country's founding.<sup>103</sup> By 1865, "virtually everyone . . . understood slavery as chattel-

97 U.S. CONST. amend. XIII.

98 GEORGE H. HOEMANN, *WHAT GOD HATH WROUGHT: THE EMBODIMENT OF FREEDOM IN THE THIRTEENTH AMENDMENT* 123 (1987) (defining slavery as the "root problem" of the war); *id.* at 83 (citing President Lincoln's assertion that without slavery the Civil War would not have occurred). *But see id.* at 68–69 (stating that conservatives, or Unionists, believed that the war was not about slavery but rather about the preservation of the Union).

99 See Joyce E. McConnell, *Beyond Metaphor: Battered Women, Involuntary Servitude and the Thirteenth Amendment*, 4 YALE J.L. & FEMINISM 207, 218 (1992).

100 *Id.*

101 *Id.*

102 *Id.* at 218–19 (arguing that the debates do not offer the insight into the understanding of the framers that the materials preserving the public debates over the Amendment do).

103 DON E. FEHRENBACHER, *SLAVERY, LAW, & POLITICS: THE DRED SCOTT CASE IN HISTORICAL PERSPECTIVE* 9–15 (1981) (discussing the "obstacle to American union" that slavery had caused "since the beginning of independence" and describing efforts to abolish slavery).

ism,”<sup>104</sup> the idea that human beings can be property.<sup>105</sup> The abhorrence of that idea fueled the abolitionist movement.<sup>106</sup> The recognition that slavery rested upon “a *dehumanizing* philosophy”<sup>107</sup> of chattelism<sup>108</sup> underscored the movement to abolish slavery.

Chattelism, according to abolitionists, is inhumane because it denies basic human rights<sup>109</sup> inalienable to all humans.<sup>110</sup> The political philosophy that led to the founding of the United States had grounded itself on the existence of inalienable human rights. The founding documents reflect that fact: the Declaration of Independence affirms the inalienability of human rights, and the Constitution rests upon a respect for human rights.<sup>111</sup> By denying the inalienability of those rights, slavery evidenced a nation “decadently unmoored from its basis in the political theory of human rights.”<sup>112</sup>

Because human slavery conflicted with the “rights-based theory of the Constitution [that] condemned slavery as a violation of inalienable human rights,”<sup>113</sup> only an unambiguous abolition of human slavery could protect human rights.<sup>114</sup> Abolitionists believed that only “a conception of national institutions with adequate competence and

104 HERMAN BELZ, *A NEW BIRTH OF FREEDOM: THE REPUBLICAN PARTY AND FREEDMEN'S RIGHTS 1861 TO 1866*, at 121 (2000).

105 See, e.g., *id.* at 116 (stating that Republicans [the majority party at the time of the Amendment's passage] defined chattelism as “the holding of property in man”).

106 HOEMANN, *supra* note 98, at 39.

107 *Id.* (emphasis added).

108 See, e.g., BELZ, *supra* note 104, at 121 (stating that “virtually everyone in 1865 understood slavery as chattelism”).

109 See HOEMANN, *supra* note 98, at 39.

110 See, e.g., Akhil Reed Amar, *Remember the Thirteenth*, 10 CONST. COMMENT. 403, 405 (1993) (arguing that slavery treats “human beings with God-given rights” as property); David A.J. Richards, *Abolitionist Political and Constitutional Theory and the Reconstruction Amendments*, 25 LOY. L.A. L. REV. 1187, 1192 (recognizing that “the rights-based theory of the Constitution condemned slavery as a violation of inalienable human rights”).

111 Richards, *supra* note 110, at 1194 (citing James Madison for the proposition that republican constitutionalism rests upon a respect for human rights); see also FEHRENBACHER, *supra* note 103, at 8 (noting that “[i]f words [of the Declaration of Independence] were read for their plainest meaning, slavery was incompatible with the fundamental assumption of the Declaration of Independence—that all men are created equal and endowed by their creator with the inalienable rights of life, liberty, and the pursuit of happiness”).

112 Richards, *supra* note 110, at 1193.

113 *Id.* at 1192.

114 See HOEMANN, *supra* note 98, at 45–47 (noting that the destruction of slavery automatically revived inalienable human rights).

power to ensure that the states, like the national government, respect the human rights of all Americans"<sup>115</sup> could properly abolish slavery.

Public commentary after the passage of the Thirteenth Amendment confirmed that the abolitionists had succeeded in securing human rights throughout the country. William Lloyd Garrison, a central leader of the abolitionist movement, declared that the Amendment had "constitutionalized the Declaration of Independence."<sup>116</sup> The *New York Times* wrote that the "republic would now be 'thoroughly democratic—resting on human rights as its basis.'"<sup>117</sup> Echoing Garrison and the *New York Times*, the *Black New Orleans Tribune* stated that the Amendment abolished all "classes or castes" among humans.<sup>118</sup> These statements confirm that the Amendment abolished human slavery.

Congressional debate also shows that the Thirteenth Amendment abolished slavery. Congress had discussed the evils of slavery long before the proposal of the Amendment.<sup>119</sup> By the time of the Amendment's proposal, Congress had generally accepted the humanity of slaves.<sup>120</sup> Thus, when considering the Amendment, members of Congress did not debate the humanity of the slaves because the members believed the slaves were human beings.<sup>121</sup> Rather, the members debated when, if ever, it was "legitimate" to own humans.

At a minimum, the Amendment abolished chattelism, or property interest in a human being.<sup>122</sup> Describing the Thirteenth Amendment, Rep. Green Clay Smith announced: "We intend to establish the great truth that man cannot hold property in man."<sup>123</sup> Congress concluded that chattelism could never be legitimate. Accordingly, the

115 Richards, *supra* note 110, at 1198.

116 BELZ, *supra* note 104, at 116.

117 *Id.*

118 *Id.*

119 During a debate over discrimination on railroads, Charles Sumner, a prominent abolitionist and Massachusetts senator, declared, "[W]henver slavery is in question, human rights are constantly disregarded . . ." HOEMANN, *supra* note 98, at 106. In another context, Rep. Theodore Weld argued that Congress had the power to abolish slavery in the District of Columbia because the "[p]rotection [of human rights] is the CONSTITUTIONAL RIGHT of every human being under the exclusive legislation of Congress . . ." Richards, *supra* note 110, at 1195 (emphasis omitted).

120 See generally CONG. GLOBE, 38th Cong., 1st Sess. (1866), reprinted in THE RECONSTRUCTION AMENDMENTS' DEBATES: THE LEGISLATIVE HISTORY AND CONTEMPORARY DEBATES IN CONGRESS ON THE 13TH, 14TH, AND 15TH AMENDMENTS 65–69, 75–77, 81–86 (Alfred Avins ed., 1967) (showing that although some congressmen denied the equality of the slaves, no congressman denied the humanity of the slaves).

121 *Id.*

122 BELZ, *supra* note 104, at 116.

123 *Id.* at 117.



Thirteenth Amendment prohibited all *human* slavery.<sup>124</sup> Congress did not limit the scope of the Amendment to black slavery.<sup>125</sup>

The debates over the Civil Rights Act of 1866 and the Fourteenth Amendment further establish that the Thirteenth Amendment banned chattelism.<sup>126</sup> Believing that the Thirteenth Amendment abolished chattelism *and* guaranteed basic human rights, several congressmen moved to pass civil rights legislation under the authority of the Thirteenth Amendment.<sup>127</sup> Other congressmen disagreed with that expansive interpretation,<sup>128</sup> believing that the Thirteenth Amendment secured only “the right not to be held in bondage.”<sup>129</sup> These congressmen argued that “slavery was defined as chattelism rather than as a denial of all political and civil rights.”<sup>130</sup> To protect civil rights, claimed these congressmen, the country would have to pass a second amendment, the Fourteenth.<sup>131</sup> Therefore, even congressmen restricting the Thirteenth Amendment to its narrowist interpretation agreed that the Amendment prohibited property ownership of humans.<sup>132</sup> The Thirteenth Amendment established that no human being can be enslaved.

Jurisprudence confirms the abolition of chattelism by the Thirteenth Amendment. In the *Slaughter-House Cases*,<sup>133</sup> the U.S. Supreme Court held that the Amendment abolished *human* slavery.<sup>134</sup> The Court described the Amendment as the “grand yet simple declaration

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124 *Slaughter-House Cases*, 83 U.S. (16 Wall.) 36, 69 (1872).

125 See *infra* notes 133–38 and accompanying text.

126 See BELZ, *supra* note 104, at 124.

127 See *id.* at 116–20.

128 See RAOUL BERGER, *THE FOURTEENTH AMENDMENT AND THE BILL OF RIGHTS* 20–21 (1989).

129 BELZ, *supra* note 104, at 124.

130 *Id.*

131 See BERGER, *supra* note 128, at 20; see also Richard M. Lebovitz, *The Accordion of the Thirteenth Amendment: Quasi-Persons and the Right of Self-Interest*, 14 ST. THOMAS L. REV. 561, 564–65 (2002) (arguing that the Thirteenth Amendment protects something less than full personhood because African Americans “were made full persons by separate legislation—the Fourteenth, not Thirteenth Amendment”).

132 See BELZ, *supra* note 104, at 166.

133 83 U.S. (16 Wall.) 36 (1872).

134 *Id.* at 69. The Court further strengthened the fact that the Thirteenth Amendment applied to human beings rather than only “citizens” or “persons” in its discussion of the meaning of “involuntary servitude.” The Court held that the word “involuntary” “can only apply to human beings.” *Id.* It would almost defy common sense to argue that Congress intended the abolition of a lesser evil, involuntary servitude, to apply to all human beings but intended the abolition of the greater evil, slavery, to apply only to *select* human beings.

of the personal freedom of all the human race.”<sup>135</sup> Similarly, in the *Civil Rights Cases*, the Court referred to the Amendment as “an absolute declaration that slavery or involuntary servitude shall not exist in any part of the United States.”<sup>136</sup> Regarding the claim that the Amendment abolished African-American slavery, the Court stated that the Amendment “forbids any other kind of slavery, now or hereafter.”<sup>137</sup> Public commentary, congressional debate, and Supreme Court jurisprudence confirm that the Thirteenth Amendment abolishes slavery of *all* human beings.<sup>138</sup>

Some may argue that the framers of the Amendment intended the term “human being” to be defined by law rather than by science. In other words, a “human being” would refer to a select class of human beings rather than to all human beings.<sup>139</sup> Those accepting this idea would argue that the framers intended the term “human being” to include only post-natal human beings. For example, they might propose that the framers defined “human being” as “a post-natal member of the species *homo sapiens*.” According to that definition, the Thirteenth Amendment would prohibit ownership of post-natal human beings but would allow ownership of pre-natal human beings. Thus, ownership of human embryos would not violate the Thirteenth Amendment.

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135 *Id.*

136 *Jones v. Alfred H. Mayer Co.*, 392 U.S. 409, 438 (1968) (quoting *Civil Rights Cases*, 109 U.S. 3, 20 (1883)).

137 *Slaughter-House Cases*, 83 U.S. (16 Wall.) at 72.

138 That the framers understood the Amendment to abolish human slavery is widely, if not universally, accepted. *See, e.g.*, Amar, *supra* note 110, at 405–06 (assuming without discussion that the Thirteenth Amendment freed human beings from slavery); McConnell, *supra* note 99, at 211–12 (accepting without debate the proposition that the framers intended the Thirteenth Amendment to “abolish . . . legal ownership of any human being”); James Gray Pope, *The Thirteenth Amendment Versus the Commerce Clause: Labor and the Shaping of American Constitutional Law, 1921–1957*, 102 COLUM. L. REV. 1, 22 (2002) (accepting without debate that the Thirteenth Amendment prohibits one from possessing “any property in a human being” (quoting Winter S. Martin, A Memorandum on the Substitute Bill S. 2497, Injunctions in Labor Disputes, S. DOC. NO. 71-327, at 2, 13 (1931))); *see also Slaughter-House Cases*, 83 U.S. at 69 (describing the Thirteenth Amendment as the “grand yet simple declaration of the personal freedom of all the human race within the jurisdiction of this government”). *But see* Burk, *supra* note 60, at 1656 (stating that because the Thirteenth Amendment protects “persons,” human embryos may be excluded from the Amendment’s protection).

139 Proponents of this idea would argue that just as law could expand the definition of person to include corporations, the law could limit the definition of “human being” to *post-natal* human beings.

Such an argument is insupportable for two reasons. First, history provides no support for the argument that the framers intended to define "human being" as post-natal human beings. No relevant sources—neither public commentary, congressional debates, nor federal jurisprudence—suggest that the framers determined to alter the definition of human being from its scientific meaning. Even those claiming that the Thirteenth Amendment does not apply to human embryos do not argue that it is inapplicable because embryos are not human beings.<sup>140</sup> Rather, those commentators contend that the Thirteenth Amendment applies not to human beings but to persons.<sup>141</sup>

Second, historical sources show that the framers understood "human being" to include pre-natal human beings. The 1800s introduced a period of increased awareness about the physiological processes of the female body, particularly the reproductive process.<sup>142</sup> The literature of the day reveals that the medical community and the general public believed the unborn child to be a human being. That belief arose from "a new understanding of fetal development as continuous from the moment of conception."<sup>143</sup> Both reproductive liter-

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140 See generally Lebovitz, *supra* note 131; Matthew R. Pahl, Note, *It Takes Two, Baby: Fathers, the Tort of Conversion, and Its Application to the Abortion of Pre-Viability Fetuses*, 24 WHITTIER L. REV. 221, 231 (2002). But see Rachel E. Fishman, Note, *Patenting Human Beings: Do Sub-Human Creatures Deserve Constitutional Protection?*, 15 AM. J.L. & MED. 461, 474–75 (1989) (conceding that the Thirteenth Amendment applies to human beings but arguing that the meaning of "human being" is no longer clear).

141 See Burk, *supra* note 60, at 1656 (stating that "[e]mbryos may very well not fit the Thirteenth . . . Amendment concept of 'persons'"); Nicolas P. Terry, "Alas! Poor Yorick," *I Knew Him Ex Utero: The Regulation of Embryo and Fetal Experimentation and Disposal in England and the United States*, 39 VAND. L. REV. 419, 465–66 (1986) (arguing that the Thirteenth Amendment serves to protect legal personhood); Pahl, *supra* note 140, at 231–32 (considering the personhood of the embryo to determine whether the Thirteenth Amendment protects embryos); Russell H. Walker, Note, *Patent Law—Should Genetically Engineered Human Beings Be Patentable?*, 22 MEM. ST. U. L. REV. 101, 103 n.14 (stating that a human being may be patentable under the Thirteenth Amendment because "it is less than clear that a human being [is a person]"); see also George J. Annas, *Of Monkeys, Man, and Oysters*, 17 HASTINGS CTR. REP., Aug. 1987, at 20, 22 (asking, "Since cloned human embryos are not persons protected by the Constitution . . . , could a particularly 'novel' and 'useful' human embryo be patented, cloned, and sold?"); Andrew Koppelman, *Forced Labor: A Thirteenth Amendment Defense of Abortion*, 84 NW. U. L. REV. 480, 515–18 (1990) (arguing that the Thirteenth Amendment does not apply to fetuses because they cannot be proven to be persons).

142 See generally JANET FARRELL BRODIE, *CONTRACEPTION AND ABORTION IN NINETEENTH CENTURY AMERICA* (1994) (detailing the history of reproductive enlightenment that occurred during the nineteenth century).

143 See Mary Krane Derr, Introduction to "MAN'S INHUMANITY TO WOMAN, MAKES COUNTLESS INFANTS DIE": THE EARLY FEMINIST CASE AGAINST ABORTION ii (Mary Krane Derr ed., 1991).

ature and abortion commentary describe the unborn child as a human being.

In 1853 Dr. Stephen Tracy wrote in his book *The Mother and Her Offspring*, that a human being's life "commenced at the time of the formation of the embryonic cell—at the moment of conception."<sup>144</sup> Two years later, in 1855, Dr. David Humphreys Storer instructed Harvard's Medical College on the humanity of the embryo, describing the embryo as "a human being" from "[t]he moment an embryo enters the uterus a microscopic speck."<sup>145</sup> In 1859, Dr. Horatio R. Storer, a professor at Berkshire Medical College, wrote that the embryo is "from the very outset, a human being alive, however early its stage of development, and existing independently of its mother."<sup>146</sup> Because the embryo is a human being, Storer continued, the embryo has "however undeveloped . . . an intellectual, moral, and spiritual nature, the inalienable attribute of humanity."<sup>147</sup> The medical profession agreed that human life begins at conception.

The medical profession not only agreed on the humanity of the embryo but also communicated that belief to the general public. As noted above, the nineteenth century welcomed a period of reproductive enlightenment, particularly among women. Female gynecology once considered taboo became the topic of public lectures and laymen's texts.<sup>148</sup> By the mid-nineteenth century, works on the female reproductive system were "widely available" from "the local newsstand, bookstore, stationers, or from peddlers and agents, or by mail order."<sup>149</sup>

Perhaps the nineteenth century's most renowned lecturer on the female reproductive system,<sup>150</sup> Dr. Frederick Hollick, in his book *Matron's Manual of Midwifery*, referred to the unborn child as a human being and stated that the child's life begins at conception.<sup>151</sup> In her

144 STEPHEN TRACY, *THE MOTHER AND HER OFFSPRING* 109 (1853).

145 David Humphreys Storer, An Introductory Lecture Before the Medical Class of 1855–56 of Harvard University (Nov. 7, 1855), *reprinted in part in* D. Humphreys Storer, *Two Frequent Causes of Uterine Disease*, 6 J. GYNECOLOGICAL SOC'Y OF BOSTON 194, 199 (1872).

146 Horatio R. Storer, *Criminal Abortion*, 3 N.-AM. MEDICO-CHIRURGICAL REV. 64, 69 (1859).

147 *Id.* at 72.

148 *See generally* BRODIE, *supra* note 142, at 87–135 (describing how the topic of sexual reproduction changed from a private to a public subject).

149 *Id.* at 180.

150 *See* BRODIE, *supra* note 142, at 112–13.

151 FREDERICK HOLLICK, *THE MATRON'S MANUAL OF MIDWIFERY AND THE DISEASES OF WOMEN DURING PREGNANCY AND IN CHILD BED* 55–57, 61 (1848), *reprinted in* "MAN'S

book on reproductive physiology, Dr. Alice Bunker Stockham wrote that conception created a new human being:

When the female germ and male sperm unite, then is the inception of a new life; all that goes to make up a human being—body, mind and spirit, must be contained in embryo within this minute organism. *Life must be present from the very moment of conception.* If there was not life there could not be conception. At what other period of a human being's existence, either pre-natal or post-natal, could the union of soul and body take place?<sup>152</sup>

The commentary on abortion also demonstrates a belief in the humanity of the unborn child. In 1839, Hugh Lenox Lodge, the chair of obstetrics at the University of Pennsylvania Medical School, condemned abortion because he believed embryos possessed the characteristics of human beings.<sup>153</sup> In 1855, David Humphreys Storer, the first professor of obstetrics at Harvard Medical School, called abortion the destruction of a life, stating that a woman's abortion "destroy[s] the life within her."<sup>154</sup> From the leadership of these two men grew a movement by the American Medical Association (AMA) to criminalize abortion,<sup>155</sup> or, as the physicians described it, "antenatal infanticide."<sup>156</sup>

In 1859, the AMA issued a *Report on Criminal Abortion*<sup>157</sup> to address "the slaughter of countless children" perpetrated by widespread abortion in the U.S.<sup>158</sup> According to the AMA, because the embryo is a human life "at every period of gestation," physicians could not condone abortion without violating their calling to save human lives.<sup>159</sup> The AMA stated, "[W]e hold it to be 'a thing deserving all hate and detestation, that a man in his very originall, whiles he is framed, whiles he is enlived, should be put to death under the very hands, and in the

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INHUMANITY TO WOMAN, MAKES COUNTLESS INFANTS DIE": THE EARLY FEMINIST CASE AGAINST ABORTION 6–8 (Mary Krane Derr ed., 1991).

152 ALICE BUNKER STOCKHAM, TOKOLOGY: A BOOK FOR EVERY WOMAN 246 (rev. ed. 1887).

153 BRODIE, *supra* note 142, at 266.

154 *Id.* at 266–67.

155 *See id.* at 267.

156 *Id.* at 270.

157 In 1857, at its meeting in Nashville, the AMA appointed a committee to draft a report on abortion. Horatio R. Storer, *Criminal Abortion*, 3 N. AM. MEDICO-CHIRURGICAL REV. 1033, 1045 (1859). In 1859, the committee's findings and conclusions were read at the AMA's convention in Louisville and were later published in the *Transactions of the American Medical Association*.

158 AM. MED. ASS'N, REPORT ON CRIMINAL ABORTION 4 (1859).

159 *Id.* at 5.

shop of, Nature.’”<sup>160</sup> Recognizing the embryo’s humanity, the AMA called for a legislative end to abortion, the “wanton and murderous destruction of [a] child.”<sup>161</sup> With that call, “[f]or the rest of the century, under the aegis of the AMA, physicians became the most single visible single group seeking to tighten the laws against abortion.”<sup>162</sup>

In pursuit of such legislation, the AMA sent a Memorial to each state’s governor and legislature, stating that abortion was “the intentional destruction of a child within its parent; and physicians are now agreed, from actual and various proof, that *the child is alive from the moment of conception.*”<sup>163</sup> The Memorial then noted the “duty of the American Medical Association, . . . publicly to enter an earnest and solemn protest against such unwarrantable destruction of human life” and called upon the state governor and legislators to criminalize abortion.<sup>164</sup> With each Memorial, the AMA included a series of articles on criminalizing abortion. The articles were written by Dr. Horatio R. Storer and published in the in the *North-American Medico-Chirurgical Review*.<sup>165</sup> The AMA sent similar materials to state medical societies.<sup>166</sup> Thereafter, nearly every state and territory enacted legislation protecting the embryo from the moment of conception.<sup>167</sup>

With those enactments, the medical profession, in its own words, had successfully persevered in “the grand and noble calling we profess,—the saving of human life.”<sup>168</sup> More explicitly, Dr. Storer wrote that by encouraging the protection of unborn human beings, the medical profession had remained true to “‘its mighty and responsible office of shutting the great gates of human death.’”<sup>169</sup> The actions and publications of the AMA show that the profession’s opposition to abortion arose primarily from “a concern for the unborn child and

160 *Id.*

161 *Id.*; see also *Bibliographical Notices: Professor Storer’s Introductory*, 53 BOSTON MED. & SURG. J. 409, 410 (1856) (calling abortion a “horrible *intra-uterine murder*”) (discussing D. Humphreys Storer, An Introductory Lecture Before the Medical Class of 1855–56 of Harvard University (Nov. 7, 1855)).

162 BRODIE, *supra* note 142, at 267.

163 FREDERICK N. DYER, CHAMPION OF WOMEN AND THE UNBORN: HORATIO ROBINSON STORER, M.D. 161 (1999) (quoting the Memorial) (emphasis added).

164 *Id.*

165 *Id.*

166 *Id.*

167 Frederick N. Dyer, *The Lecture That Started the Successful “Physicians” Crusade Against Abortion*, at <http://www.abortionessay.com/files/humphreys.html> (last visited Mar. 31, 2003).

168 Storer, *supra* note 157, at 1045 & n.† (reprinting the resolutions adopted by the AMA as appendices to the committee’s report).

169 *Id.* at 1046.

not . . . primarily a concern for the dangers to the woman of abortion, elimination of irregular practitioners, enforcing gender rules, and/or preventing an increase in the proportion of Catholic immigrants in the population.”<sup>170</sup>

Not only the AMA but also many other individuals and organizations advocated for the criminalization of abortion to protect unborn children.<sup>171</sup> As Janet Farrell Brodie noted in her book *Contraception and Abortion in Nineteenth-Century America*: “No campaign that succeeds in changing the laws of almost every state in the union can be attributed solely to one individual. . . . Physicians and social purity reformers won support from legislators, judges, government officials, academics, and the public.”<sup>172</sup> The passage of legislation criminalizing abortion, particularly in response to the AMA’s campaign, demonstrates that in the 1800s the national public regarded the embryo as a human being.

The nineteenth-century feminist movement also strongly opposed abortion.<sup>173</sup> Feminist opposition to abortion rooted itself in the new understanding of human life as existing from the moment of conception. Feminists opposed abortion because it ended a human being’s life, but they favored contraception because it merely prevented the creation of a human being. Dr. Stockham wrote, “There may be no harm in *preventing* the conception of a life, but once conceived it should not be deprived of its existence.”<sup>174</sup> She wrote that because abortion deprived a human being of its life,<sup>175</sup> the remedy for unwanted pregnancies was “in the prevention of pregnancy, not in producing abortion.”<sup>176</sup>

Nineteenth-century feminist terminology for abortion reveals a belief in the humanity of the unborn child. Feminists commonly referred to abortion as “child murder,” “infanticide,” and “ante-natal murder.”<sup>177</sup> Susan B. Anthony, the woman likely most identified with the feminist movement,<sup>178</sup> called abortion “child-murder.”<sup>179</sup> Sisters Victoria Woodhull and Tennessee Claflin, two of the most outspoken

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170 DYER, *supra* note 163, at 113.

171 See BRODIE, *supra* note 142, at 274.

172 *Id.*

173 Derr, *supra* note 143, at i.

174 STOCKHAM, *supra* note 152, at 247.

175 *Id.* at 246.

176 *Id.* at 250 (emphasis omitted).

177 Derr, *supra* note 143, at ii.

178 Mary Krane Derr, *Susan B. Anthony*, in “MAN’S INHUMANITY TO WOMAN, MAKES COUNTLESS INFANTS DIE”: THE EARLY FEMINIST CASE AGAINST ABORTION 23, 23 (Mary Krane Derr ed., 1991).

feminists of the day,<sup>180</sup> believed that a human's life begins at conception.<sup>181</sup> They described abortion as "the slaughter of the innocents" and a murder "more revolting" than infanticide.<sup>182</sup>

Both medical literature and abortion commentary reveal that in 1865 the public believed the human embryo to be a human being. No historical literature shows the framers of the Thirteenth Amendment intended to limit the protection of the Thirteenth Amendment to postnatal human beings. Rather, public commentary, congressional debate, and federal jurisprudence demonstrate that the framers intended the Thirteenth Amendment to abolish castes among human beings. The Thirteenth Amendment prohibits property ownership in human beings. Therefore, because the human embryo is a human being, the Thirteenth Amendment prohibits the ownership of human embryos.

## V. THE PATENTABILITY OF HUMAN EMBRYOS

After determining the status of the human embryo and considering the relevant areas of law, one must then apply that law to determine whether the PTO can constitutionally grant patents on human embryos. As noted earlier, in the landmark decision of *Diamond v. Chakrabarty*, the Court held that genetically-altered, multicellular organisms could be patented.<sup>183</sup> Until *Chakrabarty*, living organisms were not considered patentable.<sup>184</sup> Since *Chakrabarty*, life forms are patent-

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179 Susan B. Anthony, *Marriage and Maternity*, THE REVOLUTION, July 8, 1869, at 4, reprinted in "MAN'S INHUMANITY TO WOMAN, MAKES COUNTLESS INFANTS DIE": THE EARLY FEMINIST CASE AGAINST ABORTION 24 (Mary Krane Derr ed., 1991).

180 The sisters embraced "free love, spiritualism, radical labor politics, suffragism, and free speech." BRODIE, *supra* note 142, at 273. In May 1872, Woodhull announced her candidacy for the American presidency, becoming the first female to run for President. *Id.* She chose abolitionist Frederick Douglass as her vice-presidential running-mate. *Id.*

181 Victoria Woodhull & Tennessee Claflin, *The Slaughter of the Innocents*, WOODHULL & CLAFLIN'S WKLY., June 20, 1874, at 9, reprinted in "MAN'S INHUMANITY TO WOMAN, MAKES COUNTLESS INFANTS DIE": THE EARLY FEMINIST CASE AGAINST ABORTION 37 (Mary Krane Derr ed., 1991).

182 *Id.*

183 447 U.S. 303, 309-10 (1980).

184 As an exception, patents were generally granted to cell lines. In *Moore v. Regents of the University of California*, 793 P.2d 479 (Cal. 1990), the California Supreme Court stated, "Human cell lines are patentable because '[l]ong term adaptation and growth of human tissues and cells in culture is difficult—often considered an art.'" *Id.* at 492-93 (quoting U.S. Congress, Office of Technology Assessment, *New Developments in Biotechnology: Ownership of Human Tissues and Cells* 33 (1987)).



able if created by genetic or artificial manipulation.<sup>185</sup> The *Chakrabarty* Court stated that “anything under the sun that is made by man” can be patented.<sup>186</sup>

With those words, the Court made an absolute statement, presumably exempting nothing. Human beings would seem to fall within the Court’s holding. Human embryos can be man-made through genetic manipulation.<sup>187</sup> Increasingly, embryologists manipulate embryos by adding or removing genes.<sup>188</sup> Many people fear that parents will soon be able to create “perfect” babies through specific embryo creation.<sup>189</sup> Each of those specifically-created embryos would seemingly satisfy the *Chakrabarty* requirements for patentability.

Although the Court used absolutist language, the PTO found an exemption.<sup>190</sup> In 1987, the PTO stated that “[a] claim directed to or including within its scope a human being will not be considered to be patentable subject matter” because “[t]he grant of a limited, but exclusive property right in a human being is prohibited by the Constitution.”<sup>191</sup> The PTO did not state its grounds for concluding that the Constitution forbids granting such patents.<sup>192</sup> Commentators have

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185 Mark Jagels, Note, *Dr. Moreau Has Left the Island: Dealing with Human-Animal Patents in the 21st Century*, 23 T. JEFFERSON L. REV. 115, 128 (2000).

186 See *Chakrabarty*, 447 U.S. at 309 (quoting Committee Reports on the Patent Act of 1952, S. REP. NO. 82-1979, at 5 (1952); H.R. REP. NO. 82-1923, at 6 (1952)).

187 See, e.g., Paul Hanna, Note, *Recognizing the Need for Uniform International Regulation of Developing Biotechnology: A Focus on Genetic Experimentation*, 24 LOY. L.A. INT’L & COMP. L. REV. 87, 91 (2002).

188 See, e.g., May Mon Post, Note, *Human Cloning: New Hope, New Implications, New Challenges*, 15 TEMP. INT’L & COMP. L.J. 171, 184 (2001).

189 Hanna, *supra* note 187, at 94; see also Raymond R. Coletta, *Biotechnology and the Creation of Ethics*, 32 MCGEORGE L. REV. 89, 98–99 (2000) (discussing the ethical problems created by gene manipulation).

190 See Kevin D. DeBré, Note, *Patents on People and the U.S. Constitution: Creating Slaves or Enslaving Science*, 16 HASTINGS CONST. L.Q. 221, 251 & n.177 (1989).

191 U.S. Patent & Trademark Office, *PTO Policy on Patenting of Animals* (Apr. 7, 1987), reprinted in U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, *NEW DEVELOPMENTS IN BIOTECHNOLOGY: PATENTING LIFE* 93 (1990).

192 See *id.* In a recent rejection notice of a patent, the PTO “appears to concede that it has little or no legal authority” to prevent the patenting of human embryos. Zitner, *supra* note 12. Six years ago, Jeremy Rifkin and Stuart Newman submitted to the PTO a patent application for a “humouse,” an animal-human hybrid. *Id.* In his patent, Newman stated that he could create a humouse by injecting a human embryo with embryonic cells from a mouse. *Id.* Rifkin and Newman submitted the patent to force the government to establish a firm position on the patenting of human embryos. *Id.* At first the PTO rejected the application because it “embraces a human being,” stating that human beings cannot be patented. *Id.* When Rifkin and Newman asked the PTO to identify a law prohibiting human embryo patents, the PTO stated that the Thirteenth Amendment prohibited such patents. *Id.* However, in its most

presumed that the PTO based its decision on the Thirteenth Amendment.<sup>193</sup>

Many commentators have criticized the PTO's conclusion,<sup>194</sup> arguing that the PTO decision misinterprets the Thirteenth Amendment.<sup>195</sup> According to such commentators, if an embryo meets the statutory requirements, the PTO should grant a patent right.<sup>196</sup> However, even assuming the satisfaction of the patent requirements, the PTO's position is correct: the Thirteenth Amendment would prohibit the patenting of a human embryo. The Thirteenth Amendment's *prohibition* of slavery would supercede the Patent Clause's *allowance* of patents.

A patent gives its holder a property interest in the patented item.<sup>197</sup> The holder has the exclusive right to make, use, or sell the patented item.<sup>198</sup> He can exclude all others from making, using, or selling the item.<sup>199</sup> This right to exclude others is "the essence of a patent grant."<sup>200</sup> Although the holder receives the exclusive right to make, use, or sell the item, another law may forbid the patent holder from exercising his right of exclusion. In other words, the holder receives the exclusive right to make, use, or sell the item if the law allows the making, using, or selling of such an item.<sup>201</sup> For example, pharmaceutical companies often obtain patents on drugs before having obtained the approval of the Food & Drug Administration (FDA) to sell the drugs.

Some have argued that because a patent does not give its holder the affirmative right to make, use, or sell the patented item, a patent on a human being would not violate the Thirteenth Amendment.<sup>202</sup> After comparing the patenting of pharmaceutical drugs with the patenting of human beings, law professor Dan Burk argued that the pat-

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recent rejection of the humouse application, the PTO did not justify its position with the Thirteenth Amendment. *Id.* Rather, the PTO stated that neither Congress nor the Supreme Court had spoken on the issue of human embryo patents. *Id.* The PTO continued, "In the absence of clear legislative intent and guidance from the courts, it is incumbent on the office to proceed cautiously." *Id.*

193 DeBré, *supra* note 190, at 228.

194 See, e.g., *id. passim* (arguing that granting patent rights in human beings does not violate the Constitution).

195 Burk, *supra* note 60, at 1647-50.

196 *Id.* at 1648.

197 35 U.S.C. § 261 (2000).

198 *Id.* § 154.

199 *Id.*

200 Dawson Chem. Co. v. Rohm & Haas Co., 448 U.S. 176, 215 (1980).

201 Fishman, *supra* note 140, at 468.

202 Burk, *supra* note 60, at 1647-48.

enting of human beings would not violate the Thirteenth Amendment because the right to prevent others from making, using, or selling another human being does not “mean that the patent holder could impress the patented person into servitude or bondage.”<sup>203</sup>

That argument misconstrues the Thirteenth Amendment. First, the argument interprets the Thirteenth Amendment as forbidding forced, physical servitude or bondage. As shown in Part IV, however, the Thirteenth Amendment forbids chattelism, or the holding of property in man. Suppose after the war, a slave owner said to his slaves, “You are still my property; but, I have decided to give you the physical freedom to do as you wish.” Even if a slave owner had granted his slaves such freedom, by retaining ownership of the slaves, the slave owner would violate the Thirteenth Amendment nonetheless.

Yet, Burk argues that the Thirteenth Amendment allows a property right in human beings as long as the exercise of that right does not restrict the physical freedom of the patented human being. While practically it would seem that a human being is not enslaved if his owner cannot require physical servitude, formally, the human being is enslaved because another person owns him.<sup>204</sup> A patent bestows upon the patent holder a property right in the patented invention: the right to exclude others from the manufacture, use, or sale of the invention. Although a patent is the right to exclude, that right is not a property right apart from the invention. According to the Supreme Court, the right to exclude is “the hallmark of a protected property interest” and “one of the most essential sticks in the bundle of rights that are commonly characterized as property.”<sup>205</sup> The “essence of all property” is the right to exclude.<sup>206</sup> Therefore, a patent on a human being bestows a property right in the patented human being.

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203 *Id.* at 1648.

204 Even assuming that the Thirteenth Amendment allows “passive” ownership of human beings, what would be the sense in granting a patent that could *never* be exercised? In the pharmaceutical scenario, the government grants a patent that could be exercised because the Constitution does not forbid the making of drugs. In the human-being scenario, the government grants a patent that cannot be exercised because the Constitution forbids, at a minimum, the “active” ownership of human beings. The Framers almost certainly could not have intended the patent system to grant patents that could *never* be exercised constitutionally.

205 *Coll. Sav. Bank v. Fla. Prepaid Postsecondary Educ. Expense Bd.*, 527 U.S. 666, 673 (1999).

206 *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (stating that “[t]he essence of all property is the right to exclude”); *see also* *Filmtec Corp. v. Allied-Signal Inc.*, 939 F.2d 1568, 1572 (Fed. Cir. 1991) (describing patent rights as “rights *in* an invention” (emphasis added)); *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir.

The right to manufacture would give the patent holder the right to reproduce, or clone, the human being and to exclude others from cloning that human being. Presently, cloning is legal in the United States. Therefore, each human being in the United States presumably "owns" the right to clone himself and to exclude others from cloning himself.<sup>207</sup> A patent in a human being takes that right away from the human being and gives it to the patent holder, thus giving the patent holder ownership in the human being.

The right to use would give the patent holder the right to control the human being's activities and to prevent others from interacting with the human being.<sup>208</sup> Presently, each human being in the United States has the right to control his actions and interaction with others. Each human being has the right to "use" himself as he sees fit and the right to exclude others from using him. As with the right to manufacture, a patent in a human being takes the right to use away from a human being and gives it to the patent holder, thus giving the holder ownership in a human being.

The right to sell would give the patent holder the right to contract out, or sell, the human being and his services.<sup>209</sup> The Thirteenth Amendment forbids the sale of humans without their consent. Therefore, the patent gives a right forbidden by the Thirteenth Amendment. Furthermore, the patent gives the patent holder the right to forbid the patented human being from "selling" himself (i.e., contracting for employment), thus taking the human being's right to "sell" himself and giving it to the patent holder.

Second, Burk's argument does not consider that human beings exist prenatally. Burk does not consider that human embryos are human beings. Presently, the manufacturing, use, and sale of human embryos occurs in the United States.<sup>210</sup> Few states prohibit such actions. Practically, a human embryo patent would give its patent

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1983) (stating that "the right to exclude recognized in a patent is but the essence of the concept of property").

207 Indeed, some commentators have argued that cloning is a fundamental right. See e.g., Lawrence Wu, Note, *Family Planning Through Human Cloning: Is There a Fundamental Right?*, 98 COLUM. L. REV. 1461 (1998) (arguing that cloning is a fundamental right); Note, *Human Cloning and Substantive Due Process*, 111 HARV. L. REV. 2348 (1998) (same).

208 Fishman, *supra* note 140, at 475-76.

209 See Walker, *supra* note 141, at 111.

210 The manufacture, use, and sale of human embryos is not legal for all purposes in all states. See, e.g., FLA. STAT. ANN. § 873.05 (West 2000) (prohibiting sale of embryos); LA. REV. STAT. ANN. § 9:122 (West 2000) (prohibiting the sale of human embryos for any purpose and prohibiting the manufacture and use of embryos any purpose except full development of the human embryo).

holder the right to prevent others from making, using, and selling similar human embryos.

Third, Burk's argument would make a human embryo patent meaningless. In the FDA example mentioned above, although the patent does not give the holder the right to make, use, or sell the drug, the law does give the patent holder the potential to do so. The manufacturing, use, and sale of drugs within the United States is generally legal. Once the FDA approves the drug, the patent holder can make, use, or sell the drug, and, consequently, exercise his patent rights. The manufacturing,<sup>211</sup> use, and sale of human beings is unconstitutional within the United States. Although some states allow the manufacturing, use, and sale of human embryos within their borders, the Thirteenth Amendment expressly prohibits such actions. Therefore, because a human embryo is a human being, a human embryo patent should have no legal use in the United States. Under the Thirteenth Amendment, a human-embryo patent holder would never have an opportunity to exercise his right to prevent others from manufacturing, using, and selling his patented human being.

The Thirteenth Amendment forbids ownership of human beings. A human embryo is a human being. A patent of a human being grants the patent holder ownership of the right to exclusive manufacture, use, and sale of a human being. The rights to manufacture, use, and sell a human being are rights to own a human being. Because a patent in a human being grants ownership of a human being, the patent violates the Thirteenth Amendment. Therefore, because a human embryo is a human being, the Thirteenth Amendment forbids the government from granting patents on human embryos.

#### CONCLUSION

The debate over the proper uses and boundaries of science intensifies increasingly as biotechnology advances into new, unknown frontiers. With recent advancements in cloning and stem-cell research, the patenting of human embryos has been propelled to the forefront of the debate. The public must be careful not to be swept away by the predicted gloom or promise of potential scientific advancements. Before formulating new laws to deal with new technology, legislators, executives, and judges alike should first consider existing law and its possible application to the technology.

Although some have proposed new regulations for the patenting of human embryos, the Constitution has a regulation in place already:

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211 "Manufacturing" alone is legal within the United States. Generally, however, people find it distasteful to refer to making embryos as manufacturing human beings.

the Thirteenth Amendment. Was the patenting of human embryos the specific problem the framers were concerned with when passing the Thirteenth Amendment? No. Is the patenting of human embryos an illustration of the general problem with which the framers were concerned? Yes. Although the framers of the Amendment likely never considered its application to human embryos specifically, the framers did consider its application to human beings generally. To provide human beings protection beyond the immediate problem of black slavery, the framers drafted the Amendment in general terms, with language broad enough to encompass every living human being. Because the Amendment embraces the entire human race, the Amendment applies to the patenting of human embryos. Furthermore, the Amendment's manifest applicability shows that the patenting of human embryos would violate the very principles that animated the passage of the Thirteenth Amendment.

The Patent Clause permits the government to grant a property right in certain things; however, the Thirteenth Amendment prohibits the property ownership in human beings. An embryo is a human being. Therefore, a patent of a human embryo grants a property right a human being. Because the Thirteenth Amendment prohibits the ownership of human beings, the PTO cannot constitutionally grant patents for human embryos.

