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ABANDONED FROZEN EMBRYOS AND EMBRYONIC STEM CELL RESEARCH: SHOULD THERE BE A CONNECTION?

Natalie R. Walz*

Abstract

Many couples that have difficulty conceiving a child have turned to the aid of assisted reproductive technology to try and reproduce. The use of assisted reproductive technology often provides for the creation of multiple embryos at one time. The unused embryos are then frozen and stored for use at a later date. Courts, as well as state governments and the federal government, have been left to determine what legal principles should govern the disposition of the frozen embryos, particularly when the couple fails to enter an agreement or the couple's agreement fails to cover a contingency that has arisen. The present legal framework provides that frozen embryos can properly be considered personal property because the frozen embryos are unique to the individuals and the individuals likely intend to retain the embryo. Accordingly, a bailment relationship is created between the couple and the fertility clinic. However, when the bailment relationship is not established through a disposition agreement, the principle of abandonment will apply because ownership of the frozen embryo has not been transferred to another individual. When a frozen embryo has been abandoned, the fertility clinic may then use the frozen embryo for research purposes, specifically embryonic stem cell research.

INTRODUCTION

Every year, several million Americans discover that they are infertile.¹ Advancements in assisted reproductive technology (“ART”) have given many individuals, who were once unable to reproduce, the chance at

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procreating. The most widely used method of ART is in vitro fertilization ("IVF"). Often, couples that use IVF have more embryos than are necessary for immediate transfer to the woman’s uterus and, therefore, cryopreservation, or freezing, of the embryos is necessary. The process of freezing the embryos for future use creates a gap between conception and implantation that leaves room for various contingencies to occur. When couples no longer need or desire to have the frozen embryos transferred to the woman’s uterus, they are often unable to decide what should be done with the frozen embryos. Accordingly, fertility clinics are holding approximately 400,000 frozen embryos. “In the absence of any consistent, generalized plan, the embryos will continue to stockpile at the current rate of 18.8 percent annually.”

The three most prominent alternatives for disposition of the surplus embryos are destruction, donation for research, or adoption by other infertile couples. Couples that cryopreserve embryos often provide for their disposition through agreements entered into at the time of the creation and freezing of the embryos. Each option for disposition of the embryos raises its own unique issues that a couple must address. Furthermore, additional issues arise when the couple fails to provide an agreement for the disposition of their embryos or the agreement is insufficient to cover the contingency that has arisen.

When failure to provide for the disposition of the embryos occurs, regardless of the reason the failure occurred, IVF clinics and researchers’ interests in using the embryos for research becomes strong. One of the reasons researchers are interested in frozen embryos is for the purpose of conducting embryonic stem cell research. Embryonic stem cell research is

2. See Jill R. Gorny, The Fate of Surplus Cryopreserved Embryos: What is the Superior Alternative for their Disposition?, 37 SUFFOLK U. L. REV. 459, 459 (2004). IVF is a process by which eggs are extracted from a woman’s ovaries and fertilized in a laboratory. The resulting embryos are then either transferred into a woman’s uterus or cryopreserved for future use. Id.

3. Id. at 460.

4. Melinda Troeger, The Legal Status of Frozen Pre-Embryos when a Dispute Arises during Divorce, 18 J. AM. ACAD. MATRIM. LAW. 563, 563 (2003). The figure is based on a survey done in 2003. Research Brief, How Many Frozen Human Embryos are Available for Research?, RAND Law & Health (2003). Of the approximately 400,000 frozen embryos, only about 2.8 percent (about 11,000 embryos) have been designated for research, the majority being designated for future attempts at pregnancy. Id. From the embryos that are designated for research, there is the possibility that about as many as 275 stem cell lines could be created. Id. However, based on previous studies, it is estimated that only about 65 percent of the approximately 11,000 embryos would survive the freeze-and-thaw process, resulting in 7,334 embryos. Id. Of those, about 25 percent (1,834 embryos) would likely be able to survive the initial stages of development to the blastocyst stage and even a smaller number could successfully be converted into embryonic stem cell lines. Id. “For example, researchers at the University of Wisconsin needed 18 blastocysts to create five embryonic stem cell lines, while researchers at The Jones Institute used 40 blastocysts to create three lines.” Id.

5. Gorny, supra note 2, at 460.

6. Id.
The issue of frozen embryo disposition is a developing area of the law and, therefore, courts have had little guidance in rendering their decisions. Accordingly, courts have struggled in determining whether privacy rights, contract rights, or property rights should govern frozen embryo disposition. This paper argues that frozen embryos are property and therefore, property law should govern the disposition of frozen embryos absent an agreement, or where there is a deficiency in a couple’s agreement, with an IVF clinic. According to property law principles, if the disposition of frozen embryos is not provided for in an agreement, the frozen embryos should be considered abandoned and available for use by researchers, including use for embryonic stem cell research.

Section I of this paper discusses the technology involved in the IVF process, cryopreservation, and the basics of stem cell research. Section II addresses the legal framework governing the classification of frozen embryos, including an analysis of present case law, state and federal statutes, and the proposed Model Human Reproductive Technologies and Surrogacy Act. Section III discusses decisional authority over the disposition of frozen embryos and in whom such authority should vest. Section IV of this paper addresses the concepts of property law that should govern the disposition of frozen embryos when there is an absence of an agreement, or a deficiency in a couple’s agreement, specifically the principles of bailment and abandonment. Finally, Section V discusses the ethical considerations surrounding the disposition of frozen embryos and their use for embryonic stem cell research.

I. THE TECHNOLOGY

In the past two decades, thousands of children have been born through ART, specifically IVF. “Tens of thousands of frozen embryos annually are routinely stored in liquid nitrogen canisters, some having been in that state for more than 10 years with no instructions for their use or disposal.”

“Infertility is a disease of the reproductive system, in either a male or
a female, that inhibits the ability to conceive and deliver a child." Approximately one in five couples is infertile in the United States and there are a number of factors, both male and female, that can cause the condition. "Many couples faced with infertility are still unable to become pregnant after first line therapy such as ovulation induction, intrauterine insemination, or reproductive surgery. For these couples, the logical next step is to explore . . . ART." 

The most common form of ART is IVF. IVF begins with the hormonal stimulation of a woman's ovaries to produce multiple eggs. The eggs are then retrieved by laparoscopy or an ultrasound-guided needle aspiration. Once removed, the eggs are placed in a glass dish where a man's sperm is introduced. When the egg is fertilized, the pre-zygote divides until it reaches the four to eight cell stage. The woman then either returns about three days later to have the embryos transferred to her uterus or the embryos are cryopreserved.

Cryopreservation is the "[m]aintenance of the viability of excised tissues or organs at extremely low temperatures." It is a technique that allows embryos to be frozen and stored for later uses. An embryo is cryopreserved by using controlled-rate freezing which slowly cools the embryos in cryoprotectant fluid, an anti-freezing solution, from a person's body temperature down to negative 196°C. Once frozen, the embryos

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12. Id.
15. Georgia Reproductive Specialists, Ovulation Induction, http://www.ivf.com/ovind.html (last visited Jan. 1, 2007) ("Ovulation induction medications, often referred to as fertility drugs, are used to stimulate the follicles [in a woman's ovaries resulting in the production of multiple eggs in one cycle.").
17. Silber, supra note 15.
18. Trainor, supra note 7.
19. Id.
"are placed inside labeled tubes attached to aluminum canes and stored in numbered" containers of liquid nitrogen called dewars.\textsuperscript{24}

Couples that choose to have their embryos frozen have four basic options for disposition of the frozen embryos: "(1) they can donate the embryos for research, (2) they can have the embryos destroyed, (3) they can keep the embryos frozen, or (4) they can give the embryos anonymously to another couple."\textsuperscript{25} Typically, IVF clinics will enter into an agreement with the couple that sets forth the rights of the donors and the couple's decision regarding disposition of any unused frozen embryos.\textsuperscript{26} The agreement usually also provides what events, such as death, divorce, refusal to continue with the program, or termination of the agreement, will trigger the disposition selected by the couple.\textsuperscript{27}

If a couple decides to donate their embryos for research, the embryos that are donated are typically the ones that have been cryopreserved. Researchers are able to use the cryopreserved embryo for stem cell research. A stem cell is a cell that has the ability to self-replicate for long periods by the process of cell division.\textsuperscript{28} Under certain physiologic conditions, or if given the right signals, stem cells have the ability to become mature cells that possess characteristic shapes and specialized functions of cells that make up organs in the human body (e.g., heart cells, skin cells, or nerve cells).\textsuperscript{29} There are two types of stem cells that scientists work with the most: adult stem cells\textsuperscript{30} and embryonic stem cells.\textsuperscript{31} However, regardless of their source, all stems cells "are capable of dividing

\textsuperscript{24} Id.
\textsuperscript{26} Walter, supra note 22, at 938.
\textsuperscript{27} Id. at 938-39.
\textsuperscript{29} Id.
\textsuperscript{30} Id.; "An adult stem cell is an undifferentiated cell found among differentiated cells in a tissue or organ." The National Institutes of Health, Stem Cell Basics, http://stemcells.nih.gov/info/basics/basics4.asp (last visited Jan. 1, 2007). The origin of an adult stem cell in mature tissue is unknown. Id. The purpose of adult stem cells is to maintain homeostasis, a steady state of functioning, within a cell and to replace cells that die because of injury or disease. Id. Therefore, adult stem cells behave differently depending on where they are located in a person's body and are unipotent, "capable of differentiating along only one lineage." Id. At this point in time, there are no isolated adult stem cells that are capable of forming all cells of the body, unlike embryonic stem cells. Id.
and renewing themselves for long periods[,] they are unspecialized[,] and they can give rise to specialized cell types.”

Embryonic stem cells derive from the blastocyst stage of the embryo. A fertilized egg is totipotent, meaning entire, “because it has the potential to generate all the cells and tissue that make up an embryo and that support its development in utero . . . until it produces a mature organism.” The three embryonic germ layers, the mesoderm, endoderm, and ectoderm, are the embryonic source of all the specialized cells of the body. Stem cells that give rise to cells derived from all three embryonic germ layers are called pluripotent. “Embryonic cells hold as much promise as they do because they have not yet differentiated and are accordingly capable of becoming any kind of cell in the human body.”

Many potential uses for embryonic stem cells have been proposed, such as their use in transplant therapy for certain diseases (e.g., Parkinson’s disease, diabetes, traumatic spinal cord injury, heart failure, Duchenne’s muscular dystrophy), to study events in early human development and chromosomal abnormalities, to test candidate therapeutic drugs, to screen potential toxins, and to develop new methods for genetic engineering. However, presently embryonic stem cells have not been actually used for the aforementioned purposes.

As researchers continue to discover different ways in which embryonic stem cell research may benefit others, courts, state governments, and the federal government are also attempting to determine what legal principles

32. National Institutes of Health, Stem Cell Basics, http://stemcells.nih.gov/info/basics/basics2.asp (last visited Jan. 1, 2007). “When cells replicate themselves many times over it is called proliferation.” Other cells in a person’s body, such as nerve cells, are not capable of proliferation.

A stem cell does not have any tissue-specific structures that allow it to perform specialized functions; a stem cell cannot work with surrounding nerve cells which are capable themselves of firing electrochemical signals to other cells to make a person’s body move or speak. “When unspecialized stem cells give rise to specialized cells, the process is called differentiation.” Many questions about cell differentiation still exist, but it has typically been seen that adult stem cells generate the cell types of the tissue that they are in. Id.

33. Committee on the Biological and Biomedical Applications of Stem Cell Research et al., STEM CELLS AND THE FUTURE OF REGENERATIVE MEDICINE 31 (Nat’l Acad. Press 2002); “The blastocyst is the stage of embryonic development prior to implantation in the uterine wall.” Winslow, supra note 28, at 5; Embryonic stem cells are not derived from an egg that has been fertilized in a woman’s body, but rather are derived from embryos that have been developed for the purpose of in vitro fertilization. National Institutes of Health, supra note 32.

34. Winslow, supra note 28, at 1.

35. Id.

36. Id. (Pluripotent cells have the ability to give rise to any type of cell).


are appropriate to address this novel, but expanding, area of research.

II. LEGAL FRAMEWORK GOVERNING THE CLASSIFICATION OF FROZEN EMBRYOS

"As science races ahead, it leaves in its trail mind-numbing ethical and legal questions." Courts have been provided little guidance in determining what principles of law should govern the classification of frozen embryos.40 There is no federal law governing the classification of frozen embryos and "[o]nly three states have enacted legislation concerning the disposition of frozen embryos:" Louisiana, Florida, and New Hampshire.41 Each of these state statutes reaches a different conclusion as to the classification of frozen embryos. Law students from the University of Iowa Law School drafted a Model Act regarding the classification and disposition of frozen embryos; however, no state has adopted the Model Act. Of the few courts that have addressed the issue of the classification of frozen embryos, no consensus has been reached. Presently, the legal framework that exists for the classification of frozen embryos is to either afford the frozen embryos privacy rights by attributing to them a special status, consider the frozen embryos a matter to be governed by the principles of contract law,42 or to give the frozen embryos the status of property.43

A. FROZEN EMBRYOS AS THE SUBJECT OF PRIVACY RIGHTS

An individual's right to privacy is not specifically enumerated in the United States Constitution or any state constitution.44 However, an individual's right to privacy developed in order to "protect individuals from unwarranted governmental intrusion into matters such as . . . [those] involving intimate questions of personal and family concern."45 Courts

41. Trainor, supra note 7.
42. Id. None of these state courts have specifically addressed the issue of embryo disposition under these statutes. New Hampshire’s statutes regarding disposition of embryos focus less on the characterization of the embryo and more on the restrictions of the embryo’s use. See N.H. Rev. Stat. Ann. §§ 168-B:13-15, 168-B.18 (2006). The New Hampshire statutes require that an embryo needs to be cryopreserved within 14 days of post-fertilization and, if an embryo has been donated for research, it cannot subsequently be transferred to a woman’s uterus. Id. Couples are also required to undergo medical evaluations and counseling. Id.
45. Davis v. Davis, 842 S.W.2d 588, 598 (Tenn. 1992).
46. Id. at 600.
have found that a fundamental attribute of the right to privacy is procreational autonomy and, therefore, some courts have held that privacy rights should govern the disposition of frozen embryos.  

The issue before the Tennessee Supreme Court in *Davis v. Davis* was "whether a divorced woman could use the frozen embryos that she and her husband created [during their marriage] either to become pregnant or to donate to another couple" in the absence of an agreement between her and her ex-husband regarding the disposition of the frozen embryos. Because there was no agreement, the *Davis* court based its decision on an individual's right to privacy, namely, the right to procreate and the right to avoid procreation. Accordingly, the *Davis* court held that, based on the facts of the instant case, the ex-husband's interest in not having children that would not live with both biological parents was greater than his ex-wife's interest in donating the frozen embryos. For those reasons, the *Davis* court awarded custody of the frozen embryos to the ex-husband.

In reaching its decision to dispose of the frozen embryos according to an individual's privacy rights, the *Davis* court also addressed whether the frozen embryos should be classified as a "person" or "property," or instead whether disposition of the frozen embryos should be governed by contract principles. In examining whether a frozen embryo should be viewed as a person, the *Davis* court relied on Tennessee's Wrongful Death Act. Tennessee's Wrongful Death Act does not recognize a fetus as a person, and, therefore, the *Davis* court concluded that a frozen embryo could not be recognized as a person. In addressing whether the frozen embryo should be considered property, the *Davis* court rejected the intermediate appellate court's reliance on the Uniform Anatomical Gift Act in holding that frozen embryos are not property.

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48. *Davis*, 842 S.W.2d 588.
49. Forster, *supra* note 25, at 769; *Davis*, 842 S.W.2d at 590.
50. *Davis*, 842 S.W.2d at 590.
51. *Id.* at 598, 600-01, 603. The United States Supreme Court in *Eisenstadt*, stated: "If the right of privacy means anything, it is the right of the individual, married or single, to be free from unwarranted governmental intrusion into matters so fundamentally affecting a person as the decision whether to bear or beget a child." *Eisenstadt* v. *Baird*, 405 U.S. 438, 453 (1972) (emphasis in original). *See also* *Carey* v. *Population Serv's Int'l*, 431 U.S. 678, 685 (1977) (finding decision whether to bear or beget child fundamental to individual autonomy); *Skinner* v. *Oklahoma*, 316 U.S. 535 (1942) (holding statute authorizing sterilization of certain criminals invalid because right to procreate a basic civil right of man).
52. *Davis*, 842 S.W.2d at 604 (The *Davis* court noted, however, that one progenitor's desire to avoid procreation does not create an "automatic veto" regarding the other progenitor's desire to utilize the frozen embryos. The parties' interests in using and not using the frozen embryos must be weighed).
53. *Id.*
54. *Id.* at 594-98.
55. *Id.*
56. *Id.*
embryos are property. The Davis court found that frozen embryos are different than other human organs and tissue governed by the Uniform Anatomical Gift Act because they hold the potential for developing into independent human life. However, the Davis court also found that frozen embryos belong in an interim category, entitled to special respect, because of their potential for human life. Therefore, according to the Davis court, while the frozen embryos were not persons under the law and the progenitors did not have a true property interest in the frozen embryos, the progenitors did have decision-making authority concerning the disposition of the frozen embryos.

Accordingly, the Davis court discussed whether contract law should govern frozen embryo disposition. The Davis court stated that agreements between a couple and an IVF clinic regarding the disposition of untransferred frozen embryos in the event of contingencies should be presumed valid and enforceable. Further, no other individual or entity other than the progenitors should have decision-making authority over the frozen embryos because he/she/it does not bear the consequences of the decisions in the same way the progenitors do. Therefore, had a contract existed between the parties in Davis v. Davis, the Tennessee Supreme Court suggests that the contract would have governed disposition of the frozen embryos.

B. FROZEN EMBRYO AS A PERSON

In Miller v. American Infertility Group, the couple alleged that their IVF treatment from a fertility clinic produced nine viable embryos that were to be frozen and stored for later implantation in the woman’s uterus. They further alleged that at least one of the embryos developed into a blastocyst and that an employee or agent of the fertility clinic wrongfully destroyed the embryo. The couple sued the fertility clinic under Illinois’ Wrongful Death Act.

The Miller court held that an embryo is a human being within the
meaning of the Illinois Wrongful Death Act.\textsuperscript{57} The Wrongful Death Act does not define the meaning of a human being.\textsuperscript{68} However, the \textit{Miller} court stated that in order to be consistent with Illinois' Abortion Law, which states that life begins at conception, the definition of a human being in the Wrongful Death Act should be the same.\textsuperscript{69} "Philosophers and theologians may debate, but there is no doubt in the mind of the Illinois Legislature when life begins. It begins at conception."\textsuperscript{70}

The \textit{Miller} court did not specifically address the issue of frozen embryo disposition and Illinois does not have a statute specifically addressing the disposition of frozen embryos. However, it can be inferred from the \textit{Miller} court's willingness to develop a consistent definition throughout its laws of what constitutes a human being, that if faced with the issue of whether a frozen embryo can be discarded or donated for research, Illinois courts will hold that such disposition is in opposition to the rights given born human beings and, therefore, in violation of the law.

Louisiana's statute regarding disposition of embryos is in accordance with the \textit{Miller} court's finding that an embryo deserves special status. In Louisiana, by statute, an embryo is given the status of a juridical person\textsuperscript{71} and, therefore, cannot be produced solely for research purposes\textsuperscript{72} and cannot be intentionally destroyed.\textsuperscript{73} The embryo is not considered the property of the IVF clinic or the physician. If the identity of the individuals who donated the gametes to produce the embryo is not known, the IVF clinic or the physician is considered a temporary guardian of the embryo until adoptive implantation can occur.\textsuperscript{74}

C. CONTRACTS BETWEEN PROGENITORS GOVERNING FROZEN EMBRYOS\textsuperscript{75}

"Our legal system places great weight on assuring that contracts will be enforced as written. Private agreements allow the parties to specify the terms of their interaction with a degree of detail statutory law could never supply; they also allow parties to negotiate around the uncertainty created

\textsuperscript{67} Id. at pg. 6.
\textsuperscript{68} Id. at pg. 4-6.
\textsuperscript{69} Id.
\textsuperscript{70} Id. at pg. 6.
\textsuperscript{72} Id. § 9:122
\textsuperscript{73} Id. § 9:129
\textsuperscript{74} Id. § 9:126
\textsuperscript{75} Litowitz addressed cryopreservation agreements between parties where only one of the parties is a progenitor. Litowitz v. Litowitz, 48 P.3d 261 (Wash. 2002). The court in \textit{Litowitz} found that the non-progenitor's claim of right to any of the frozen embryos rested solely in contract and, therefore, the court based its decision on the contractual rights of the parties under the cryopreservation agreement. \textit{Id.} at 270–71. Accordingly, the court deemed it unnecessary to engage in a discussion regarding whether the frozen embryos should be considered "persons." \textit{Id.} at 271.
by new developments, changing mores, or conflicting legal interpretations.” However, despite the weight our legal system puts in contracts, contracts have never been untouchable. Contracts between family members “have been suspect altogether.” But some courts have held that contracts, which in this instance are typically between family members, should govern the disposition of frozen embryos.

In Kass, five embryos that were created during the couple’s marriage were being stored at an IVF bank. The couple subsequently divorced and a dispute pertaining to the custody of the frozen embryos arose. Ms. Kass argued that she should have sole custody over the embryos because the embryos were her last opportunity to have biological children. Mr. Kass argued that Ms. Kass should not have custody of the embryos because unwanted fatherhood should not be imposed on him unilaterally. The informed consent form signed between the parties authorized retrieval of the eggs, the cryopreservation of the unused eggs, and the donation of the unused embryos to the IVF clinic for research should a dispute about disposition of the unused embryos arise.

The New York Court of Appeals, as opposed to the Tennessee Supreme Court in Davis, held that the disposition of frozen embryos does not trigger an individual’s right to privacy, but rather, the mutual intent of the parties, as evidenced through the disposition agreement, should control. In Kass, that meant donation to the IVF clinic for research. The Kass court reasoned that “[a]greements between progenitors, or gamete donors, regarding disposition of their pre-zygotes should generally be presumed valid and binding and enforced in any dispute between them.” The Kass court noted that it is better for the progenitors, not the states or the courts, to make such an important life decision.

In reaching its decision in Kass, the New York Court of Appeals did not affirmatively hold that frozen embryos should be considered property, but it did suggest a similarity to property law with the progenitors holding a bundle of rights in the embryos that can be exercised through joint

77. Id. at 6–7.
78. Id. at 7.
79. Kass, 696 N.E.2d at 177.
80. Id.
81. Id.
82. Id. at 177–78.
83. Id. at 176–77.
84. Id. at 179, 181. The court also summarily dismissed any notion that the frozen embryos should be considered “persons.” Id. at 179.
85. Id. at 181.
86. Id. at 180.
87. Id.
disposition contracts. 88

Despite the Davis and Kass courts' seeming approval of frozen embryo disposition contracts, the Massachusetts Supreme Court in A.Z. v. B.Z. showed disfavor of frozen embryo disposition contracts and refused to enforce the couple’s agreement when the agreement infringed on an individual's privacy right to decide whether to enter a familial relationship. 89 In A.Z. v. B.Z., a couple underwent multiple IVF treatments over the course of a 17-year marriage from which some embryos were cryopreserved. 90 The husband and wife both signed consent forms for each procedure detailing their instructions for disposition of the frozen embryos in the event of separation. 91 The consent form gave the wife use of the frozen embryos for implantation upon separation. 92 However, the husband and wife allegedly signed the consent form out of the presence of each other, with only the wife completing the disposition language. 93 After the separation, the wife wanted to thaw and implant the embryos for her own use and the husband sought an injunction to prevent her from doing so. 94

This was the first reported case regarding the disposition of frozen embryos where a consent form signed between the couple and the IVF clinic provided that upon separation of the couple, the frozen embryos were to be given to one of the donors for implantation. 95 The A.Z. court found numerous reasons rendering the agreement between the couple unenforceable.

First, the A.Z. court found that the frozen embryo disposition agreement was not intended as a binding agreement between the husband and wife should they later disagree as to the disposition of the frozen embryos, but rather was intended only to define the donors’ relationship as a unit with the clinic. 96 Second, the agreement did not contain a time period and the circumstances under which the agreement was executed had changed, and, therefore, the A.Z. court refused to assume that the couple intended the agreement to apply absent any evidence of agreement on the time duration of the consent form. 97 Finally, the consent form used the phrase, “[s]hould we become separated” without defining separation. 98 Because the dispute

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88. Id. at 179.
90. Id. at 1053.
91. Id. at 1053–1054
92. Id. at 1054.
93. Id.
94. Id. at 1055.
95. Id. at 1056.
96. Id.
97. Id. at 1057 (enforcement of the consent form was sought four years after it had been executed).
98. Id. at 1057 (the A.Z. court noted that “separation” and “divorce” have distinct legal meanings).
arose in the context of a divorce, the A.Z. court found that it could not conclude that the consent form was to govern under these circumstances.\textsuperscript{99}

However, the A.Z. court stated that even if the agreement between the parties was unambiguous and enforceable, it would refuse to enforce an agreement that imposed parenthood on someone who was unwilling to be a parent.\textsuperscript{100} "As a matter of public policy, . . . forced procreation is not an area amenable to judicial enforcement."\textsuperscript{101} The A.Z. court reasoned an individual’s liberty and privacy rights require that no individual should be compelled to enter into intimate familial relationships.\textsuperscript{102}

The issues surrounding the enforceability of frozen embryo disposition agreements were further compounded in J.B. \textit{v.} M.B.\textsuperscript{103} In J.B. \textit{v.} M.B., the agreement between the couple stated that the control and disposition of their frozen embryos belonged to the "Patient and her Partner."\textsuperscript{104} It stated further that the couple agreed that all control, direction, and ownership of their tissues would be relinquished to the IVF Program upon dissolution of their marriage by court order, unless the court was to specify otherwise.\textsuperscript{105} Upon dissolution of their marriage, the wife sought destruction of the frozen embryos while the husband wanted to preserve the frozen embryos either for his use with another woman or for donation to another couple.\textsuperscript{106}

The J.B. court found in favor of the wife reasoning that the language of the disposition agreement did not indicate a clear intent of the parties, and, therefore, because no contract existed, generally the party opposing reproduction will prevail.\textsuperscript{107} However, the J.B. court recognized the need for agreements between progenitors and IVF clinics that perform the procedures and, therefore, held that it would enforce "agreements entered into at the time [IVF has] begun, subject to the right of either party to change his or her mind about disposition up to the point of use or destruction of any stored [embryos]."\textsuperscript{108}

The J.B. court supported its holding by reasoning that the rule it set forth will permit either progenitor to object to the disposition of the frozen

\textsuperscript{99} Id.
\textsuperscript{100} Id. "The Legislature has already determined by statute that individuals should not be bound by certain agreements binding them to enter or not enter into familial relationships." Id. at 1058; see Mass. Gen. Laws ch. 207, § 47A (2004) (abolishing statute regarding cause of action for breach of promise to marry); Mass. Gen. Laws ch. 210, § 2 (2004) (providing mother cannot agree to surrender child to adoptive parents sooner than fourth calendar day after child’s birth regardless of any prior agreement).
\textsuperscript{101} Id. at 1057–58.
\textsuperscript{102} Id. at 1059.
\textsuperscript{103} J.B. \textit{v.} M.B., 783 A.2d 707 (N.J. 2001).
\textsuperscript{104} Id. at 709–10.
\textsuperscript{105} Id. at 710.
\textsuperscript{106} Id.
\textsuperscript{107} Id. at 713–14, 716.
\textsuperscript{108} Id. at 719.
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embryo at a later date thereby protecting "[t]he public policy concerns that underlie limitations on contracts involving family relationships." Recognizing that this rule provides a conditional nature to disposition agreements, making them susceptible to litigation, the J.B. court opined that it believed the agreements in a large majority of the cases would control. Moreover, should disputes regarding the agreements later arise, the J.B. court commented that its stated position that ordinarily the progenitor choosing not to become a parent will prevail would also reduce further litigation.

The Florida statute governing disposition of frozen embryos is in accordance with the line of cases that conclude that frozen embryo disposition should be governed by contractual agreements. The statute governing the disposition of frozen embryos in Florida requires the couple and the IVF clinic or physician to enter into a written dispositional agreement regarding the embryos. Absent a written agreement, control and decision-making authority over the disposition of the frozen embryos remains with the couple. Thus, Florida places emphasis on determining the disposition of frozen embryos according to the couple’s wishes.

Therefore, it appears that “[t]he easiest way to reconcile the decisions [regarding frozen embryo disposition agreements] is to conclude that the courts will enforce such agreements where they provide for the donation or destruction of the frozen genetic material, but not where they provide for the implantation of the embryos over the objection of one of the parties.”

D. FROZEN EMBRYOS AS PROPERTY

According to the United States Constitution, “no person shall be . . . deprived of life, liberty, or property, without due process of law” and private property shall not “be taken for public use, without just compensation.” Every individual has a constitutional right to not be deprived of property without notice and the following of proper procedures. If property is taken from an individual without due process of law, the deprivation must bear a rational relationship to a legitimate state interest. Furthermore, if the property is taken for public use, it cannot be

109. Id.
110. Id.
111. Id.
113. Id. at § 742.17(1)-(3).
114. Fink, supra note 76, at 67.
115. U.S. CONST. AMEND. V; U.S. CONST. AMEND. XIV, § 1 (“No State shall . . . deprive any person of life, liberty, or property, without due process of law.”).
117. Id.
The Constitution does not, however, define what constitutes property and, therefore, there is no bright-line rule regarding whether an individual’s body parts fall within the property protections granted by the United States Constitution. Accordingly, courts have looked to federal and state statutes, as well as common law, to determine whether an individual’s body parts qualify as property and, thus, are protected by the United States Constitution.

Property is traditionally characterized as:

- a bundle of rights possessed by persons relative to objects, including, inter alia, the right to possess one’s property, the right to use it, the right to exclude others, the right to transfer ownership by gift or by sale, the right to dispose of one’s property after death, and the right not to have one’s property expropriated by the government without payment of compensation.

Courts have held that some human body parts, such as blood, should be recognized as property. Those human body parts are presently given property status under the law and, consequently, individuals are given property rights in them. However, courts have not afforded all body parts property status and the attendant rights that go along with such status. Therefore, the question becomes whether it is proper to classify frozen embryos as personal property.

The discussion in Moore v. Regents of the University of California regarding property rights in human tissue, while not directly addressing the issue of embryos and whether they should be classified as property, has potential implications for classifying embryos as property. In Moore, doctors at the Medical Center of the University of California at Los Angeles removed Moore’s spleen, with his written consent, as treatment for hairy-cell leukemia. Upon removal of his spleen, the doctors discovered that his tissue had a possibility of creating special disease and cancer fighting...
The doctors proceeded to develop these products, which eventually led to their financial gain. However, the doctors failed to obtain Moore’s consent to use his tissue in this manner.

The California Supreme Court allowed Moore’s tort claims for breach of fiduciary duty and lack of informed consent but denied his claim for conversion of property. In denying Moore’s claim for conversion, the Moore court rejected his argument that he “continued to own his cells following their removal from his body, at least for the purpose of directing their use . . . .” The Moore court reasoned that in order to establish conversion, a person must have title to the property and expect to retain its possession. Moore did not expect to retain possession of his spleen after it had been removed, which was enough to negate his ownership interest in his spleen and cells. Further, the Moore court found that Moore’s cells were not unique to him because they did not carry a genetic code or other mark only found in his body. Therefore, there was nothing unique to establish these cells as Moore’s property.

Moore does not, however, stand for the proposition that an individual’s human tissue can never be viewed as property. There are three possible constructions of the holding in Moore: (1) body parts cannot be seen as property while they are contained in the human body, but can be given property rights once they are removed, (2) that body parts are property but, once removed, were abandoned by the owner because they had little value to the owner and, therefore, are capable of appropriation, or (3) body parts, once removed from the owner, become part of the public domain and communal property.

Moore’s holding, when applied to cryopreservation of embryos, appears to support a finding that frozen embryos may be properly classified as property. “[E]mbryos are incredibly unique human tissue.” An embryo carries its own genetic characteristics that cannot be replicated in every human. An embryo, like a child, has the genetic characteristics of

127. Id. at 481–82.
128. Id.
129. Id.
130. Id. at 479–97.
131. Id. at 487.
132. Id. at 488–89.
133. Id.
134. Id. at 490, nn.29–30.
135. Id. at 492 (cells could not be scientifically linked to any one individual, id. at 490, and every human has an identical molecular structure).
137. Id. at 374–75.
138. Thomas, supra note 123, at 282.
139. Id. at 283.
140. Id.
only one man and one woman.\textsuperscript{141} It is more reasonable to conclude that a person seeks to retain possession of an embryo once the necessary components are removed from an individual's body because the main purpose of IVF, and further cryopreservation, is the creation of the embryos for later use.\textsuperscript{142} Furthermore, state statutes addressing the issue of excised human tissue directed the court's decision in Moore.\textsuperscript{143} Accordingly, absent a state statute directing the court on the control and disposition of frozen embryos, the law of personal property should apply.\textsuperscript{144}

In \textit{York v. Jones}, the United States District Court of the Eastern District of Virginia specifically addressed the issue of whether frozen embryos can properly be classified as personal property.\textsuperscript{145} In \textit{York}, a couple who had cryopreserved their embryos with the Jones Institute in Virginia subsequently moved to California and wanted their frozen embryos transferred so implantation could be done there.\textsuperscript{146} The Jones Institute refused claiming that the couple's contract for disposition of the frozen embryos did not include transfer as an option for disposition.\textsuperscript{147} The Virginia court, however, recognized that the couple had a property interest in their frozen embryos based on the contract they entered into prior to the cryopreservation of their embryos.\textsuperscript{148} The \textit{York} court found that the disposition contract constituted a bailment contract,\textsuperscript{149} therefore, limiting the Jones Institute's control and dominion it could exercise over the disposition of the frozen embryos as a bailee.\textsuperscript{150} The Jones Institute needed to release the frozen embryos to the control of the couple when they so demanded.\textsuperscript{151}

The culmination of these opinions from varying courts, as well as the different state statutes, suggests that frozen embryos should be considered property because of their unique characteristics and an individual's likely intent to retain possession of a frozen embryo. Because a frozen embryo can properly be characterized as property, the couple should have the ability to enter into an enforceable contract between themselves and the IVF clinic regarding disposition of their property.

\begin{enumerate}
\item \textsuperscript{141} \textit{Id.}
\item \textsuperscript{142} \textit{Id.}
\item \textsuperscript{143} \textit{Id.} at 284.
\item \textsuperscript{144} \textit{Id.}
\item \textsuperscript{146} \textit{Id.} at 424.
\item \textsuperscript{147} \textit{Id.} at 424–25.
\item \textsuperscript{148} \textit{Id.} at 425. The \textit{York} court further based its holding on a violation of the couple's constitutional right to procreation freedom, holding that the Jones Institute was not an arm of the Commonwealth of Virginia and thus could not claim governmental immunity from liability. \textit{Id.} at 429.
\item \textsuperscript{149} See infra § IV.
\item \textsuperscript{150} \textit{York}, 717 F. Supp. at 425, 427.
\item \textsuperscript{151} \textit{Id.} at 425.
\end{enumerate}
E. MODEL HUMAN REPRODUCTIVE TECHNOLOGIES AND SURROGACY ACT

"There is no federal law providing uniformity with respect to disputes over embryo ownership."152 However, students at the University of Iowa Law School drafted a Model Human Reproductive Technologies and Surrogacy Act ("Model Act").153 The Model Act proposes the same restrictions on the use of embryos as the New Hampshire statute.154 It further provides that no one other than the donor has rights in the frozen embryo,155 with the exception of transfer by the donor to a licensed person.156

The Model Act provides that absent a written agreement to the contrary retaining such rights, the transfer of frozen embryos to a licensed person transfers with it all the rights of the donor.157 It states that the man and woman who provide the gametes to create the embryo shall each have the same rights with respect to the embryo.158 However, should the gamete provider's interests conflict, and the parties did not contract as to whose interests should control, the Model Act provides a default priority list of whose interest should prevail:

(1) First, rights of a sperm donor who had retained rights with respect to his sperm, or the rights of the sperm donor's spouse. (2) Second, rights of an ovum donor who had retained rights with respect to her ovum, or the rights of the ovum donor's spouse. (3) Third, rights of a licensed person who had rights with respect to the ovum. (4) Fourth, rights of a licensed person who had rights with respect to the sperm.159

As the comment to this section of the Model Act suggests, this means that when a conflict arises between a man and a woman regarding the disposition of their frozen embryos, the man's interests will prevail if he retained his rights with respect to his sperm.160 The drafters of the Model Act attempt to explain this preference to the sperm donor's interests over the egg donor's interests by claiming that such preference will minimize the potential harm to any resulting child or, in some cases, "eliminating the possibility that a child could be born to the couple at all."161 The drafters

152. Trainor, supra note 7.
154. Id. at § 9–103; see supra note 42.
155. Id. at § 9–104.
156. Id. at § 9–105 (1987). “A licensed person means a person licensed or authorized by the State Department of Health . . . to engage in the collection, storage, or use of gametes and [embryos].” Id. at § 1–102(9).
157. Id. at §§ 9–106(a)–(b).
158. Id. at § 9–106(e).
159. Id. at § 9–106(e)(1)–(4).
160. Id. at § 9–106(e) cmt.
161. Id.
believe this prioritization will minimize the chance that a sperm donor who does not consent to the use of the frozen embryo will be determined the father of any resulting child, which would be possible if the egg donor controlled the disposition of the frozen embryo.\textsuperscript{162}

The proposed Model Act is consistent with the concept of viewing embryos as a form of property, for which the proper disposition and transfer of rights and ownership can be contracted for between the parties. The Model Act also attempts to provide a resolution to the issue of how courts should decide whose interests control absent a disposition agreement or when the disposition agreement fails to provide for proper disposition of the embryos. The proposed priority listing, however, is inconsistent with applicable property law and, therefore, should not govern when conflict between the parties arises.\textsuperscript{163}

While a statute does not need to be consistent with common law in order to be valid, and, in fact, many statutes are enacted to circumvent common law, the proposed priority listing of the Model Act fails to give the courts any discretion in determining whose interests should be controlling. A bright-line rule, while easy to apply and giving predictability to the law, is not always appropriate. The issue of frozen embryo disposition is usually susceptible to many competing interests and the decision can have significant affects on the parties involved. Therefore, the courts should view the priority listing provided by the Model Act as a guideline in rendering their decision, not a bright-line rule.

Therefore, of the few courts that have addressed the issue of frozen embryo disposition, the majority of them have held, with which the Model Act is in accordance, under either the principles of contract or property law, that the couple has initial authority over the frozen embryos to decide what will be the proper disposition of the frozen embryos.

\textbf{III. DECISIONAL AUTHORITY REGARDING DISPOSITION OF FROZEN EMBRYOS}

Often when a frozen embryo is characterized as property, the characterization does not connote tangible property or physical possession.\textsuperscript{164} Rather, characterizing a frozen embryo as property relates to who has the right to make decisions regarding the frozen embryos, such as the embryo’s “creation, storage, discard, donation, use in research, and placement in a uterus.”\textsuperscript{165}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{162} Id.
\item \textsuperscript{163} See infra § IV.
\item \textsuperscript{164} Thomas, supra note 123, at 274.
\end{itemize}
\end{footnotesize}
Decisional authority is a "question of who owns or has a property interest in early embryos." Therefore, just as other forms of personal and real property can be contracted for, implicit in the decision regarding frozen embryo disposition is that the disposition can be governed by a contract. There are a number of individuals or entities that can qualify as having decisional authority over the frozen embryo, including, each gamete provider separately or as a couple jointly, the physician who creates the embryo, or the IVF program or embryo bank that has actual possession of the frozen embryo.

"The assignment of property or decisional authority in external embryos is independent of any particular view as to whether the fertilized egg and early embryo are themselves rights-bearing entities or persons. Whether viewed as an actual or potential person, the answer to the ownership question is the same." The couple that provided the gametes to create the embryo has the strongest claim for decisional authority. This ownership right stems from the gamete provider's original ownership of his or her gametes and his or her decision to provide his or her gametes for reproduction, gift, or examination. If an individual's gametes are taken without his or her consent, the individual may have a cause of action for battery, and if the individual's gametes are already removed but are used for other purposes, the individual may have a cause of action for conversion. Therefore, it follows that the individuals who combine their gametes would have joint authority over the product that results from such combination.

A. DIRECTIVES FOR DISPOSITION OF FROZEN EMBRYOS

"If the gamete providers have joint dispositional control of external embryos, their power to give advance binding instructions for disposition of their embryos should also be recognized." It is important for the gamete providers to be able to control the disposition of the frozen embryos in advance so there is certainty as to what will happen to the frozen embryos should disputes arise later caused by "death, divorce, passage of time, 

166. Id. at 454.
167. Thomas, supra note 123, at 275.
168. Robertson, supra note 165, at 455.
169. Id. at 456.
170. Id. at 455–56.
171. Id. at 457.
172. Id.
173. Id. While the physician is essential to the creation of an embryo, the physician has been hired for his or her skill, and absent an agreement, the physician's contribution does not make him or her an owner of the finished product. Id. at 458.
174. Id. at 463–64.
unavailability, or disagreement among the parties. Problems arise, however, where one or both parties later disagrees with the advance disposition and wants to change it. There are arguments for and against advance disposition, but problems may also arise when there is an absence of a disposition agreement or the disposition agreement does not cover all future contingencies.

There is a claim that when the dispute is between the couple and the IVF program or embryo bank, the couple retains dispositional authority over the frozen embryos because they have not waived or transferred any authority that initially resided with them. Therefore, under this analysis, the IVF program or the embryo bank would not have any right to determine what happens to the frozen embryos because the couple has not given them any authority to make such decisions.

However, when the dispute arises between the couple, there are competing interests of the parties that need to be weighed; “one in avoiding the financial and psychosocial burdens of parenthood, and the other in using the embryos in question to become a parent.” In weighing these competing interests, there is a claim that the individual who is seeking to avoid reproduction should prevail if the other individual has a reasonable possibility of becoming a parent through alternative means. This position relies on the financial obligations that biological parents are required to provide until the child attains the age of majority and the psychological effects it will have on the individual who did not want a child in knowing that a biological child of his or hers exists.

It is argued that the competing interests should be judged according to

175. Id. at 463.
176. Id.
177. Id. at 464–65 (The arguments for recognizing advance agreements are that: (1) they create certainty about the consequences of reproductive options, (2) parties gain from an ability to rely on prior agreements when future contingencies occur, and (3) they minimize the number of disputes and the costs resolving issues over the disposition of embryos).
178. Id. (The arguments against recognizing advance agreements are that: (1) an individual’s needs and interests may not be fully recognized as they would be should the future contingencies occur, (2) an individual’s needs and interests may change in ways that were unforeseen at the time of the agreement, (3) preconception agreements to have or not have an abortion or to give a baby up for adoption are not enforceable and therefore neither should preconception or preimplantation agreements for the disposition of embryos, (4) there is no easy way to assure the individuals are fully informed of the binding decisions they would be making, and (5) IVF programs and embryo banks may have a monopoly power so that individuals are given little choice in the actual disposition of their embryos).
179. Id. at 473.
180. Id.
181. Id. at 476.
182. Id.
183. Id. at 477–79.
184. Id. at 479.
the harm that will result if one or the other interest is carried out. \(^{185}\) "The party who wishes to avoid offspring is irreversibly harmed if embryo transfer and birth occur, for the burdens of unwanted parenthood cannot then be avoided. On the other hand, frustrating the desire of the willing partner to reproduce with particular embryos will - in most instances - not prevent that partner from later reproducing with other embryos." \(^{186}\) When viewing embryos from the perspective of property, there is no reason to prefer existing embryos over new ones. \(^{187}\) If the individual’s purpose is to have the opportunity to reproduce, it should not matter if existing frozen embryos or ones created in the future are used to achieve the reproductive purpose. \(^{188}\)

However, this resolution of the competing interests is only appropriate when the individual who wants to reproduce has other reasonable options of reproduction. \(^{189}\) When there are no other available means for the individual to reproduce, the individual’s reproductive interest becomes stronger because “the pleasures of parenthood will be deeper and more intense than the discomfort of unwanted biologic offspring." \(^{190}\)

Therefore, decisional authority rests properly with the couple and the frozen embryos should be considered the couple’s property. However, often couples do not enter into dispositional agreements with the IVF clinics or are not able to be found later, leaving unclear indications of their wishes or insufficient funds to pay for the storage of the frozen embryos. \(^{191}\) In addition, while agreements between the couple and the IVF clinic may provide for proper disposition for some future contingencies, unforeseen contingencies may arise. \(^{192}\) When such events occur, courts should look to the principles of property law to resolve such matters.

**IV. PRINCIPLES OF PROPERTY LAW THAT SHOULD GOVERN DISPOSITION OF FROZEN EMBRYOS**

Since embryos can be properly characterized as property of a couple, as seen through the analysis in *Moore* and *York*, in the absence of a state or federal statute regulating the disposition of frozen embryos, common law

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185. *Id.* at 480.
186. *Id.*
187. *Id.* “[T]he embryos at issue should be treated as fungible, because other embryos formed from the [individual’s] gametes would satisfy the partner’s reproductive interests without infringing on the unwilling [individual’s] interest in avoiding the burdens of genetic parenthood.” *Id.* at 480 n.107. This stems from the proposition that life does not begin at conception and, therefore, cannot be analogized to perceiving born babies as fungible.
188. *Id.*
189. *Id.* at 481.
190. *Id.*
192. *Id.* at 764.
principles of property should apply.

A. BAILMENT

The best way to characterize the transfer and storage of the frozen embryos to the IVF clinic and the dispositional agreement between the couple and the IVF clinic is as a bailment relationship. Generally, any personal property can be the subject of a bailment.\(^{193}\) Bailment is defined as:

\[ \text{[a] delivery of goods or personal property by one person to another,} \]
\[ \text{in trust for the execution of a special object upon or in relation to} \]
\[ \text{such goods, beneficial either to the bailor or bailee or both, and} \]
\[ \text{upon a contract, express or implied, to perform the trust and carry} \]
\[ \text{out such object, and thereupon either to redeliver the goods to the} \]
\[ \text{bailor or otherwise dispose of the same in conformity with the} \]
\[ \text{purpose of the trust.} \]\(^{194}\)

Bailment, therefore, consists of four elements: "(1) delivery of personal property to accomplish some purpose; (2) retention of title by the deliveror; (3) possession of the deliveree; and (4) disposition of the personal property by the deliveree in accordance with the deliveror's instructions."\(^{195}\) As applied to frozen embryos, the couples' embryos are given to the IVF clinic for the purpose of having an opportunity to reproduce.\(^{196}\) As the creators of the frozen embryos, the couple retains legal title to them but possession of the frozen embryos exists with the IVF clinic. According to the dispositional agreement, the IVF clinic is under an obligation to dispose of the frozen embryos according to the couples' instructions. Thus, a bailment relationship exists when embryos are produced by a couple and subsequently frozen for later use.

Courts recognize three different categories of bailments; one for the benefit of the bailor, another for the benefit of the bailee, and the final category for the benefit of both the bailor and the bailee.\(^{197}\) The disposition of frozen embryos would involve the third category of bailments, benefit for both parties. The benefit to the bailor couple would be the opportunity to conceive a child, which without such means might not be possible. The benefit to the bailee IVF clinic would be the financial gain realized in performing the IVF procedure. In addition, a contingent benefit to the IVF clinic and researchers is the possibility of the couple deciding to donate


\(^{194}\) BLACK'S LAW DICTIONARY 139 (4th ed. 1979).

\(^{195}\) Kim, supra note 193, at 308.

\(^{196}\) See supra §§ II, III (the embryos have already been established as personal property).

\(^{197}\) Kim, supra note 193, at 308.
their unused frozen embryos for research purposes.

"To the extent not contrary to public policy, the rights and duties of the bailee with respect to the bailed property may be defined by contract."98 However, if no contract exists or if the contract in place fails to provide for a contingency that occurs, "the bailee in a bailment for mutual benefit is required to use ordinary care in protecting bailed property."99 Should the bailee use the bailed property in a manner inconsistent with the rights of the bailor or not with ordinary care to protect the bailed property, the bailor may have a cause of action in conversion.200

But if the rights and duties of the parties to the bailment are not defined or are not properly defined, courts should apply common law property principles to resolve any disputes that arise, including the principle of abandonment.

B. ABANDONMENT

If the bailment contract between the couple and the IVF clinic is either nonexistent or insufficient to provide for the disposition of the frozen embryos, the question then becomes whether the common law principle of abandonment can be applied to disposition of the frozen embryo. Abandonment of property "is the voluntary relinquishment of 'all right, claim, and possession, with the intention of terminating . . . ownership . . . without vesting it in any other person and with the intention of not reclaiming future possession or resuming its ownership, possession, or enjoyment."" For property to be considered abandoned, the intent to abandon and the act of abandonment must occur simultaneously.202 Property will not be deemed abandoned if it is disposed of for consideration, in which case it would be called a sale, or if it is disposed of in favor of a certain person, in which case it would be a gift.203 Abandonment is not possible unless there is a vacancy in possession (i.e., a time when no one is in possession of the property).204

If no disposition agreement exists between the couple and the IVF clinic, frozen embryos can be properly classified as abandoned. Ownership of the frozen embryos remains with the couple until such ownership is transferred. The absence of a disposition agreement fails to transfer the ownership interest in the property to another individual. If the couple has

198. Id. at 309.
199. Id.
200. Id. at 315.
202. Id.
203. Id. at 243–44.
204. Id. at 244.
not exercised any of their rights over the frozen embryos for a period of time, typically five years, it can be inferred that the couple has no intention of using the frozen embryos in the future. Therefore, a presumption can arise that the couple gave up their rights in the frozen embryos when they initially transferred them to the IVF clinic. The IVF clinic thus would be able to dispose of the abandoned frozen embryos or donate them for research purposes.

When a couple executes a disposition agreement but fails to provide for disposition in a particular occurrence, the question of whether the frozen embryos are abandoned is less clear. No matter what disposition of the frozen embryos the agreement provides for, the disposition will provide for the ownership interest to either transfer to someone else or remain with the couple. Therefore, the ownership interest would reside with an individual or an entity, and this would negate the element of abandonment which requires that the ownership interest not vest in anyone. Furthermore, the couple would not have relinquished all ownership interest in the embryos at transfer. It is not enough that there is a question as to ownership for the contingency at issue to constitute abandonment. In addition, if the disposition agreement provides for one of the individuals to have control of the frozen embryos upon the occurrence of a contingency, it would show intent of future use, thereby negating another element of abandonment. Therefore, when a disposition agreement fails to provide for a contingency that occurs, frozen embryos would not be considered abandoned. The court instead should consider the intent of the parties in disposition of the frozen embryos, based, in part, on how the couple provided for disposition in other instances.

Therefore, the IVF clinic’s retention of a couple’s frozen embryos should be viewed as a bailment relationship when the couple has executed an agreement regarding disposition of the frozen embryos. If no agreement regarding disposition of the frozen embryos exists, the courts should apply

205. Prior case law has shown that when a dispute arises between a couple regarding the disposition of their frozen embryos, courts have generally found in favor of destruction of the embryo, even if neither of the individuals wants the embryos destroyed. See supra § II. When an embryo is properly classified as abandoned by both gamete providers, however, it does not matter if the prior owners are in dispute about what should be done with the embryos because they are not able to assert any ownership interests over the embryos. An argument is made that when one gamete provider abandons the embryo, the individual who did not abandon the embryo should be able to preserve the embryo because this is consistent with how the law resolves other property disputes. See Laguna Development Co. v. McAlester Fuel Co., 572 P.2d 1252 (N.M. 1977). No court has addressed the situation in which one gamete provider relinquishes all ownership interests in the embryo while the other still retains an ownership interest. It would appear likely that a court would find that the person who still retains an ownership interest in the embryo may dispose of the embryo as he or she so chooses, whether this be to preserve the embryo or destroy it. When a dispute between the gamete providers arises as to the disposition of the embryos, neither individual having abandoned the embryo, the court should look to the individuals’ intent to resolve the dispute.
the principle of abandonment since the frozen embryos can properly be classified as property. However, classifying frozen embryos as property and having the principles of property law govern the disposition of the frozen embryos can raise ethical concerns.

V. ETHICAL CONSIDERATIONS IN DONATING FROZEN EMBRYOS FOR STEM CELL RESEARCH

Embryonic stem cell research has been the center of much debate since the ability to isolate and culture embryonic stem cells was reported in 1998.\textsuperscript{206} Much of the debate reflects the holdings of the small number of courts that have addressed the issue of frozen embryo disposition: whether the embryo should be considered a person, therefore receiving all the same protections given a human who is born; whether the embryo, while not a human, should be given special consideration as a potential human; or whether the embryo should be considered property. “Commentators hold widely differing perspectives on the moral status of the human embryo.”\textsuperscript{207}

One point of view taken by commentators is that the embryo is considered a person from the moment of conception.\textsuperscript{208} This is the position supported by the Catholic Church.

From the time that the ovum is fertilized, a new life is begun which is neither that of the father nor of the mother; it is rather the life of a new human being with his own growth. It would never be made human if it were not human already. . . . [Genetic science] has demonstrated that, from the first instant, the programme is fixed as to what this living being will be: a man, this individual-man with his characteristic aspects already well determined. Right from fertilization is begun the adventure of a human life, and each of its great capacities requires time . . . to find its place and to be in a position to act.\textsuperscript{209}

Since the Catholic Church believes that an embryo is a person from the moment of conception, it follows that the embryo should be given all the rights of being a human being, specifically the right to life.\textsuperscripts{20, 210}


\textsuperscript{207.} Carl H. Coleman, \textit{Procreative Liberty and Contemporaneous Choice: An Inalienable Rights Approach to Frozen Embryo Disputes} 84 MINN. L. REV. 55, 66 (1999). While there are other reasons for and against conducting embryonic stem cell research, such as relieving suffering and freedom to conduct research, this paper focuses on an embryo and its rights and/or third parties rights to it.

\textsuperscript{208.} \textit{Id.}

\textsuperscript{209.} SACRED CONGREGATION FOR THE DOCTRINE OF THE FAITH, DECLARATION ON PROCURED ABORTION, 12-13 (1974).

\textsuperscript{210.} SACRED CONGREGATION FOR THE DOCTRINE OF THE FAITH, INSTRUCTION ON RESPECT
Therefore, according to the Catholic Church, "[r]espect for the dignity of the human being excludes all experimental manipulation or exploitation of the human embryo." 211 There is no purpose, no matter how dignified, such as advantages to other human beings or society as a whole, which in any way justifies the experimentation on living human embryos. 212 Additionally, the Catholic Church believes that it is not possible for the couple that provided the gametes to give consent for the use of the embryo, as is now required by most IVF clinics, because those individuals do not have the power to dispose of the physical integrity or life of an unborn child. 213 Most commentators who also believe that life begins at the moment of conception are in accordance with the Catholic Churches’ view on frozen embryos use for research. 214

On the other hand, some commentators take the position that the human embryo is neither person nor property, but rather, should be afforded special respect because the embryos have a heightened moral status. 215 These commentators do not believe that an embryo should be afforded the status of a human being, in part because the embryo “is not sentient, lacks a brain, and does not yet have even the rudiments of a nervous system.” 216 The embryos are given special respect, therefore, out of a concern for human dignity and human life in general. 217

In this respect, opposition is seen against any action that contributes to the perception of the embryos as commodities. 218 This would mean that the purchase and sale of embryos, the creation of embryos for the specific purpose of research, or the creation of embryos for inventory purposes would be considered wrong. 219 However, destruction of embryos and their use in some scientific research would be permissible. 220

Finally, a few commentators support the position that the embryo should be considered property. According to this view, the embryo has no

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211. HOLY SEE, CHARTER OF THE RIGHTS OF THE FAMILY, art. 4(b) (Nov. 25, 1983).
213. Id.
215. Id. at 67.
217. Id.
218. Coleman, supra note 207, at 68.
219. Id. at 68–69.
220. Id. at 69. Many supporters of embryo research under this viewpoint believe that research should be limited to the first 14 days of the embryo’s development because the embryo has not yet committed to being a single being, it may still divide or combine with other embryos to form a single entity. Ethics Committee, American Society for Reproductive Medicine, Ethical Considerations of Assisted Reproductive Technologies 62 FERTILITY & STERILITY Suppl. 1, S29–30, S78 (1994).
moral status and should be considered property of the couple that provided the gametes to create the embryo.\textsuperscript{221} The mere potential to become a born human being should not carry with it any rights or duties.\textsuperscript{222} Otherwise, it is argued that "an acorn should be treated as an actual, rather than a potential, oak tree."\textsuperscript{223} This line of reasoning is analogized to an egg and sperm that separately have the potential to become a born human being, yet the egg and sperm are treated as property.\textsuperscript{224}

Of the commentators who support the view that regards an embryo as property, many do not believe that the physical embryo itself should be considered property, but rather believe that the right to make decisions regarding the embryo's disposition is considered the property interest.\textsuperscript{225} "Given that gamete providers have rights to possess their embryos, to use them and to donate them to or withhold them from others, it is hard to deny that embryos constitute property."\textsuperscript{226} Therefore, viewing an embryo as property "would give the couple unfettered discretion over how their frozen embryos are disposed,"\textsuperscript{227} which could include the possibility of donating the frozen embryos for stem cell research.

Proponents of embryonic stem cell research argue that "preimplantation embryos will be discarded in any event and it is appropriate to gain some benefit from the act."\textsuperscript{228} The frozen embryos are said to be in a "terminal situation" because the majority of the frozen embryos will not be adopted and many of them may not even be viable if transferred to a woman's uterus.\textsuperscript{229} Considering the possible medical advances that can be achieved through embryonic stem cell research, proponents of this research believe they are morally obligated to pursue such research. In addition, they note that frozen embryo donation for research is an extension of the couple's authority over the disposition of the embryos.

Those in opposition of embryonic stem cell research "argue that research causing the destruction of embryos is wrong" and that the same benefits can be achieved through the use and further research in adult stem cells.\textsuperscript{230} They believe that characterizing the frozen embryos as in a

\begin{enumerate}
\item Coleman, \textit{supra} note 207, at 67.
\item Robertson, \textit{supra} note 165, at 445.
\item Ingram, \textit{supra} note 222, at 73.
\item Thomas, \textit{supra} note 123, at 274.
\item Coleman, \textit{supra} note 207, at 67.
\item \textit{Donating Spare Embryos}, \textit{supra} note 206, at 958.
\item \textit{Donating Spare Embryos}, \textit{supra} note 206, at 958.
\end{enumerate}
"terminal situation" employs the use of circular reasoning.231 The embryos are in a "terminal situation" because of an individual's decision, and thus deciding they are going to die anyway and using them for stem cell research ignores the original moral wrong in deciding to create and freeze them.232 In addition, those in opposition to embryonic stem cell research believe that the use of the frozen embryos for research will lead to treating frozen embryos as commodities thereby diminishing the respect for embryos.233

The American Society for Reproductive Medicine ("ASRM") takes the position that an embryo is a potential human being that deserves special respect.234 The ASRM supports embryo research if it is done in a way that gives the embryo respect and if it is likely to provide significant new knowledge that will be beneficial to human health.235 From this perspective, the ASRM supports the use of embryonic stem cell research only if the couple gives informed consent, since informed consent is the foundation for all human subjects research.236

The couples' agreement with the IVF clinic typically provides for the disposition of the frozen embryos according to the couple's wishes in the event of divorce, death, or no contact with the clinic.237 However, should no divorce or death occur, the couple will need to decide the disposition of the frozen embryos when their fertility needs are met or they wish to end their reproductive efforts.238 It is only after the couple makes a decision that they are no longer in need of the frozen embryos that the ASRM believes it is appropriate for the couple to make a decision regarding donating the frozen embryos for research.239 This, the ASRM believes, will relieve the pressure put on the couple to donate them for research.240

In order to successfully obtain a couples' informed consent to donate their frozen embryos for research, the ASRM specifies basic information the couple should be given.

Couples . . . should be told of the risks and benefits of donation[,] . . . the purpose and nature of the research and of whether the research is expected to have commercial value. They should [also] be told that they may change their minds about donation at any time until the experiment begins, that their status in the infertility program will not be affected if they do not donate spare embryos,

231. President's Council on Bioethics, supra note 229, at 86.
232. Id.
233. Donating Spare Embryos, supra note 206, at 958.
234. Id.
235. Id.
236. Id. at 959.
237. Id.
238. Id.
239. Id.
240. Id.
and that no embryos used in the study will be transferred for pregnancy.\textsuperscript{241}

The ASRM also states that further information should be given to the couple if the research that is to be done on the frozen embryos is stem cell research.\textsuperscript{242} Couples should be told that embryonic stem cell research "typically involves deriving cells from the inner cell mass of an embryo at the blastocyst stage, which leads to the embryo’s destruction."\textsuperscript{243} Furthermore, the couple should be told there is a possibility that the cell line might exist indefinitely, that the stem cells from the frozen embryos may have commercial value of which they would not receive any benefit from, and, if possible, the couple should be told of the anticipated research (such as reproductive research, disease therapy development, or product development).\textsuperscript{244}

In situations where a couple cannot be reached, the ASRM believes it is appropriate to classify the frozen embryos as abandoned if the clinic has "taken diligent steps to contact the couple, no written instructions exist, and more than five years [has] elapsed without contact with the couple."\textsuperscript{245} However, the ASRM believes that the only appropriate disposition for the abandoned frozen embryos is to discard them; they are not to be used for research or donated to another couple without prior consent.\textsuperscript{246} Furthermore, if the couple that cannot be reached stated that the appropriate disposition for the frozen embryos was donation for research, the frozen embryos can only be used for stem cell research if the couple was informed that embryonic stem cell research was a possibility when the clinic obtained their informed consent.\textsuperscript{247}

To lessen the uncertainty of when frozen embryos can be considered abandoned and what should be done with them if they are, the ASRM states that IVF clinics "should require each couple contemplating embryo storage to give written instructions concerning disposition of [the] embryos in the case of death, divorce, separation, failure to pay storage charges, inability to agree on disposition in the future, or lack of contact with the program."\textsuperscript{248} In addition, the agreement should clearly state that the clinic has the right to dispose of the frozen embryos if there has been no contact between the couple and the clinic for a specified period (typically five years) and the

\begin{itemize}
\item \textsuperscript{241} Id. at 958.
\item \textsuperscript{242} Id.
\item \textsuperscript{243} Id.
\item \textsuperscript{244} Id. at 958–59.
\item \textsuperscript{245} Id. at 959.
\item \textsuperscript{246} Id.
\item \textsuperscript{247} Id.
\end{itemize}
couple has not updated the clinic with their current address and phone number.

Therefore, there are many conflicting ethical considerations that may influence, consciously or subconsciously, the courts or the state and federal government’s holdings and statutes regarding disposition of frozen embryos. These ranging ethical considerations will most likely make statutory resolution of this issue difficult. Accordingly, the common law principles of property are appropriate to apply.

VI. CONCLUSION

"Deep within drab metal storage tanks, in fertility clinics throughout the world, are hundreds of thousands of embryos. They’re suspended in tiny glass straws, frozen in liquid nitrogen - essentially in limbo, awaiting decisions that will bring them to life or see them destroyed."249 The reason many of these frozen embryos are in limbo is because questions surrounding whether they should be classified as persons, property, or some special interim category, still exist.

Under our existing legal framework, and in the absence of a statute that mandates otherwise, frozen embryos can be properly classified as property. The question of whether individuals have a property right in their body parts, when applied to embryos, can be answered in the affirmative under the California Supreme Court’s reasoning in Moore.250 Therefore, since a property right exists in embryos, the providers of the gametes who created the embryo hold the rights that accompany the ownership of the embryo.

As owners of the embryo, the couple, jointly, possesses the right to dispose of the embryo as they so choose. This is most often done through a contract entered into with the IVF clinic, creating a bailment relationship between the parties. However, if no bailment relationship exists between the couple and the IVF clinic, after a reasonable period of time, typically five years, the frozen embryo can properly be considered abandoned. As abandoned property, an individual, or in the case of an IVF clinic, an entity, has the option of claiming the property and asserting ownership over it. The new owner of the property would then have all the rights of the original owner and would, therefore, be able to dispose of the property as he, she, or it desired.

There are many reasons, for and against, an IVF clinic donating the abandoned frozen embryos for embryonic stem cell research. Since the IVF clinic is the owner of the property and has the ultimate decision regarding

250. Moore, 793 P.2d 479.
the disposition of the frozen embryos, it will need to weigh the costs and benefits for itself and reach a decision that it feels is most suitable with its mission and operation.

Until legislation is provided directing the disposition of frozen embryos, courts and IVF clinics will continue to differ on the proper disposition of frozen embryos. Enacting legislation would most likely require that a determination regarding the moral status of an embryo be made, and with the continued debate surrounding the issue, it is apparent why there has been difficulty in passing any legislation and will continue to be so in the future. Until such time, courts should look to the common law principles of property law when deciding issues surrounding the disposition of frozen embryos.