Examining the Right to Premortem Cryopreservation

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NOTE

EXAMINING THE RIGHT TO PREMORTEM CRYOPRESERVATION

IN MEMORY OF PROFESSOR DWIGHT L. GREENE

Goodbye My Educator

The Stone halls of Hofstra shall bereave
the loss of your sprightly steps.

No longer will we hear your laughter,
No longer will we be warmed by the generosity of your smile.
Swiftly forthcoming, one and all received its grace.
Such heartening refuge in a world coldly filled
with rapacious men and women.

You have kindled our thirst for knowledge.
You have kindled our thirst for justice.
Yet what justice has been served by
such a cruel and unlikely end?

Forever lost are the jurisprudential lessons.
Forever remain the moments we have shared with you,
In our Hearts, in our Minds, in all you have Touched,
Through your Work, through your Life, through your Love for All.

Goodbye My Educator.

Vivianne Calizaire
I. INTRODUCTION

Death, be not proud, though some have called thee
Mighty and dreadful, for thou art not so;
For those whom thou think'st thou dost overthrow
Die not, poor death, nor yet canst thou kill me.
From rest and sleep, which but thy pictures be,
Much pleasure; then from thee much more must flow,
And soonest our best men with thee do go,
Rest of their bones, and soul's delivery.
Thou art slave to fate, chance, kings, and desperate men,
And dost with poison, war, and sickness dwell,
And poppy or charms can make us sleep as well
And better than thy stroke; why swell'st thou then?
One short sleep past, we wake eternally
And death shall be no more; Death, thou shalt die.¹

The single characteristic common to all living things is that eventually they die. From the simplest microorganism to the most complex form of life, the cessation of all life functions occurs sooner or later. Homo sapiens, arguably the most complex biological units to have evolved from the primordial soup, are no exception. However, cryobiology, the study of biological systems at very low temperature, has led many to believe that death may be delayed if a subject is properly cryopreserved.²

As currently practiced, cryopreservation³ of a subject takes place

¹ John Donne, Holy Sonnets, in 1 THE NORTON ANTHOLOGY OF ENGLISH LITERATURE 1097, 1099 (M.H. Abrams et al. eds., 5th ed. 1986). Priests, preachers, poets, and playwrights have written and spoken volumes about death and our inability to avoid it. See, e.g., Robert Browning, Prospice, in 2 THE NORTON ANTHOLOGY OF ENGLISH LITERATURE 1301, 1301-02 (M.H. Abrams et al. eds., 5th ed. 1986). However, there are those, like John Donne, who do not believe that death is as powerful as it has been portrayed. In light of the technological advances of today, John Donne, who wrote Biathanatos, an unpublished treatise on the lawfulness of suicide, 1 THE NORTON ANTHOLOGY OF ENGLISH LITERATURE 1061 (M.H. Abrams et al. eds., 5th ed. 1986), would probably include cryopreservation as one of the masters of death: One cold night past, we wake eternally. And death shall be no more.


³ Different terminologies for the procedure are used interchangeably. For example, some use "cryogenic suspension" to refer to the freezing, storage, and long-term maintenance of the patient. See, e.g., Donaldson v. Van de Kamp, 4 Cal. Rptr. 2d 59 (Ct. App. 1992). Others use "cryonics" to refer to the entire procedure. See generally BRIAN WOWK & Mi-
soon after the subject is declared clinically dead\(^4\) with the hope of

CHAEI DARWIN, CRYONICS: REACHING FOR TOMORROW (1991). This Note uses the term “cryopreservation” to refer to the entire procedure.

Although the procedure for the freezing process has been refined considerably over the years, the general steps remain constant:

a. Upon clinical death, the patient is cooled externally while circulation and breathing are artificially restored. This step keeps the blood flowing and prevents additional damage to the cells. \(\text{SMITH, supra note 2, at 12 n.25.}\)

b. The patient is injected with a measured dose of heparin or some other anticoagulant to prevent coagulation of the blood. \(\text{Id.}\)

c. Noradrenalin is injected to raise the blood pressure. Noradrenalin is a vasoconstrictor which raises blood pressure by causing the musculature of arteries to contract. \(\text{Id.}\)

d. A dosage of an antibiotic is also administered to decrease the population of intestinal bacteria; sodium bicarbonate is also injected to offset acidosis. \(\text{Id.}\)

e. When the body temperature reaches 10° C, the entire blood volume is flushed out of the body and replaced with a cryoprotectant. The most effective cryoprotectant used today is a solution of dimethyl sulfoxide (DMSO) with sodium chloride, disodium glycerophosphate, and dextrose. An adjustment to a pH of 7.4 should be made to the body’s fluids. \(\text{Id.}\)

The cryoprotectant is necessary to the procedure because of the damage that ice formation can cause to the cells. The body contains a large amount of water. The cytoplasm of every cell, as well as the extracellular fluid, is filled with water. As the extracellular water freezes, the extracellular concentration of electrolytes and other dissolved materials increases. The increase in concentration causes water to travel from the intracellular fluid to the extracellular fluid to equilibrate the extracellular and intracellular concentrations. However, this is futile because as long as the temperature keeps decreasing, the extracellular water will continue to crystallize, thereby repeating the cycle. Cell damage occurs as the intracellular water is withdrawn and the cell collapses. \(\text{See WOWK & DARWIN, supra, at 11.}\)

The cryoprotectant, insofar as it is permeable to the cellular membrane, enters the cell and binds the intracellular water. Water in the extracellular fluid is also bound by the cryoprotectant. The intended result is to prevent or reduce the instances of water crystallization. The toxicity of the chemicals to the cell should also be considered in choosing a suitable cryoprotectant. \(\text{See Locksley E. McGann & Michele L. Walterson, Cryoprotection by Dimethyl Sulfoxide and Dimethyl Sulfone, 24 CRYOBIOLOGY 11 (1987) (discussing the general need for cryoprotectants in the preservation of cells and tissues at low temperatures, and the membrane permeability and toxicity criteria in selecting appropriate cryoprotective compounds).}\)

e. The subject is now ready to be cooled further. The temperature is lowered by increments. Storage of the subject is done at -196°C. \(\text{SMITH, supra note 2, at 12 n.25; see also LUCY KAVALER, FREEZING POINT: COLD AS A MATTER OF LIFE AND DEATH 249 (1970).}\)

4. While cessation of gross anatomical functions, such as heartbeat and breathing, may signal that the ultimate end, namely, cellular death, is imminent, an intermediate level of activities must be conquered before cellular death actually occurs. Several biological activities still continue for a significant amount of time even after clinical death. \(\text{SMITH, supra note 2, at 25.}\) The cessation of these activities some time after clinical death is defined as biological death. \(\text{Id.}\) Cellular death, on the other hand, is the irreversible disorganization of individual body cells. \(\text{See WOWK & DARWIN, supra note 3, at 8.}\)

The general premise of cryopreservation is that gross anatomical activities such as
reviving the person at some time in the future. One of the goals of cryobiology, however, is to preserve terminally ill patients before the onset of clinical death, or "premortem." If the technology is perfected to the level predicted by cryobiologists, it will raise a plethora of sociological, political, philosophical, religious, and legal issues. The concepts of life and death are at the very core of those issues. Our legal definitions of death, homicide, assisted suicide, and the right to refuse medical treatment will require re-examination.

After the Supreme Court's recent acknowledgement of the right to refuse medical treatment, the debate over whether similar recognition should be extended to physician-assisted suicide and premortem cryopreservation has intensified. Several events have contributed to the debate. For example, Dr. Jack Kevorkian, who has helped several patients to commit suicide, has brought the idea of physician-assisted suicide off the pages of scholarly articles and into the free market of ideas and the courtroom. Other stories continue to surface and fuel heartbeat and respiration can be restored, if the onset of biological death and everything thereafter is forestalled. Id. at 8-9. Insofar as respiration, heartbeat, and brain activity are derivative of biological activities, which themselves are the results of cellular activities, forestalling biological death and cellular death through the freezing process should, in theory, allow for the reestablishment of gross anatomical functions. Id. Thus, where biological and cellular activities remain viable, clinical death is theoretically reversible. See id.

5. See Donaldson, 4 Cal. Rptr. 2d at 60-61 (involving a patient who wanted to be cryopreserved before his inoperable brain tumor completely destroyed his brain).
11. On June 4, 1990, Dr. Jack Kevorkian assisted Janet Adkins, a 54-year old sufferer of Alzheimer's disease, in committing suicide by using a machine that Dr. Kevorkian had designed and built. See State ex rel. Thompson v. Kevorkian, No. 90-390963-AZ (Cir. Ct. Oakland Cty., Mich., Feb. 5, 1991), reprinted in 7 ISSUES IN LAW & MED. 107, 108 (1991). The machine consisted of three vials containing three different solutions. An electric motor which the patient activated by pressing a button controlled the intravenous release of the solutions into the patient's body. The first solution released, saline, was harmless; however, the next solution, thiopental, caused unconsciousness. The final solution, potassium chloride, caused cardiac arrest. Id. at 108. Soon thereafter, the Circuit Court for the County of Oakland issued a preliminary injunction providing that:

Defendant Kevorkian . . . shall be and hereby [is] enjoined pending final disposition of this cause from: using, employing, administering, offering, or providing any of his "suicide machines," . . . on, or to, any person seeking to end a human life, or conducting any acts to help a patient commit suicide regardless of the modality
the fire. In 1991, Dr. Timothy E. Quill, a member of the faculty of the University of Rochester Medical School, revealed that he had helped a leukemia patient to commit suicide.\textsuperscript{12}

Similarly, cryopreservation is no longer a subject for science

\textit{Id.} at 107. On February 5, 1991, the court transformed the temporary injunction into a permanent one. \textit{Id.} at 121. Circuit Judge Alice L. Gilbert conclusively stated that "[a]t the present time, patient self-determination does not encompass self-exterrmination effectuated by a physician." \textit{Id.} at 120. While admitting that there are situations "under which life exceeds the level of physical and/or emotional tolerance where, in fact, the alternative to life serves the best interest of a patient[,]" Judge Gilbert concluded that "[p]atients cannot confer a right upon a doctor to assist a suicide . . . or [r]eject to a physician how to practice medicine." \textit{Id.} at 118.

Dr. Kevorkian was also charged with first degree murder, pursuant to \textsc{Mich. Comp. Laws Ann.} \textsection{750.316} (West 1980). The charges were ultimately dropped because "there was no proof that [Dr. Kevorkian] had planned and carried out the death of . . . Jane Adkins." \textit{See} William E. Schmidt, \textit{Prosecutors Drop Criminal Case Against Doctor Involved in Suicide}, \textsc{N.Y. Times}, Dec. 15, 1990, at A10. As a result of the dismissal of the murder charge, Michigan State Senator Frederick Dillingham proposed a bill that criminalizes assisting suicide. The bill was passed and became effective on March 31, 1993. \textit{See} \textsc{Mich. Comp. Law \textsection{752.1027} (1992)}. The statute made assisting suicide a felony punishable by either a four-year prison term or a $2,000 fine. \textit{Id.}


Dr. Quill revealed his story in a recent issue of \textsc{The New England Journal of Medicine}. The patient involved, simply called Diane, had successfully overcome several hurdles in her life, including vaginal cancer and alcoholism, before she was diagnosed with acute myelomonocytic leukemia. \textit{Death And Dignity}, supra, at 692.

The patient, upon her diagnosis, had apparently decided to forgo technological interventions and long-term cures that had a proven success rate of 25\%. \textit{Id.} However, some time later, she informed Dr. Quill that "[w]hen the time came, she wanted to take her life in the least painful way possible." \textit{Id.} at 693. She was afraid of a lingering death that would interfere with her desire to get the most out of the time she had left. \textit{Id.} Mindful of that possibility and of the effect that a violent death or an unsuccessful suicide attempt would have on Diane’s family, Dr. Quill acquiesced to her request for barbiturates. \textit{Id.} With a readily available means to commit suicide, the patient was free to live fully and concentrate on enhancing the quality of the relationships she had with her friends and family. \textit{See id.}

As per her agreement with Dr. Quill, the two met several times over the next several months. Then, two days after a meeting during which she informed Dr. Quill that she would be leaving soon, her husband called to inform him that she had died. \textit{Id.} She had the opportunity to say goodbye to her friends, husband, and son and was finally at peace. \textit{Id.} Dr. Quill reported the patient’s cause of death as “acute leukemia”; however, he concedes that “[a]lthough [he] did not assist in her suicide directly, [he] helped indirectly to make it possible, successful, and relatively painless.” \textit{Id.} at 694.

Dr. Quill’s revelation contributed to the debate over physician-assisted suicide in a positive way. Ultimately, a grand jury in Rochester declined to indict Dr. Quill. \textit{See Altman, supra}, at A1. It found “no criminal liability on the part of Dr. Quill in connection with the death of his patient, Diane.” \textit{Id.} at A10.
fiction. The issue was recently addressed by the California Court of Appeal in Donaldson v. Van de Kamp. Petitioner Thomas Donaldson, suffering from a malignant brain tumor, brought an action for a declaration that he "has a constitutional right to premortem cryogenic suspension of his body and the assistance of others in achieving that state." Donaldson also sought to enjoin any criminal prosecution of those who agreed to assist him in achieving cryogenic suspension.

Part II of this Note argues that, given our current acceptance of the right to refuse treatment and the common law right to self-determination, premortem cryopreservation of a competent, terminally ill person should be constitutionally protected as an exercise of that person's right to self-determination. Part III proposes an amendment to the current statutes against aiding and abetting suicide that would immunize from criminal prosecution scientists who assist in the premortem cryopreservation of competent, terminally ill patients. The amendment would require that premortem cryopreservation be subject to the same balancing test as the right to refuse medical treatment.

II. THE CONSTITUTIONAL RIGHT TO PREMORTEM CRYOPRESERVATION

It has been several decades since the United States Supreme Court established the right to privacy as a fundamental right deserving of constitutional protection. Several commentators have identified Griswold v. Connecticut as the case to first announce the constitutional right to privacy. In actuality, in the context of procre-
ation, the Supreme Court intimated the existence of such a right in *Skinner v. Oklahoma*, more than two decades before *Griswold* was decided; but in *Skinner*, the Court simply called it a basic liberty interest. Several other rights have since been located under the umbrella of a basic liberty interest.

It must be noted, however, that although one of the stated purposes of the Constitution is to secure our individual liberty, unconditional protection of the entire spectrum of individual liberty is not reasonable in an ordered society. The core notion of liberty is that

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20. *Skinner* involved Oklahoma's Habitual Criminal Sterilization Act, OKLA. STAT. ANN. tit. 57, §§ 171-195 (West 1991). The Act provided for the sterilization of any person who had been convicted more than once of felonies of "moral turpitude." *Skinner*, 316 U.S. at 536. Petitioner, who had been convicted of stealing chickens and armed robbery, challenged the constitutionality of the Act when the Attorney General instituted proceedings against him. *Id.* at 536-37. The petitioner was to be sterilized by vasectomy.

In holding the Act unconstitutional, the Court reasoned that to the extent that "[m]arriage and procreation are fundamental to the very existence and survival of the race[,]" the legislation involved one of the basic civil rights of man. *Id.* at 541. Consequently, sterilization by vasectomy would deprive the petitioner of a basic liberty interest. *Id.*

21. Collateral to this expansion in nomenclature is the insistence by many courts and commentators that there be a specific constitutional provision for each new term that can be carved out of the broader concept of liberty. Professor Laurence H. Tribe states the problem in the following way:

The resulting rights have been located in the "liberty" protected by the due process clauses of the fifth and fourteenth amendments. They have been cut from the cloth of the ninth amendment—conceived as a rule against cramped construction—or from the privileges and immunities clauses of article IV and of the fourteenth amendment. Encompassing rights to shape one's inner life and rights to control the face one presents to the world, they have materialized from the "emanations" and "penumbras"—most recently dubbed simply the "shadows"—of the first, third, fourth, and fifth amendments. They elaborate the "blessings of liberty" promised in the Preamble, and have been held implicit in the eighth amendment's prohibition against cruel and unusual punishments.


22. See U.S. CONST. pmbl. ("We the People of the United States, in Order to . . . secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this CONSTITUTION for the United States of America.").

23. See generally DANIEL A. FARBER & SUZANNA SHERRY, A HISTORY OF THE AMERICAN CONSTITUTION (1990). The founders of this country, in speaking of liberty, adopted the ideas of John Locke. *Id.* at 9-10. Locke's account of natural law served as the fundamental principle from which natural rights were distilled. According to the prevailing ideology of the founding generation, liberty had a plain and simple meaning: the capacity to exercise natural rights. *Id.* However, the exercise of natural rights by one inevitably interferes with a similar exercise by another. Imagine, for example, two celestial bodies from which forces are generated. Imagine further that those forces extend outwardly in all directions and to infinity. As the two bodies approach each other, the likelihood that the forces from one will interfere
every human being must be free from governmental interference in making certain fundamental personal decisions.24

Contrary to the thinking of eighteenth-century lawyers who believed these fundamental rights to be self-evident,25 legal scholars of today are eager to identify each fundamental right supplementing the Bill of Rights and every possible hybrid combination.26 Toward that end, scrutiny of the Constitution as a whole and of its historical common law roots often serves as the primary analytical tool for the Supreme Court.27 The Court considers whether the right advocated is so “deeply rooted in this Nation’s history and tradition” that it should be judicially protected,28 or whether conduct involves the ex-

with those from the other increases significantly. Similarly, Locke theorized that since all men began as equals, “[t]hey were equally free from the authority of another and equally vulnerable to the ‘invasion’ of another.” Id. at 10. It should be noted that in the eighteenth century, only men had political rights; women were generally excluded from the political arena. Id. at 20 n.10. Paradoxically, the enslavement of an entire race of people was generally ignored by those who embraced the equality among all men.

In order to avoid or reduce the conflicts that may arise from the exercise of one’s natural rights, we create a buffer zone beyond which we are not allowed to trespass even in the exercise of our natural rights. With a system of government established as the guardian of this neutral zone, rules are introduced to prevent any one person from encroaching into or compromising the integrity of the zone. Encroachment, depending on its severity, can cost the encroacher. The civil and criminal legal systems define the applicable costs for different levels of encroachment.

Having entered into this social compact to form a civil or political society, we necessarily relinquish some rights to the government which is installed as guardian of the neutral zone. Id. at 10. Notwithstanding this compromise, Locke realized that “[t]here are, however, certain natural and inalienable rights that cannot be ceded.” Id. The resulting system is one where “[t]he needs and rights of individuals are the basis for—and the limits of—political society. Instead of individuals subordinating their private interests to the needs of the community, the very purpose of the community [is] to give individuals freedom to pursue their private interests.” Id at 18. Simply stated, the purpose of our government is to protect the individual liberty of every citizen. Id.


26. See, e.g., TRIBE, supra note 21.

27. See, e.g., Roe, 410 U.S. at 152.

ercise of "personal rights that can be deemed 'fundamental' or 'im-
plicit in the concept of ordered liberty.'" Implicit in the Court's
reasoning is that one must be free to define oneself through self-
awareness and freedom of conscience. Thus, self-definition must be
the fundamental human right that is inseparable from human existence
and from which all other rights are born.30

A. Evolution of the Right to Refuse Treatment

The continuing evolution of the right to refuse treatment is one
example of the courts' mastery at using the Constitution and common
law to identify a fundamental right not enumerated in the Bill of
Rights. The basic foundation of the right to refuse medical treatment
is the common law concept of individual self-determination.31 At
common law, the concept of individual self-determination created a
zone of autonomy in which a patient's choice took precedence over
that of her physician.32 The scope of this concept has been signifi-
cantly broadened over the years. Today, it is generally accepted that a
patient may refuse any medical treatment, "even that which may save
or prolong her life."33 It is immaterial whether the patient lives or

494, 503 (1977) (Powell, J.). The basic analytical tools include examination of the legal
literature, caselaw and the common law history of the particular right in question. See
FARBER & SHERRY, supra note 23, at 270.

29. See Roe, 410 U.S. at 152 (quoting Palko v. Connecticut, 302 U.S. 319, 325 (1937)).
The theory that government exists for the sole purpose of protecting the natural rights of its
citizens did not escape Americans at the time of the Constitution. See FARBER & SHERRY,
supra note 23, at 10. However, Locke, whose theories were readily embraced by the found-
ing generation, also understood that in order to fully protect each citizen, certain rights had
to be relinquished to the government. Id. Consequently, liberty in an ordered society is "nar-
rrower . . . than the general capacity to exercise all natural rights." Id.

Despite its narrower scope in an ordered society, however, liberty by any definition
must include the irreducible minima that define who and what we are. Decisions that are
important to our individual destiny, to our identity, or that allow us to define ourselves as
human beings must remain impervious to governmental interference.

30. Rubenfeld, supra note 18, at 754. Whether those rights are enumerated in the Con-
stitution, reserved by the Ninth Amendment, or rooted in common law, they are derivative of
our liberty to define who and what we are without governmental interference. Id. Whether the
Court calls this liberty to self-definition a "right to privacy," Roe, 470 U.S. at 154, or a
"liberty interest," Cruzan v. Director, Mo. Dep't of Health, 497 U.S. 261, 278-79 (1990), it
is simply defining a zone of liberty beyond which the government's reach will not be tolerat-
ed.

31. See Schloendoff v. Society of N.Y. Hosp., 105 N.E. 92, 93 (N.Y. 1914), overruled
on other grounds by Bing v. Thunig, 143 N.E.2d 3 (N.Y. 1957).

32. See Developments in the Law-Medical Technology and the Law, 103 HARV. L.

33. Bouvia v. Superior Court, 225 Cal. Rptr. 297, 300 (Ct. App. 1986) (holding that a
dies as a result of this exercise of her right to self-determination. Materiality resides in the fact that the patient is defining the conditions under which she lives or dies.34 “Every human being of adult years and sound mind has a right to determine what shall be done with his own body; and a surgeon who performs an operation without his patient’s consent commits an assault...”35

More than two decades prior to Schloendorff v. Society of New York Hospital, in Union Pacific Railway Company v. Botsford,36 the Supreme Court observed:

No right is held more sacred, or is more carefully guarded, by the common law, than the right of every individual to the possession and control of his own person, free from all restraint or interference of others, unless by clear and unquestionable authority of law. As well said by Judge Cooley, “The right to one’s person may be said to be a right of complete immunity: to be let alone.”37

Once an obscure phenomenon, refusal of medical treatment has surfaced as the focal point of numerous judicial opinions and legal and ethical periodicals. The current right to refuse medical treatment is contained in In re Quinlan38 and its progeny. Given the emergence of the constitutional right to privacy39 and the Supreme Court’s recognition in Roe v. Wade that such a right could extend to fundamental questions of life and health,40 the Quinlan court reasoned that a patient’s right to privacy supports her right to refuse medical treatment.41 Several state courts have embraced the reasoning of Quinlan,42 and the Supreme Court may not be far behind. Recently, in Cruzan v. Director, Missouri Department of Health,43 the Supreme Court went a long way toward extending constitutional protec-

28-year-old quadriplegic cerebral palsy victim may assert her constitutional right to refuse nasogastric hydration and nutrition).

34. Id. at 305.
35. Schloendorff, 105 N.E. at 93.
36. 141 U.S. 250 (1891).
37. Id. at 251 (quoting THOMAS M. COOLEY, A TREATISE ON THE LAW OF TORTS 29 (2d ed. 1888)).
39. See supra notes 16-19.
40. 410 U.S. at 153-54.
41. 355 A.2d at 663-64.
tion to the right of a competent patient to refuse medical treatment and establishing it as a fundamental constitutional right.\(^{44}\)

_Cruzan_ originated in the court system of Missouri.\(^{45}\) On appeal, the highest court of Missouri reasoned that an incompetent’s wish to withdraw medical treatment must be proven by clear and convincing evidence.\(^{46}\) Moreover, according to the Missouri court, there is “no unfettered right of privacy under our Constitution that would support the right of a person to refuse medical treatment in every circumstance.”\(^{47}\) The court, based on prior right-to-privacy decisions, also “car[ried] grave doubts as to the applicability of privacy rights to decisions to terminate the provision of food and water to an incompetent patient.”\(^{48}\) Even if such right existed, the court proposed, the State’s interest “in life, both its preservation and its sanctity” outweighed the personal interest of the individual or her family to refuse treatment.\(^{49}\) Accordingly, the Supreme Court of Missouri, by a divided four-to-three vote, declined to uphold a right which, according to some courts, is unquestionable and viable even if refusal of treatment leads to the patient’s death.\(^{50}\) Since petitioner had failed to prove her

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44. _Id._ at 278 (pronouncing a “constitutionally protected liberty interest in refusing unwanted medical treatment”); _id._ at 305 (Brennan, J., dissenting) (“Freedom from unwanted medical attention is unquestionably among those principles ‘so rooted in the traditions and conscience of our people as to be ranked as fundamental.’”) (quoting _Snyder v. Massachusetts_, 291 U.S. 97, 105 (1934)); see also Sanford H. Kadish, _Letting Patients Die: Legal and Moral Reflections_, 80 CAL. L. REV. 857, 863 (1992).

45. See _Cruzan v. Harmon_, 760 S.W.2d 408 (Mo. 1989) (en banc), _aff’d sub nom._ _Cruzan v. Director, Mo. Dep’t of Health_, 497 U.S. 261 (1990). Nancy Cruzan was involved in a car accident in January of 1983. She was found lifeless and not breathing. _Cruzan_, 497 U.S. at 266. By the time rescuers managed to restart her heartbeat and breathing, she had suffered irreversible brain damage. _Id._ A gastrostomy tube, through which nutrition and hydration was delivered to the patient, was implanted in her stomach. _Id._ After lingering in this persistent vegetative state for several years, Nancy’s parents requested that artificial nutrition and hydration be discontinued. _Id._ at 267. The hospital denied their request. _Id._ at 268. Thereupon, the Cruzans brought suit to compel the hospital to comply with their request. _Id._ The trial court held in favor of the Cruzans and concluded that, under both the Federal and Missouri Constitutions, the patient retained the right to terminate treatment. _Id._

46. _Cruzan v. Harmon_, 760 S.W.2d at 425.

47. _Id._ at 417.

48. _Id._ at 418.

49. _Id._ at 424.

50. See, _e.g._, _Bouvia v. Superior Court_, 225 Cal. Rptr. 297, 304-06 (Ct. App. 1986). The Supreme Court of Missouri reached its decision despite acknowledging the existence of a common law right to individual autonomy. _See Cruzan_, 760 S.W.2d at 416. The court stated: [T]he only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant. He cannot rightfully be compelled to do or to forebear because it will be better for him to do so, because

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wish to terminate treatment by clear and convincing evidence, the Court held that medical treatment should continue.

The United States Supreme Court, by a sharply fragmented five-to-four vote, affirmed the decision of the Supreme Court of Missouri.51 While affirming the standard of proof established by Missouri, the Supreme Court eschewed Missouri's reasoning, which denied the existence of the right to refuse treatment.52 The Supreme Court opinion, written by Chief Justice Rehnquist in which Justices White, O'Connor, Scalia, and Kennedy joined, inferred from prior decisions a constitutional right for a competent patient to refuse medical treatment, even if such treatment would be indispensable to life.53 In her concurring opinion, Justice O'Connor vehemently insisted that the Fourteenth Amendment protects the right of individuals to reject undesired medical treatment.54 Justice Brennan's dissenting opinion, in which Justices Marshall and Blackmun joined, found the right to be free of unwanted artificial nutrition and hydration to be a "fundamental right."55 Justice Stevens' dissenting opinion found that "the Constitution requires the State to care for Nancy Cruzan's life in a way that gives appropriate respect to her own best interests."56 Although concurring in the Court's decision, Justice Scalia remained alone in his view that the Constitution implicitly committed the issue at hand to the state legislative process.57

From this solitary position, however, Justice Scalia adroitly exposed the sophistry in the reasoning that some state courts had heretofore embraced. In his concurrence, the learned Justice specifically rejected the active/passive distinction that these courts had espoused...
as a rationale for allowing a patient to refuse treatment.\footnote{58} Prior to\textit{ Cruzan}, state courts resolved the confrontation between suicide and the consequence of voluntary refusal of life-sustaining treatment by establishing this active/passive distinction. This unfortunate legacy established a fictional line between "letting die," which the courts labeled passive, and conventional suicide, which they labeled active.\footnote{59}

The courts have proposed two different interpretations of this active/passive distinction. Both, however, start with the premise that life-sustaining treatment merely forestalls natural death from the underlying disease.\footnote{60} Under this deterministic theme, refusal of treatment simply allows nature to take its course.\footnote{61} The patient does not choose to die, but is simply a passive victim who is overwhelmed by her illness; nor does the physician who turns off the life support system help her die.\footnote{62} By turning a blind eye to the physician's act

\footnote{58} Id. at 296 (Scalia, J., concurring).

\footnote{59} Courts and commentators have defined the active method to include any procedure that accelerates the dying process. See, e.g., Beschle, supra note 18, at 328 nn.35-36 and accompanying text. The passive method, on the other hand, entails only that which goes no farther than the refusal of life-sustaining treatment. Id. at 328 n.36.

\footnote{60} See Donaldson v. Van de Kamp, 4 Cal. Rptr. 2d 59, 62 (Ct. App. 1992).

\footnote{61} See, e.g., id. at 63 ("The patient . . . who is being kept alive by a life-support system has taken a detour that usually postpones an immediate encounter with death . . . . Stopping the treatment allows the delayed meeting with death to take place."); Satz v. Perlmuter, 362 So. 2d 160, 162 (Fla. Dist. Ct. App. 1978); Superintendent of Belchertown State Sch. v. Saikewicz, 370 N.E.2d 417, 426 n.11 (Mass. 1977) (explaining that since death resulted from natural causes, the patient did not set the death producing agent in motion); In re Conroy, 486 A.2d 1209, 1224 (N.J. 1985) (holding that "[r]efusing medical intervention merely allows the disease to take its natural course").

\footnote{62} George J. Alexander,\textit{ Death by Directive.} 28\textit{ SANTA CLARA L. REV.} 67, 82 (1988). Absent this distinction, proponents of the right to refuse life-sustaining treatment would be compelled to acknowledge a radical break with accepted mores and open the floodgates to positions the courts have spurned. Courts have refused to endorse situations where the physician's active participation in a suicide is clear. See, e.g., State\textit{ ex rel. Thompson v. Kevorkian, No. 90-39063-AZ} (Cir. Ct. Oakland Cty., Mich., Feb. 5, 1991) reprinted in \textit{7 ISSUES IN LAW AND MED.} 107 (1991). But see Altman, supra note 12 (describing a grand jury that refused to indict a physician who admitted to having facilitated the suicide of a patient). California's reluctance to endorse premortem cryopreservation is, likewise, strongly influenced by the fact that the procedure would require the active participation of a scientist. See\textit{ Donaldson}, 4 Cal. Rptr. 2d at 62. Were it not for this reasoning, courts would have had to concede, for example, that the state may not act to prevent assisted suicide, although it may temporarily interrupt the progress of the suicide to assess the competence of the consent. See\textit{ Kadish, supra note 44, at 868. Thus, no one could prevent a law student who is upset at receiving a grade of "C" in Criminal Procedure from shooting himself in the head, so long as he was competent when he arrived at the decision. The possibility of achieving such unsavory results through an unbridled exercise of the right to autonomy or self-determination has motivated the courts to adopt this false dualism. See id. at 864; Matthews, supra note
of disconnecting a life-support system or a dialysis machine, courts immunize the physician against criminal liability and allow his act to fall on the omission side of the dichotomy. This line of demarcation, however, is logically and analytically indiscernible. As explained by Justice Scalia in his concurrence in *Cruzan*:

> It would not make much sense to say that one may not kill oneself by walking into the sea, but may sit on the beach until submerged by the incoming tide; or that one may not intentionally lock oneself into a cold storage locker, but may refrain from coming indoors when the temperature drops below freezing.

Under the first interpretation, it has been argued that the fictional line between affirmative acts causing death and passive refusals of lifesaving treatment satisfies the fundamental jurisprudential principle of prohibiting misfeasance but allowing nonfeasance. This argument is suspect. Consider a patient who awakens in the hospital and realizes, to her dismay, that she has been attached to a life-support system. Thereupon, the patient explicitly requests that she be removed from the life-support system; however, the hospital personnel refuses to comply with her request. Finally, the patient detaches the system herself and dies moments later. It is highly unlikely that a court would interpret the intentional removal of a system, intended to maintain the very life of a non-consenting person, as a nonfeasance, or claim that the patient was a passive victim of her illness. According to current legal standards, such action would constitute suicide since the patient will have achieved her own death intentionally and by affirmative actions. On the other hand, if the patient’s physician simply complied with the patient’s request that the life-support system be removed, the outcome would be different. Presumably, it would be interpreted as a nonfeasance since the physician would only be effecting the desire of the patient. The determinant seems to be whether the person wishes to die, as would be the case when the patient takes affirmative action to detach herself from the life-support system, or

63. See Kadish, *supra* note 44, at 864.
64. 497 U.S. at 296 (Scalia, J., concurring).
65. See Matthews, *supra* note 18, at 737; see also Kadish, *supra* note 44, at 864 (“Perhaps there is some support for this approach in the legal principle that imposes no duty to act to prevent a prohibited harm except in specified circumstances.”).
simply wishes to have life-sustaining treatment removed. Some commentators find this distinction to be useless and generally “too insensitive to be ethical.”

The second interpretation of this dichotomy is grounded more on the voluntary nature of the patient’s decision rather than on the passive nature of the methods used. This is the more persuasive view, since it now has the strong arm of the United States Supreme Court in its corner. The Court has recognized a patient’s right to refuse treatment when there is clear and convincing evidence of the patient’s desire to refuse treatment. Under the Court’s analysis, this standard of proof encompasses the State’s interests that must be weighed in the context of the right to refuse treatment. Accordingly, once the patient’s desire has been proven by clear and convincing evidence, the patient’s choice should outweigh the countervailing state interests. Satisfying the required burden of proof also validates the patient’s competency at the time she makes the decision. Therefore, it is evident that the basic requirement is that the patient be competent when she makes the decision to forego treatment. Under this interpretation, a patient who has detached herself from a life-support system, with or without the help of a physician, and has died soon after has not committed suicide. As long as the patient unambiguously and explicitly expressed her desire to be removed from the life-support system and was competent when she made that decision, her wish will be honored.

Similarly, under this interpretation, premortem cryopreservation should be constitutionally protected if the right is limited to competent, terminally ill patients. Grounding the right on the voluntary nature of the decision should also alleviate the fear that patients will

67. See Alexander, supra note 62, at 83.
68. See Beschle, supra note 18, at 331.
70. Id. at 281-83.
71. The rationality of the decision, according to some cases, is immaterial. See, e.g., Lane v. Candura, 376 N.E.2d 1232, 1235-36 (Mass. App. Ct. 1978) (respecting a patient’s decision not to submit to amputation of her gangrenous foot and explaining that the irrationality of the patient’s decision did not justify a conclusion that she was legally incompetent). This interpretation thus shows great respect for personal autonomy. However, respect for personal autonomy does not mean that one is completely free to exercise all rights unconditionally. Generally, there are state interests to be considered. See infra notes 197-233 and accompanying text. While a general state interest in preserving life rarely trumps the patient’s choice under this interpretation, other state interests, such as the prevention of suicide and protection of minor children, may be more compelling.
be coerced into premortem cryopreservation. Establishing procedures that require physicians to prove by clear and convincing evidence that the patient's choice was made voluntarily, and that the patient was terminally ill, could curtail the possibility of coercion. Mindful that the truly bad actor will not be deterred by the establishment of strict guidelines for premortem cryopreservation, any remaining threat of coercion should be handled by tort and criminal laws.

B. Right to Premortem Cryopreservation

The right of self-determination protects one's right to control one's bodily integrity and shields a person from nonconsensual bodily invasions. It establishes the limits of the medical profession's control over the patient's body and vests in the patient the right to refuse medical treatment. Logically, the right to self-determination should also support a patient's right to actively and independently direct her health care with the assistance of a physician.

In an effort to direct his own health care, Thomas Donaldson sought to have his body cryopreserved premortem, before his pro-

72. In Donaldson v. Van de Kamp, one of the reasons cited by the California Court of Appeal for denying Donaldson request for injunctive relief was that patients may be coerced into undergoing cryopreservation. 4 Cal. Rptr. 2d 59, 64 (Ct. App. 1992) (relying on the difficulty of evaluating the assister's motives or determining the presence of undue influence in denying petitioner's request for an injunction).

73. The Supreme Court recently upheld this standard of proof in cases involving the right to refuse treatment. See Cruzan, 497 U.S. at 261.

74. Recently, the Netherlands adopted a set of guidelines for voluntary euthanasia of terminally ill patients. See Tamara Jones, Netherlands Law Sets Guidelines for Euthanasia, L.A. TIMES, Feb. 10, 1993, at A1. Many of the requirements have the effect of reducing, if not entirely eliminating, the possibility of coercion. For example, the law requires that the patient make the request repeatedly and entirely of his or her own free will. Id. Furthermore, the physician is required to consult with the patient alone to ensure that the patient is not under duress, and follow the consultation with a report to the appropriate authorities. Id. Additional concerns with coercion are alleviated by requiring that two physicians be consulted to confirm that all criteria are met. Id. Physicians who fail to meet the established guidelines may still face criminal charges. Id.


76. See Cruzan, 497 U.S. at 261. Certain state interests, however, play an important role in the expansion or constriction of that right. For example, the right to self-determination is severely constricted when one is incarcerated for some criminal act. See Washington v. Harper, 494 U.S. 210, 222 (1990) ("The extent of a prisoner's right . . . to avoid the unwanted administration of antipsychotic drugs must be defined in the context of the inmate's confinement.").

77. See United States v. Charters, 829 F.2d 479, 490 (4th Cir. 1987), cert. denied, 494 U.S. 1016 (1990) ("The choice to undergo treatment is an individualized one which reflects the patient's unique perspective.").
gressing brain tumor overwhelmed him.\textsuperscript{78} The petitioner conceded that after cryopreservation, he would be dead pursuant to section 7180 of the California Health and Safety Code,\textsuperscript{79} which instructs that the determination of death must be made “in accordance with accepted medical standards.” Under the current medical standards, a person

\textsuperscript{78} See Donaldson v. Van de Kamp, 4 Cal. Rptr. 2d 59, 59.

\textsuperscript{79} Determination of death

(a) An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards.

(b) This article shall be applied and construed to effectuate its general purpose to make uniform the law with respect to the subject of this article among states enacting it.

c) This article may be cited as the Uniform Determination of Death Act.

\textsuperscript{80} See 1992 Neb. Laws 906. Prior to the adoption of the UDDA, the cessation of cardiac and respiratory functions had been interpreted as death. The accuracy with which one could predict clinical death once the signs of a beating heart and breathing were absent led to their status as indicators of life. See, e.g., BLACK'S LAW DICTIONARY 488 (4th ed. 1968) (defining death as the “cessation of life; the ceasing to exist; defined by physicians as a total stoppage of the circulation of the blood, and a cessation of the animal and vital functions consequent thereon, such as respiration, pulsation, etc.”); DORLAND'S ILLUSTRATED MEDICAL DICTIONARY 434 (27th ed. 1988) (defining death as “the cessation of life; permanent cessation of all vital bodily functions”). These earlier definitions of death were formulated at a time when medical science considered the heart the center of the body's functions. See William F. Amet, Comment, The Criteria For Determining Death in Vital Organ Transplants—A Medico-Legal Dilemma, 38 Mo. L. Rev. 220, 222 & n.11 (1973); see also James E. Hannah, The Signs of Death: Historical Review, 28 N.C. MED. J. 457, 458 (1967). Consequently, little emphasis was placed on the functions of the brain. According to some commentators, two factors contributed to the lack of focus on brain functions. The first was “the medical profession’s desire to place the definition of death on an integrated basis,
is legally dead if she has sustained irreversible cessation of circulatory and respiratory functions, or irreversible cessation of all functions of the entire brain, including the brain stem. As a result, the scientists who assist in the cryopreservation of a subject would have either committed a homicide or aided or encouraged a suicide.

stressing the idea of total stoppage of bodily functions.” Amet, supra, at 222. The second was the paucity of information that existed about the processes of the human brain. Id.

Advances in medical technology quickly demonstrated the inadequacies of defining death in terms of the cessation of cardiac and respiratory functions. Specifically, the introduction of respiration machines and electronic cardiac stimulation made it easier to maintain respiration and heartbeat, even with a severely damaged brain. Id. at 223. Through the use of these machines, a patient could conceivably be brain-dead, with little or no blood flow to the brain, and still be considered alive under the earlier definitions of death, as long as artificial respiration and electronic heart stimulation are maintained.

81. See CAL. HEALTH & SAFETY CODE § 7180. The real impetus toward a change in the traditional definitions of death was the advent of vital organ transplantation techniques, specifically heart and lung transplants. Amet, supra note 80, at 224. The need to have at least a functional heart, lung, or liver for transplantation brought into focus the inadequacies of the earlier legal definitions of death. Id.; see also J. STUART SHOWALTER, Determining Death: The Legal and Theological Aspects of Brain-Related Criteria, 27 CATH. L. 112, 117 (1982). Under these definitions, a surgeon would have had to wait for heartbeat and respiration to stop before removing the desired organ. Amet, supra note 80 at 224. At this stage, the vital organ would have already begun to deteriorate, thus significantly reducing the probability for a successful transplant. Id.; see also Eliot Corday, Death in Human Transplantation, 55 JAMA 629 (1969). As a result, physicians began to use brain death as the determinant factor in deciding the time of clinical death. This daring step in the evolution of the current standards of death was not without legal consequences. See, e.g., People v. Lyons, 15 Crim. L. Rep. (BNA) 2240 (Cal. Super. Ct., May 21, 1974); see also C. Anthony Friloux, Jr., Death, When Does it Occur?, 27 BAYLOR L. REV. 10, 14-15 (1975). Although no surgeon had ever been held criminally liable for removing a vital organ from a person before his heartbeat and respiration stopped, the medical community lobbied intensely for a reformulation of the legal definition of death, and encouraged elected officials to undertake the task. See Alexander M. Capron & Leon R. Kass, A Statutory Definition of the Standards For Determining Human Death: An Appraisal and a Proposal, 121 U. PA. L. REV. 87, 92 & n.19 (1972). These efforts culminated in the adoption of the UDDA.


83. See CAL. PENAL CODE § 401 (West 1993). Our antipathy toward suicide has its origin in English common law. William Blackstone explained the rationale for this antipathy in the following way:

Self-Murder, the pretended heroism, but real cowardice, of the Stoic philosophers, who destroyed themselves to avoid those ills which they had not the fortitude to endure . . . was punished by the Athenian law with cutting off the hand . . . . And also the law of England wisely and religiously considers, that no man hath a power to destroy life, but by commission from God, the author of it: and, as the suicide is guilty of a double offense: one spiritual . . . the other temporal, against the king who hath an interest in the preservation of all his subjects; the law has therefore ranked this among the highest crimes.

Tate v. Canonica, 5 Cal. Rptr. 28, 31-32 (Dist. Ct. App. 1960) (emphasis added) (quoting 4 WILLIAM BLACKSTONE, COMMENTARIES 189 (8th ed. 1778)).
The Donaldson court started its analysis by acknowledging a patient's right to medical self-determination.\textsuperscript{84} Citing Bouvia v. Superior Court,\textsuperscript{85} the court conceded that "a patient may refuse treatment even though withholding of treatment creates a life-threatening situation."\textsuperscript{86} Moreover, the Court acknowledged Donaldson's specific right to undergo cryopreservation as being equally as compelling as the State's general interest in protecting life.\textsuperscript{87} Despite these concessions, the court refused Donaldson's prayer for relief and held that he had no constitutional right to premortem cryogenic suspension. The stated rationale was that Donaldson was simply choosing to commit suicide with the assistance of others.\textsuperscript{88} Such action, according to the court, deeply offended the State's interest in ensuring that people are not influenced to kill themselves.\textsuperscript{89} Hence, the court concluded that the State's interest "must prevail over the individual[']s" because of the difficulty . . . of evaluating the motives of the assister or determining the presence of undue influence.\textsuperscript{90}

The court's reasoning in support of its conclusion that Donaldson would in fact be committing suicide was faulty. Furthermore, the nexus that the court tried to build between premortem cryopreservation and physician-assisted suicide was spurious. Once the goals of the two concepts are examined, the apparent analogy breaks down.

Suicide and cryopreservation cannot be equated. In order to commit suicide, one must have the specific intent or purpose to take one's life\textsuperscript{91} and must take deliberate action that results in one's

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84. 4 Cal. Rptr. 2d at 62; see also Cruzan v. Director, Mo. Dept of Health, 497 U.S. 261 (1990).
85. 225 Cal. Rptr. 297 (Ct. App. 1986).
86. Donaldson, 4 Cal. Rptr. 2d at 62.
87. Id. at 63. The state interests normally considered include preserving human life, preventing suicide, protecting innocent third parties such as children, and maintaining the ethical integrity of the medical profession. Id. at 62; see also infra notes 197-233 and accompanying text.
88. Donaldson, 4 Cal. Rptr. 2d at 63.
89. Id. at 64.
90. Id. That state interest, along with others, is addressed in part II of this Note.
91. See MODEL PENAL CODE § 2.02(2)(a) (1985) (Official Draft and Explanatory Notes): (a) \textit{Purpose}. A person acts purposely with respect to a material element of an offense when:
(i) if the element involves the nature of his conduct or the result thereof, it is his conscious object to engage in conduct of that nature or to cause such a result; and
Thus, in order to prove that Donaldson had in fact commit-

(ii) if the element involves the attendant circumstances, he is aware of the existence of such circumstances or he believes or hopes that they exist.

Id.

92. See, e.g., MICH. COMP. LAWS § 752.1022 (1992) (defining suicide or "[t]he voluntary self-termination of life" as "conduct by which a person expresses the specific intent to end, and attempts to cause the end of, his or her life"); see also Hepner v. Department of Labor & Indus., 250 P. 461, 463 (Wash. 1926) (suicide is "[a] voluntary willful choice determined by a moderately intelligent mental power which knows the purpose and the physical effect of the suicidal act") (quoting In re Sponatski, 108 N.E. 466, 468 (Mass. 1915)).


American proscriptions of assisting or causing suicide have their origins in early English common law. English common law treated suicide as a serious crime. See Shaffer, supra, at 349; see also George P. Smith, II, All's Well That Ends Well: Toward a Policy of Assisted Rational Suicide or Merely Enlightened Self-Determination?, 22 U.C. DAVIS L. REV. 275, 290 (1989). Punishment for the crime of suicide was quite severe. The body was treated with great ignominy; a stake was driven into the heart of the suicide, the body was quartered and buried in a crossroads. Donald M. Wright, Note, Criminal Aspects of Suicide in the United States, 7 N.C. CENT. L.J. 156, 157 (1975). Moreover, all personal property belonging to the suicide was forfeited to the Crown. Id. at 157.

Punishment for the crime was abolished in England in 1824. Id. However, suicide was not decriminalized in that country until 1961 with the enactment of the Suicide Act. See Smith, supra, at 307. The Suicide Act also abolished the crime of attempted suicide from English criminal law. Id. It would have been utterly illogical to outlaw the attempt of an act that is perfectly legal.

Suicide was criminalized on the rationale that killing oneself was a crime against God. See supra note 83. That rationale, however, did not survive the passage of the Establishment Clause in the United States. The Establishment Clause mandates that "Congress shall make no law respecting an establishment of religion." U.S. CONST. amend. I. The clause was intended to prevent government from using religion as a basis for abridging the civil rights of its citizens. See FARBER & SHERRY, supra note 23, at 228. During the Congressional debates of
ted suicide with the assistance of others, it must be proven beyond a reasonable doubt that he had the specific intent or purpose to take his own life and that he would in fact be dead under the standards set forth in California Health and Safety Code section 7180. But the element of intent is not satisfied in the case of premortem cryopreservation. Moreover, the available scientific data does not conclusively demonstrate that premortem cryopreservation results in death, i.e., the irreversible cessation of gross anatomical functions. These two issues will be discussed in turn.

1. Absence of Suicidal Intent

With complete judicial acquiescence, legislatures have defined suicide as requiring the specific intent or purpose to take one's own life. This definition, according to the courts, does not include the situation where a patient refuses life-sustaining treatment. Essentially, the courts reason that patients who refuse life-sustaining treatment may have no desire to bring about their own death; rather, "they may fervently wish to live, but to do so free of unwanted medical technology, surgery, or drugs, and without protracted suffering." Hence, they are not committing suicide.

This argument has drawn considerable attention from, and endorsement of, various scholars. They propose that in many cases involving treatment refusal, the patient's mental state is more suitably described as knowledge of imminent death rather than intent to cause

June 1789, James Madison proposed an earlier version of the Establishment Clause which unambiguously emphasized the distaste of Americans for a government founded on religion; after all, many of the colonists fled religious persecution. Id. The earlier draft of the clause, the essence of which became part of the first amendment, read: "The civil rights of none shall be abridged on account of religious belief or worship, nor shall any national religion be established, nor shall the full and equal rights of conscience be in any manner, or on any pretext, infringed." Id. (emphasis added).

On the other hand, the "temporal" reason for criminalizing suicide, to wit, the king's interest in preserving the lives of his subjects, remains viable in the United States as the "state interest in preserving human life." See supra note 83. Currently, additional countervailing state interests also figure prominently in the calculus to determine whether cryopreservation should be allowed. These interests are examined in the context of cryopreservation in part III of this Note. See infra notes 197-235 and accompanying text.

93. See CAL. HEALTH & SAFETY CODE § 7180.
94. See supra note 92; see also In re Conroy, 486 A.2d 1209, 1224 (N.J. 1985).
95. See, e.g., Superintendent of Belchertown State Sch. v. Saikewicz, 370 N.E.2d 417, 426 n.11 (Mass. 1977) (holding that "in refusing treatment the patient may not have the specific intent to die").
one's own death. The patient's purpose is to live free of medical treatment, despite his awareness of the practical certainty that his conduct will cause his death. The argument loses its appeal, however, when one considers a terminally ill patient who, in the face of medical futility, knows that the only way she can remain alive is to be attached to a life-support system. If she requests that she be removed from treatment, she will have purposefully established circumstances that are practically certain to hasten her death.

If one is to accept the reasoning that patients who refuse life-sustaining treatment lack suicidal intent, but in fact fervently wish to live, one must question the parallel that the Donaldson court drew between premortem cryopreservation and physician-assisted suicide. If there is ever a situation when the intent to die is not present, it is during premortem cryopreservation. The very premise of cryopreservation is the extension of life. The fact that the patient is willing to endure the procedure with the slightest hope of future revival is indicative of his desire to some day live "free of unwanted medical technology, surgery, or drugs, and without protracted suffering." Therefore, a patient such as Donaldson, who wishes to be cryopreserved is not committing suicide under this analysis because he does not intend to take his own life. If a lack of suicidal intent is the basis for extending constitutional protection to the right to refuse treatment, similar protection must be extended to cryopreservation.

97. See Kadish, supra note 44, at 867.
98. Id.
99. Id.; see also MODEL PENAL CODE § 2.02(2)(b) (1985) (Official Draft and Explanatory Notes):
   (b) Knowingly.
   A person acts knowingly with respect to a material element of an offense when:
   (i) if the element involves the nature of his conduct or the attendant circumstances, he is aware that his conduct is of that nature or that such circumstances exist; and
   (ii) if the element involves a result of his conduct, he is aware that it is practically certain that his conduct will cause such a result.

100. See WAYNE R. LAFAVE & AUSTIN W. SCOTT, JR., CRIMINAL LAW 218.
101. See Donaldson v. Van de Kamp, 4 Cal. Rptr. 2d 59, 63 (Ct. App. 1986) (reasoning that cryopreservation is equivalent to physician-assisted suicide).
2. Reversibility of Gross Anatomical Functions

In Donaldson, the petitioner conceded the applicability and satisfaction of California Health and Safety Code section 7180. He conceded that he would be dead under California Law. However, since cryopreservation is predicated on the reversibility of gross anatomical functions where biological and cellular deaths have been forestalled, the conclusion that Donaldson would be legally dead, as defined by section 7180, is debatable and far from certain. If charges of assisting suicide were to be levied against a scientist who had performed premortem cryopreservation, the prosecution might have some difficulty proving that the cessation of the patient’s gross anatomical functions are irreversible.

In order to survive a motion for a directed verdict of acquittal, the State would be required to produce scientific evidence, through expert testimony, that would prove beyond a reasonable doubt that the cessation of the subject’s gross anatomical functions and the supporting biological and cellular functions are irreversible. Given the burden of proving every material element beyond a reasonable doubt, the State would be required to produce scientific evidence, through expert testimony, that would prove beyond a reasonable doubt that the cessation of the subject’s gross anatomical functions and the supporting biological and cellular functions are irreversible.

104. Id.
105. See CAL. HEALTH & SAFETY CODE § 7180; cf. supra note 4.
106. Rule 702 of the Federal Rules of Evidence provides for opinion testimony by experts upon a determination by the court that: (a) the expert is sufficiently qualified in her field to be allowed to testify, and (b) the proffered evidence would be helpful to the trier of fact. Fed. R. Evid. 702; see also In re Agent Orange Prod. Liab. Litig., 611 F. Supp. 1225, 1241-42 (E.D.N.Y. 1985), aff'd, 818 F.2d 187 (2d Cir. 1987), cert. denied, Lombardi v. Dow Chem. Co., 487 U.S. 1234 (1988). The court must determine whether the expert's opinion is based on data reasonably relied upon by experts in the field and not on hearsay thought to be unreliable by other experts in the field. Agent Orange, 611 F. Supp. at 1244. However, doubts should be resolved in favor of admissibility. Id. at 1242. Any hearsay problem with regard to admissibility is resolved by Fed. R. Evid. 803, which provides exceptions to hearsay that accommodate this type of scientific evidence. Fed. R. Evid. 803. To the extent that the evidence is composed of published articles and treatises, it is admissible under Rule 803(18). Fed. R. Evid. 803(18). Furthermore, it may be admissible as records of regularly conducted activity. Fed. R. Evid. 803(6). Generally, researchers in any field produce, maintain, and publish reports of their research activities. These types of reports are admissible under Rule 803(6) unless they are untrustworthy. Id.

The court must also determine whether the expert’s conclusions are made with sufficient certainty to be useful given the applicable burdens of proof. See Agent Orange, 611 F. Supp. at 1244; see also Fed. R. Evid. 703. Thus, the decision to admit the scientific evidence is the product of a balancing test between the reliability and usefulness of the data used in formulating the expert’s opinion on the one hand, and the need to avoid waste of time, confusion of the trier of fact, and prejudice on the other hand.
doubt, the prosecution's expert should be required to state his conclusions with a reasonable degree of medical certainty. Moreover, since cryopreservation, by definition, contemplates revivification much later in the future, it would not be unreasonable to require the expert to testify with a reasonable degree of medical certainty that cryopreservation would remain irreversible even in the future. In light of the currently available scientific evidence and the dizzying speed of proliferation of scientific methodology, it is highly unlikely that any expert in the field of cryobiology would be willing to testify that the procedure is irreversible and would remain so in the future.

The State is unlikely to meet its burden on the issue of irreversibility. Scientists have demonstrated that the viability of biological and cellular activities is preserved during cryopreservation, and is usually restored after the thawing process. Moreover, techniques for cryopreserving organs for later transplantation are enjoying considerable success and acceptance in the field of cryobiology. Experiments on individual cells have led to the conclusion that cellular viability is not significantly affected by cryopreservation.

Even more demonstrative of the success of cryopreservation is its widespread use and acceptance in the fields of in vitro fertilization and embryo transfer. In a recent article, one scientist explained in

108. See Agent Orange, 611 F. Supp. at 1244; see also FED. R. EVID. 703.
109. See, e.g., Mike Adam et al., The Effect of Liquid Nitrogen Submersion on Cryopreserved Human Heart Valves, 27 CRYOBIOLOGY 605 (1990) (discussing the clinical use of human heart valves stored in liquid nitrogen at -130°C or below); Robyn Fisher et al., Cryopreservation of Pig and Human Liver Slices, 28 CRYOBIOLOGY 131 (1991) viability of cellular functions is significantly maintained after cryopreservation; pig liver slices retained 80-85% of protein synthesis, and human slices retained 54-89% of protein synthesis); see also Sheila F. Mathias et al., Preservation of Viable Cells in the Undercooled State, 22 CRYOBIOLOGY 537 (1985) (finding that yeast cells can be preserved undercooled at -20°C for at least 16 weeks with no detectable loss of viability); S. Randolph May & D. Phillip Roberts, Development of a Passive Device for Freezing Large Amounts of Transplantable Skin at One Time in a -70°C Mechanical Refrigerator, 25 CRYOBIOLOGY 186 (1988) (skin frozen at -70°C and rapidly thawed maintains biochemical activity for glucose oxidation, and provides a method for low cost cryopreservation of large amounts of allograft skin); James H. Southard, Viability Assays in Organ Preservation, 26 CRYOBIOLOGY 232 (1989) (review of the techniques that have been used to aid in the development of organ preservation).
110. See May & Roberts, supra note 109 (discussing skin allografts).
the abstract that:

The preservation of mammalian embryos has become a routine procedure. Thousands of live offspring have been produced from frozen-thawed embryos transferred into recipient foster mothers. . . . Species whose embryos have been successfully preserved include cattle, horse, . . . baboon, and human . . . . [T]he transfer of frozen-thawed embryos of domestic animals is becoming almost as efficient as is artificial insemination using frozen-thawed semen. . . . Maximum survival of embryos appears to be achieved when intracellular water does not crystallize during cooling or during warming.

As a result of the growing efficiency of embryo preservation, this method is being applied to a variety of practical situations . . . . The freezing of cattle embryos is being used with increasing frequency as an adjunct to commercial embryo transfer. . . . [F]inally, the preservation of human embryos is finding application in the field of in vitro fertilization. These results have removed the technique of cryopreservation from the realm of science fiction and placed it in the ranks of accepted scientific methodology.

A recent experiment conducted at the Medical Center for Fertility Diagnostics and In Vitro Fertilization and Embryo Transfer in Belgium decisively demonstrates how cryopreservation is being effectively used in the creation of human life. In that experiment, 237 human embryos, at different stages of development, were frozen for a period of one day to seven months. After thawing, between 71 and 79% of the pronucleate and multipronucleate embryos resumed their normal cleavage. Evidently, the biological and cellular activities were preserved through the freezing process. Moreover, of the forty cleaved embryos that were also frozen-thawed, fifteen (or 37.5%) survived thawing. Lastly, thirty-four cleaved embryos were frozen and thawed, then implanted in twenty patients during spontaneous cycles with the goal of achieving pregnancy; four patients became pregnant. These experiments demonstrate that cryopreservation is already accepted in certain areas of biology and is enjoying considerable success, although still in its infancy.

113. Leibo, supra note 112, at 269-70.
114. See Gordis, supra note 112.
115. Id. at 471.
116. Id.
117. Id.
There is a plethora of scientific evidence which, when taken together, point to the rapid evolution of cryobiology. Cryobiology is rapidly crossing from the realm of theoretical formulae to practical scientific methodology. Recently, a scientist froze a dog for twenty minutes at three degrees Celsius (approximately thirty-eight degrees Fahrenheit) with no adverse physiological effects. The dog’s body temperature was first lowered to twenty degrees Celsius (or sixty-eight degrees Fahrenheit). Following currently accepted cryobiological techniques, its blood was replaced with a previously developed blood substitute.

During the twenty minutes of suspended animation, the animal’s circulation was arrested and all life-support systems were shut off. After twenty minutes at three degrees Celsius, circulation was restarted, the blood substitute was replaced with the dog’s own blood, which had been appropriately refrigerated during the procedure, and the dog was thawed to normal body temperature. The animal was thawed to perfect health and had been living for nine months with no sign of ill health as of the time the results of the experiment were published.

Scientists are also learning to move individual atoms. This technique, referred to as nanotechnology, could be used to construct new molecules and the microscopic machines which proponents of cryopreservation plan to use in restoring the cellular integrity of cryopreserved subjects during the revival stage. Scientists envision these molecular computers as having the ability to mass-produce more of themselves or most of the material products of this planet. More importantly, they could be used to cure every disease. They could “be injected into the body to seek out and destroy diseased organisms or undo the damage” caused by diseases that are, to this day, incurable.

With the advent of nanotechnology and the concurrent progress

119. Id.
120. Id.
121. Id.
122. Id.
123. See Jon Van, Scientists Learn How to Move Individual Atoms, CHI. TRIB., April 5, 1990, at C1.
124. See id.; WOWK & DARWIN, supra note 3, at 16 (discussing a very speculative and futuristic plan for cryogenic revival).
126. Id.
being made in the field of cryobiology, successful revival of a cryopreserved person may not be far removed. In premortem cryopreservation, once a cure for the subject's disease becomes available, it is theorized that gross anatomical functions will be reestablished with the use of these molecular computers and the cure applied. The end result should be a living, breathing human being who is free of the terminal illness or disease that afflicted him just before cryopreservation. With the availability of such technology, a persuasive argument can be made that a cryopreserved subject is not dead as defined by the Uniform Determination of Death Act (the "UDDA"). The UDDA, which has been codified in a majority of states, requires that the cessation of gross anatomical functions be irreversible in order for a person to be declared dead. The gross anatomical functions of a cryopreserved subject will probably be capable of complete restoration once the technology is perfected.

III. PROMOTING AMENDMENTS TO STATUTES AGAINST AIDING OR ASSISTING SUICIDE

A majority of states have statutes that forbid assisted suicide. Courts and legislatures, however, have explicitly established the withholding or withdrawal of life-sustaining treatment as exceptions to these statutes. Although they may result in the patient's death, the withholding and withdrawal of life-sustaining treatment are constitutionally protected as exercises of the right to refuse treatment. It would be just as easy for legislatures to amend the existing statutes proscribing suicide assistance to establish an exception for premortem cryopreservation when requested by a competent, terminally ill patient. This Note proposes the following amendment to statutes forbidding assisting suicide:

If at least two independent physicians certify at least two months apart that a patient is terminally ill; that state of the art medical

128. Id.
129. See supra note 79.
130. See Smith, supra note 92, at 290-91.
131. For example, a statute in Nebraska provides that "[d]eath resulting from the withholding or withdrawal of life-sustaining treatment in accordance with the Rights of the Terminally Ill Act shall not constitute, for any purpose a suicide or homicide." NEB. REV. STAT. § 20-412(1) (Supp. 1992).
132. See supra notes 92-97 and accompanying text.
technology is unable to help the patient; that the patient will, within a reasonable degree of medical certainty, die within one year from the last date of certification; and the court finds no evidence of coercion or fraud; then nothing in this chapter prohibits a person from providing technical assistance to implement the wishes of a competent person so certified to undergo premortem cryopreservation.

The right to premortem cryopreservation advocated by this amendment, like the right to refuse treatment, would be an exercise of a person's right to self-determination. However, the right to self-determination presupposes a minimum level of capacity to act. The implication is that without such capacity people may make decisions that are inimical to their own well-being. Hence, decision-makers may need protection from their own choices. Accordingly, application of the proposed amendment requires a judicial determination of the patient's competency to decide to undergo premortem cryopreservation.

133. See Benjamin Freedman, Competence, Marginal and Otherwise: Concepts and Ethics, 4 INT'L J.L. & PSYCHIATRY 53 (1981); see also James F. Drane, Competency to Give an Informed Consent: A Model for Making Clinical Assessments, 252 JAMA 925 (1984). The key point is not so much that the incompetent person would make a decision that may run counter to her well-being; after all, competent people could make wrong choices that ultimately harm them without questioning the mental process through which they arrived at these choices. Notwithstanding the final choice made, the critical concern is that the integrity of the mental process that leads to the choice has not been compromised so as to render the decision-maker incapable of assigning values to each factual component of the decision to be made and properly weighing these values in her final choice. Of course, the value assigned to each component is personal; thus, the standard for evaluating the mental process leading to a specific choice must be subjective. See Freedman, supra, at 61.

134. Commentators agree that the determination of competency is a question for the courts, although it is generally understood that medical professionals, more specifically psychiatrists, are well-placed to initiate the inquiry. See, e.g., Freedman, supra note 133, at 60. According to judicial authority, however, the determination by medical professionals of the mental competence of a patient to guide the course of his medical treatment must submit to judicial evaluation. See, e.g., Riese v. Saint Mary's Hosp. & Medical Ctr., 271 Cal. Rptr. 199, 212 (Ct. App. 1987). The reasoning is that the scientific methods used to make the determination are not unimpeachable. Id. This methodological imprecision combined with the inherent complexities of the human mind forecloses any possibility of achieving scientific certainty. Id. Moreover, exemption of medical determinations of competency from such judicial evaluation would grant physicians a power over others that is inimical to the great value society places on the autonomy of the individual. Id. at 213. But see Drane, supra note 133, at 927 (attempting to alleviate the fear that too much power will shift toward physicians who make competency determinations and away from patients whose choices should be respected, by arguing that any increase in the physicians' power actually serves the patients' welfare and that this loss in the patients' power never reaches the point where patients' self-determination is set aside).
A. Determination of Competency

There are two levels of inquiry that must be conducted in determining a patient's competency. The threshold inquiry is whether the patient is conscious and lucid enough to express a desire to undergo the procedure. Assuming that the patient's consciousness and lucidity are authenticated, the court will next inquire whether the patient is competent.

Presumptively, people are competent to make the decisions that affect their personal life, provided that they have the necessary prerequisites to make an informed decision. The underlying rationale for the presumption is that the individual's informed decision is the best decision for that individual. The patient, therefore, is in the "best position thoroughly to assess and evaluate the circumstances of his own life, the effect that different medical treatments will have on the quality of that life, and ultimately to make the value judgments that individuals in our society have a right to make for them-
selves. There must be procedural safeguards to insure that the patient’s decision is founded on accurate and medically reliable facts. The most obvious of these safeguards, and simplest to implement, is to require that the patient’s diagnosis and prognosis be assessed in light of currently available technology.

Competency can be evaluated through a judicial determination or a medical determination. However, judges have indiscriminately adopted clinicians’ assessments to determine competency. During a judicial evaluation of competency, courts often apply the test traditionally employed in the context of informed consent, i.e. “whether the patient is sufficiently able to comprehend his situation, the alternatives available, and the risks and possible benefits of each alternative, so as to make an informed decision.” Analysis of the test, however, reveals that the approaches used during a medical determination often serve as the basis of the court’s evaluation. In the medical field,

140. Charters, 829 F.2d at 495.
142. Arguably, projected advancements in technology should also be evaluated since they may impact upon the patient’s prognosis. Of course, our evaluations should be limited to projected advancements which are expected to occur within a reasonable time, so that the patient may have an opportunity to benefit from them.
143. See Wolff, supra note 139, at 749.
144. Matthews, supra note 18, at 725; see also Fosmire v. Nicoleau, 75 N.Y.2d 218, 225 (1985) (in determining competence, “the court should consider whether the patient has made a decision to decline the medical treatment, is fully aware of the consequences and alternatives, and is competent to make the choice”).
145. See Thomas G. Gutheil, M.D. & Paul S. Appelbaum, M.D., Clinical Handbook of Psychiatry and the Law 215 (1982). Arguably, a court’s adoption of the medical assessment of competency is favorable to the patient. It guarantees a decision based on true scientific facts provided by the treating physician. To the extent that judges do not possess the medical expertise to reach decisions on matters of mental health and their impact on patient competence, reliance on the medical expert’s scientific evidence adds accuracy and credibility to the judge’s decision. On the other hand, an adversarial proceeding where the patient is challenging the determination made by the treating physician with regard to the patient’s competency necessarily puts the patient at a disadvantage if judges base their decisions strictly on the physician’s assessment. See Wolff, supra note 139, at 750. The proposed solution is that judges should not rely solely on the physician’s evidence; rather, they should use all available evidence in addition to the scientific evidence provided by the treating physician.

This solution seems to suggest, albeit subliminally, that rationality can be demonstrated in the way in which a person orders his life within our society. Thus, decisions other than medical treatment, but involving equivalent seriousness and complexity, may be admitted in evaluating a patient’s competence to make medical treatment decisions. This argument is supported by Benjamin Freedman’s proposal that competence should perhaps be judged in a dispositional way. See Freedman, supra note 133, at 65. He explains that:

If a person has been disposed to be competent—if he has ordered his life within
five approaches have been utilized in determining competency: “(1) evidencing a choice; (2) reasonable outcome of choice; (3) rational reasons for choice; (4) ability to understand; and (5) actual understanding.” The following subsections analyze the applicability of each approach to the proposed amendment.

1. Evidencing a Choice

Under this test, “[o]ne is competent to consent to treatment if one is able to express consent to, or refusal of, that treatment, for whatever reasons and despite the seeming unreasonableness of the outcome.” The test appears to show great respect for, and deference to, individual autonomy, since it does not attempt to evaluate the patient’s rationale for making a choice.

Notwithstanding its apparent respect for individual autonomy, the “Evidencing a Choice” test may be too minimal to be useful in the proposed statutory scheme and runs counter to the intent of the amendment. Any decision in favor of or against a procedure would not be questioned because it would be indicative of competence. Whether the choice is based on faulty information or whether the patient understands the facts necessary to formulate the decision is inconsequential. Indeed, there would be no way of evaluating the patient’s understanding of the factual infrastructure upon which the choice is built. One could not conclusively state that the patient intended to make the choice evidenced. Consequently, any further inquiry into the patient’s maturity, intellect, or emotional state would be
superfluous for the purposes of this test.\textsuperscript{149}

Furthermore, the test presents no analytical method for differentiating between a true choice and one that is simply an artifact resulting from the very application of the test. Illustratively, if a patient is presented with a set of choices and requested to select one, it is highly likely that the patient will choose one of the choices presented. However, that choice may not be the result of conscientious deliberation and comprehension of the choices. A particular alternative may be chosen simply because it figures among the choices presented. Hence, the test never truly addresses "the question to which competency is the answer."\textsuperscript{150}

In a society where there is no test for competency, all consents and refusals would be unconditionally accepted. Incompetence would be presumed only where there is an absence of decision\textsuperscript{151} or possibly where there is an expression of two mutually exclusive choices.\textsuperscript{152} Paradoxically, the identical result is achieved under this "Evidencing a Choice" test, which purports to test patient competency.\textsuperscript{153} The test's apparent deference to individual autonomy is in fact an artifact of its application. Arguably, the test does not care enough about individual autonomy to make a conscientious effort to weigh it in the evaluation of patient competence.

The statutory scheme proffered in this Note requires more than simply making a choice in favor of cryopreservation. It requires medical evaluation of the patient's prognosis and verification of the diagnosis by at least two physicians. Thus, evidencing a choice as an approach for measuring competency is not satisfactory under this statutory scheme.

2. Reasonable Outcome of Choice

Under the "Reasonable Outcome of Choice" test, one is competent if one decides in favor of a choice, the outcome of which is reasonable.\textsuperscript{154} The test would logically require that a qualified ap-
praiser evaluate the consequences flowing from the patient’s choice and concur that such a course of action is reasonable. The patient’s decision, under this approach, is disregarded if the appraiser simply thinks the consequences flowing from that choice are potentially too harmful to the patient. Closer scrutiny of this test reveals its paternalistic attitude and utter disregard for patient autonomy.  

The deficiency in this test resides in the fact that it focuses only on the results of the choice made, while completely neglecting the mental process which led to the choice. The test severs from consideration the very aspect of choice that is indicative of mental competence. Consequently, courts and commentators have criticized the test in unison. The Fourth Circuit vehemently voiced its intolerance for this test in *United States v. Charters*. There, the court stated that “a test which . . . evaluates competency according to the results of decisions[] is too paternalistic and poses a tremendous threat to the right of the individual to make choices which reflect his unique concerns.” Freedman adds a less sonorous but equally persuasive voice by explaining that freedom is to be found in a process, not in a particular result. Since one can reach the same result through autonomous or coerced action, Freedman correctly identifies the actual mental process leading to the choice as the pivotal player in the determination of competency.

Given the medical profession’s unwillingness to question the fundamentals of the Hippocratic Oath, a physician is likely to veto as incompetent any decision which results in an unpopular medical outcome. Thus, a patient who decides to forego life-sustaining treat-

155. *Id.* (suggesting that the “Reasonable Outcome of Choice” virtually eliminates patient choice); *see also* United States v. Charters, 829 F.2d 479, 496 n.26 (4th Cir. 1987), *cert. denied*, 494 U.S. 1016 (1990).
157. *E.g.*, *id.* at 59-61; *see also* Charters, 829 F.2d at 496 n.26.
158. 829 F.2d 479.
159. 829 F.2d 479.
ment or undergo premortem cryopreservation is more likely to be declared incompetent. Medical professionals are likely to consider the decision irrational and not a true expression of the patient’s will. “It hardly needs to be said that if a person can be declared incompetent based on disagreement with a medical choice he has made, the right to make personalized and individual decisions concerning one’s own body would become a nullity.”

On the other hand, the medically correct decision, one from which flows a popular outcome, is usually accepted as a sign of competence. Essentially, if there is the slightest chance of survival with treatment, then consenting to treatment should, presumably, be the choice of a competent patient. Problems arise, however, when a competent patient refuses treatment or chooses to undergo a procedure like premortem cryopreservation. Such a patient is more likely to be labelled incompetent. The patient would be penalized simply for not choosing conventional treatment. Clearly, under the “Reasonable Outcome of Choice” test “your choice is obeyed not because you decided it, nor because you decided it, but rather because you decided it.” Like the “Evidencing a Choice” test, the “Reasonable Outcome of Choice” shows its shortcoming by failing to address the question to which competency is the answer.

An alternative way of analyzing the “Reasonable Outcome of Choice” approach is to view it in light of the decision to be made and the disparity between the foreseeable outcomes. Illustratively, a choice to forego an available cure for an acute condition that can cause death if left untreated would not trump the choice to accept the cure and live. Under such circumstances, the choice in favor of accepting the cure is weightier. Contrarily, the choice to undergo premortem cryopreservation should trump a choice to accept treatment where such treatment would be futile. If medical technology is impotent, the patient would still face death within a relatively short period of time; on the other hand, the patient may choose to undergo cryopreservation sometime prior to natural death, with the hope of future revival. Given the disparity between these two outcomes, the choice is clear; premortem cryopreservation is far more desirable,

162. Charters, 829 F.2d at 495.
163. But see Department of Human Servs. v. Northern, 563 S.W.2d 197, 210 (Tenn. Ct. App. 1978) (indicating that a choice unreasonable to others, but made by a competent, informed patient would be honored).
164. Freedman, supra note 133, at 61.
since it is the only choice which really provides the patient with the possibility of life.

The judicial inquiry into the patient's competency should not rest on a blanket statement that the patient is incompetent simply because the patient chose a course that is unpopular with the medical profession. Rather, the state should have the burden of proving by clear and convincing evidence that its proposal for the patient's therapy is better and more rational than the choice made by the patient. Rather than falsely assume that result is the sole factor, i.e., that process has nothing to do with competence, the state should prove that no reasonable person would rationally choose premortem cryopreservation over its proposal.\textsuperscript{165}

It has been argued that the "Reasonable Outcome of Choice" test fosters the social goals that are represented by the state's interests in preserving life and maintaining the integrity of the medical profession.\textsuperscript{166} Analysis of these countervailing state interests reveal that they are not compelling enough to prevent a competent, terminally ill patient from undergoing premortem cryopreservation.\textsuperscript{167}

3. Rational Reasons for Choice

Of all the tests used to evaluate patient competency, the "Rational Reasons" test is the most reliable. Under this test, "[o]ne is competent to consent to treatment if one has followed a rational process in making up one's mind, if one can give or has given rational reasons for the choice made."\textsuperscript{168} The reliability of the test stems from the fact that it actually evaluates the mental process leading to a particular decision. The "Rational Reasons" test concerns itself with what goes into the decision and not merely with the results flowing from the decision.\textsuperscript{169}

Assuming that the patient has received reliable information, the test evaluates how the patient manipulates the information to reach a decision.\textsuperscript{170} Once presented with the relevant information, the patient

\textsuperscript{165} The State's proposal is for the patient to choose death. To the extent that the patient could not be forced to submit to any kind of medical treatment unless certain State interests are found to be weightier than his or her decision to refuse treatment, \textit{see infra}, notes 197-233 and accompanying text, the state may well be condemning the patient to a painful death preceded by a gradual loss of dignity and self-control.

\textsuperscript{166} \textit{See Wolff, supra} note 139, at 745.

\textsuperscript{167} \textit{See infra} notes 197-233 and accompanying text.

\textsuperscript{168} \textit{See Freedman, supra} note 133, at 59.

\textsuperscript{169} \textit{See Wolff, supra} note 139, at 746 (1990).

\textsuperscript{170} \textit{See id.}
should be able to formulate premises that are acceptable in our society.\textsuperscript{171} In other words, these premises must be recognizable by others so that if any member of the society were presented with the same information under the same circumstances, manipulation of the information should lead to an equivalent set of premises.\textsuperscript{172} Furthermore, the premises must lead to conclusions that are consistent with a logical evaluation of the starting premises.\textsuperscript{173} In evaluating the patient's chain of reasoning leading to a particular conclusion, the examiner should be able to look to the patient for an explanation of the determinative factors in his decision and the degree of importance assigned to each factor.\textsuperscript{174} Essentially, the test requires that patients weigh the risks and benefits of various treatment options in a manner that is consistent with the value they have assigned to each risk and benefit.\textsuperscript{175}

\textsuperscript{171} Freedman, \textit{supra} note 133, at 64.

\textsuperscript{172} The predictability of the conclusions resulting from a logical analysis of the facts presented actually support our idea of freedom of choice. Freedom of choice in our society involves a certain reciprocity which requires that one actor conform his behavior "in light of what others [might] be expected to do." \textit{Id.} at 64. Since equivalent restraints are placed on every member of society, we achieve a degree of commonality and predictability of motivation and reasoning. \textit{Id.} As stated by Freedman:

That which allows us to grant freedom of action in our society is the warranted belief that, by and large, one person's choices will be recognizable by others. It is only given this condition that we can empathize with a person's behavior, and it is only given this condition that behavior becomes sufficiently predictable to enable us to live together in society.

\textit{Id.}

\textsuperscript{173} See Appelbaum & Roth, \textit{supra} note 148, at 30-31; \textit{see also} Freedman, \textit{supra} note 133, at 64.

\textsuperscript{174} See Appelbaum & Roth, \textit{supra} note 148, at 30-31.

\textsuperscript{175} \textit{Id.} at 30. In an empirical investigation of the capacity of geriatric patients to consent to research participation, the researcher used a seven-point scale to measure the "quality of reasoning" (or rationality of reasoning) of the subjects. \textit{See} Barbara Stanley, Ph.D. et al., \textit{The Elderly Patient and Informed Consent: Empirical Findings}, 252 JAMA 1302, 1303 (1984). Each point evaluated the patient's ability to weigh the risks and benefits associated with a particular treatment option:

1. Shows no evidence of weighing risks and benefits, and gives an entirely irrelevant response to the question, "Why did you decide to be (or not be) in the study?"
2. Shows no evidence of weighing risks or benefits, or mentions irrelevant risks or benefits.
3. Weighs either risks or benefits globally.
4. Specifically identifies and weighs either risk or benefit.
5. Weighs risks and benefits globally.
6. Specifically identifies and weighs either a risk or a benefit, and globally weighs the other factor.
7. Explicitly identifies and weighs both the risks and benefits.

\textit{Id.} at 1303-04.
While the test requires consistency in the premises reached by any competent member of this society who is presented with the same facts under the same circumstances, it does not require that a uniform conclusion follow from these premises. Freedman explains that since we wish to allow certain latitude for each individual's own value system, one we do not necessarily share, competency should be found and accepted if the premises are strong enough to justify the conclusion. Accordingly, while we may disagree with the ultimate conclusion reached by the patient, if we are willing to accept as rational reasons the arguments which support the conclusion, and agree that these arguments are relevant, although we would not necessarily find them decisive, the presumption of competence should be reaffirmed. In that manner, we also neutralize the criticism that, since the test establishes a line of demarcation between acceptable or rational reasons and unacceptable reasons for action, it is overly paternalistic. Thus, under this test, an acceptable or rational reason becomes not what each and every member of society would find decisive, but what a specific member would find relevant enough to be included in the chain of reasoning leading to his decision. Should the patient's choice be contrary to objective standards of rationality, the test requires that the patient's choice be at least subjectively critical and rational. It has been explained that:

A patient need not conform to what most rational people do to be considered competent, but the competent patient must be able to give reasons for his decision. The patient must be able to show that he has thought through the medical issues and related this information to his personal value system. The patient's personal reasons need not be medically or publicly accepted, but neither can they be purely private, idiosyncratic, or incoherent.

Under the "Rational Reasons" test, a patient who chooses premortem cryopreservation should not be declared incompetent simply because he has chosen a procedure that is unpopular with medical

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176. See Freedman, supra note 133, at 64.
177. Id.
178. See id.
179. Id.
180. Drane, supra note, 133 at 927.
181. Id.; see also Freedman, supra note 133, at 64 ("Since we wish to give latitude to an individual's own value system, one which we do not necessarily share, it is not required that the conclusion 'follow' from the premises [sic], in that we believe the premises [sic] are strong enough to justify the conclusion.").
professionals. As long as he has satisfactorily demonstrated his competence by evaluating all the necessary information and weighing all the possible risks and benefits of his choice, the decision to undergo premortem cryopreservation should be honored.

The proposed statutory amendment requires that at least two physicians evaluate the patient and concur with the patient’s diagnosis and prognosis. The amendment assures that there is full disclosure of all the necessary information. The next step would be for the patient to weigh the risks and benefits of undergoing the procedure. In premortem cryopreservation, the choice is between the occurrence of natural death within a few months, on the one hand, and cryopreservation with the possibility of future revival, on the other. Should the patient decide that the possibility of an extended lifetime in the future offered by cryopreservation outweighs the certainty of more time in the present the patient should be found competent to undergo the procedure.

One may argue that cryopreservation should be allowed only after clinical death. The rationale for this argument would revolve around the desire to give the patient an opportunity to benefit from future advances in the art until the onset of natural death. However, when one considers the physiological damage that certain diseases can inflict on the body,182 the chances of successful revival are greater if a subject is preserved premortem rather than postmortem.183 Moreover, had there been a measurable chance that the patient’s disease would be cured in the foreseeable future and prior to the onset of natural death, presumably, the patient would have opted against premortem cryopreservation.

Freedman rationalizes that one way a person might fail to produce rational reasons for his choice is “by founding his argument upon premisses [sic] known to be false.”184 For example, if it had been conclusively proven that revival from cryopreservation cannot be accomplished regardless of scientific advancement, if there were prov-
en laws of the physical or biological sciences which demonstrated that cryopreservation is theoretically and practically impossible to accomplish, then there would be no rational reason to undergo the procedure. Fortunately, that is not the case. Scientific evidence strongly supports the conclusion that revival from cryopreservation will one day be a reality.185

4. Ability to Understand and Actual Understanding

The “Ability to Understand” test reaffirms one’s competency if one is able to understand and act upon the relevant information provided by the physician.186 The “Actual Understanding” test, on the other hand, holds one competent if one actually does understand and act upon the information.187 Because of the logical nexus between the two tests, it makes sense to analyze them together. Both tests require that the patient be presented with the necessary information upon which he will base his choice. In actual application, the “Ability to Understand” test may well be the threshold issue in determining the patient’s “actual understanding” of the information provided. If the patient must actually understand and act upon the information presented in order to be found competent, then he must necessarily have the ability to understand the information. Therefore, one who is competent under one test must be competent under the other as well.188

These two tests can be distinguished from the “Rational Reasons” test on the ground that the former do not require an evaluation of the reasons for making a choice.189 The decision-making process of the patient is supposedly not evaluated, since we wish to refrain from questioning one’s reasons for choosing one alternative as opposed to another.190 This argument seems curiously oxymoronic. In addition to understanding the relevant information, the test requires that the patient actually act upon it. This last requirement, arguably, evaluates the decision-making process of the patient.

The question raised by these tests is whether one can knowingly act upon information in irrational ways.191 If we answer in the affir-
mative, yet uphold the decision reached, the tests will have failed to carry out their stated purpose, namely to evaluate competency. Under these circumstances, the tests would only be slightly ahead of the "Evidencing a Choice" test. The only difference is that they would implicate the patient's intellectual comprehension of the information, while such a consideration is immaterial in the "Evidencing a Choice" test. On the other hand, if we agree that understanding the information and acting irrationally upon it are mutually exclusive, if the rationality of the patient's choice serves as evidence of his level of comprehension of the information, then we are once again applying the "Rational Reasons" test, while still maintaining the pretense that because of our respect for individual autonomy we will not inquire into a patient's reasons for choosing one alternative over another.

In order to evaluate whether the patient understands and actually acts upon the information, we must necessarily look at his choice. Given that understanding information and using it rationally are practically inseparable, if we accept his choice despite its unmistakable irrationality, then we are simply falling back on a slightly more sophisticated version of the "Evidencing a Choice" test. Contrarily, if we reject his choice because we consider it irrational and indicative of a lack of comprehension, then we have decided competence by applying the "Rational Reasons" test.

Essentially, the "Ability to Understand" and "Actual Understanding" tests define competence in terms of understanding information, and understanding information in terms of competence. That type of circularity is fatal to any logical application of these tests. To adopt either the "Ability to Understand" test or the "Actual Understanding" test would give no independent scope to competence. Of the five approaches used to measure competency, the one most applicable to the proposed amendment is the "Rational Reasons" test. It is the only one which makes a valiant effort to evaluate competency while still respecting individual autonomy.

192. Id. at 59-60.
193. Id. at 63.
194. Id.
195. Id.
196. Id.
B. Countervailing State Interests

Generally, conduct does not enjoy immunity from governmental interference simply because it is claimed to be an exercise of one’s right to autonomy. Indeed, *Cruzan* explains that a liberty interest, although deserving of constitutional protection, is not afforded such protection unless it passes muster in a balancing test against the relevant state interests.197 Broadening the scope of the right to autonomy or self-determination to encompass all situations where a person wishes to achieve his own death would run counter to existing mores.198 However, this Note prays for an extension of the right to self-determination to include premortem cryopreservation. Courts should examine premortem cryopreservation under the same analytical framework established for the right to refuse treatment cases.199

This framework, which has evolved considerably over the years, has its origin in *In re President & Directors of Georgetown College*200 and *John F. Kennedy Memorial Hospital v. Heston.*201

197. See *Cruzan v. Director, Mo. Dep’t of Health*, 497 U.S. 261, 282 (1990). The *Cruzan* Court further reasoned that the requirement that a patient’s wish to refuse medical treatment be proven by clear and convincing evidence embodies the countervailing interests of the State of Missouri. *Id.* at 282; cf. *In re Conroy*, 486 A.2d 1209, 1225 (N.J. 1985) (“On balance, the right to self-determination ordinarily outweighs any countervailing state interests, and competent persons generally are permitted to refuse medical treatment, even at the risk of death. Most of the cases that have held otherwise, unless they involved the interest in protecting innocent third parties, have concerned the patient’s competency to make a rational and considered choice of treatment.”). Taking these two cases together, one may conclude that upon proof of a patient’s competency by clear and convincing evidence, a patient’s right to determine his own health care will generally be upheld.

198. See *Kadish*, supra note 44, at 864. It is not difficult to understand the courts’ unwillingness to extend this right of autonomy to all cases in which the person wishes to die. Extension of the right to nonmedical contexts would unearth formidable problems for the law. *Id.* For example, if the right of autonomy was fully recognized, authorities would be powerless to stop a perfectly healthy person from fatally shooting himself, even in a public place. So long as he was competent when he arrived at the decision to kill himself, it would be an exercise of his right to autonomy or self-determination.

199. See Note, supra note 10, at 2021 (advocating a similar calculus for cases of physician-assisted suicide).

200. 331 F.2d 1000, 1008-10 (D.C. Cir.), cert. denied, 377 U.S. 978 (1964) (allowing hospital to perform a blood transfusion on a non-consenting patient based on the reasoning that the State has interests in (1) preventing suicide, (2) protecting innocent third parties, such as the patient’s minor children, from abandonment, and (3) protection of the medical profession’s desire to act affirmatively to save lives without fear of civil liability); see also Superintendent of Belchertown State Sch. v. Saikewicz, 370 N.E.2d 417, 425 (Mass. 1977).

201. 279 A.2d 670 (N.J. 1971) (holding, based on facts similar to *In re Georgetown College*, that the State’s paramount interest in preserving life and the hospital’s interest in caring for its patient outweighed the patient’s unwillingness to submit to a blood transfusion.
Since subordination of state interests to individual interests is not universal, following a determination that the patient is competent, the court should balance the patient’s right to autonomy against the state’s interests in:

1. Preserving Life

   The state’s interest in the preservation of life encompasses multiple concerns: an interest in the sanctity of life, an interest in its value to society as a whole, and an interest in prolonging the life of the individual patient. Premortem cryopreservation is consonant with all these concerns. Premortem cryopreservation places a person afflicted with a presently incurable and terminal disease in a dormant state until such time that his afflictions can be cured. The goal of the procedure is to revive the subject at a later time, apply the available countermeasures to cure him, and allow him to lead a normal life. The procedure does not offend the state’s interest in preserving life. Indeed, the major purpose of the procedure is the preservation and ultimate prolongation of human life. Hence, cryopreservation is actually a means of implementing the state’s interest in preserving life.

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202. In the case of a patient who personally decides to refuse treatment or undergo cryopreservation, rather than through a surrogate decision-maker, the competence of the patient is also a central issue. See, e.g., In re Conroy, 486 A.2d 1209, 1225-26 (N.J. 1985) (commenting that cases in which the patient’s right to refusal of treatment is overruled generally question the competency of the patient to make a rational choice of treatment).

203. See Saikewicz, 370 N.E.2d at 425.

204. Id.; see also Satz v. Perlmutter, 362 So.2d 160, 162 (Fla. 1980).

205. See Note, supra note 10, at 2033; see also Matthews, supra note 18, at 729 & nn.156-57.

206. McMullen & McMullen, supra note 127 (explaining that cryonics is the process of freezing persons whose “death” has been caused by a disease uncorrectable by today’s medicine, but which may be correctable in the future).

207. Id.

208. One state interest that may be upset by cryopreservation is the interest in not letting property sit idly and unproductively. It is generally accepted that one of the purposes of real property law in our capitalistic society is to assure the productive use of land. See, e.g., PAUL GOLDSTEIN, REAL PROPERTY at xxi (1984). This principle of maximum economic efficiency promotes marketability. It also raises serious questions about the uses that can be made of the property of a cryopreserved person. These questions can be especially troubling if the subject has not left any directives on the use or disposal of the property.
In the context of the right to refuse treatment, the New Jersey Supreme Court has argued that allowing the withholding or withdrawal of life-sustaining treatment is distinguishable from suicide:

[P]eople who refuse life-sustaining medical treatment may not harbor a specific intent to die, rather, they may fervently wish to live . . . without protracted suffering . . . .

Recognizing the right of a terminally ill person to reject medical treatment respects that person's intent, not to die, but to suspend medical intervention at a point consonant with the "individual's view respecting a personally preferred manner of concluding life."^209

Arguably, no one wishes to live more fervently than a person who, when faced with an incurable and terminal disease, decides to undergo cryopreservation until a cure for his afflictions is introduced. Some may argue that because some time to the patient's life remains, premortem cryopreservation should not be allowed. However, "[w]ho shall say what the minimum amount of available life must be? Does it matter . . . if such life has been physically destroyed and its quality, dignity and purpose [are] gone?"^210 Bouvia made clear that the state's interest in the sanctity of life does not outweigh the diminished quality of life that the patient would experience. Moreover, premortem cryopreservation, by trying to prolong life, glorifies the sanctity of life.

2. Preventing Suicide

The state also has an interest in preventing suicide. This

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It may reasonably be assumed that the cryopreserved patient would want to resume use and enjoyment of the property or the income therefrom upon revivification. However, the economic underpinnings of property law may well determine the type of use or distribution to which the property will be subjected while the patient awaits revivification. The subject may attempt to structure the disposition of his property in a way which would guarantee him some kind of reversionary residue upon revival; however, such tactics may implicate complex issues dealing with the Rule Against Perpetuities. Notwithstanding their importance, these issues are beyond the scope of this Note.

^211. Id. But see Cruzan v. Harmon, 760 S.W.2d 408, 422 (Mo. 1988), cert. granted, 492 U.S. 917 (1989), aff'd sub nom. Cruzan v. Director, Mo. Dep't of Health, 497 U.S. 261 (1990) (explaining that the state may refuse to consider quality of life as a factor).
Note takes the view that suicide prevention runs parallel to the state's interest in preserving life. While courts have often spoken of these interests as independent, they are logically related. Preventing suicide actually derives from the interest in preserving life. The underlying policy is to avoid "irrational self-destruction."\textsuperscript{213}

Courts have reasoned that when death is inevitable and there is no hope of cure or preservation of life, a decision to forego treatment is not irrational self-destruction.\textsuperscript{214} In the case of premortem cryopreservation, the outcome amounts to the preservation of life; it amounts to the preservation of the sanctity of life and its value to society and to the preservation of the life of the patient. Accordingly, the state's interest in preventing suicide is not compelling. Given the narrow definition of suicide in the context of the right to refuse treatment,\textsuperscript{215} premortem cryopreservation does not rise to the level of suicide. Suicide is defined as requiring a specific intent to take one's own life.\textsuperscript{216} Such intent is lacking in cryopreservation. The intent in cryopreservation is to eventually live free of disease and pain. Therefore, it is arguable that the interest in preventing suicide is not implicated in premortem cryopreservation of a competent, terminally ill patient.

3. Protecting Innocent Third Parties

Another factor considered in deciding whether to allow a terminally ill patient to refuse medical treatment is the effect the death of the patient may have on significant others.\textsuperscript{217} For example, if the patient has dependent children, a court will consider the extent to which the children will be deprived of the parent's financial and emotional support.\textsuperscript{218}

\begin{thebibliography}{99}
\item 213. Bartling v. Superior Court, 209 Cal. Rptr. 220, 226 (Ct. App. 1984); Saikewicz, 370 N.E.2d at 426 n.11.
\item 214. See Saikewicz, 370 N.E.2d at 426 n.11.
\item 215. See, e.g., Mich. Comp. Laws Ann. § 752.1022(2)(f) (Supp. 1993) (defining suicide or the voluntary self-termination of life as "conduct by which a person expresses the specific intent to end, and attempts to cause the end of, his or her life"); see also \textit{In re Sponatski}, 108 N.E. 466 (Mass. 1915), quoted in Hepner v. Department of Labor & Indus., 250 P. 461, 463 (Wash. 1926) (explaining that suicide is a "voluntary willful choice determined by a moderately intelligent mental power which knows the purpose and the physical effect of the suicidal act").
\item 217. Norman L. Cantor, \textit{A Patient's Decision to Decline Life-Saving Medical Treatment: Bodily Integrity Versus the Preservation of Life}, 26 Rutgers L. Rev. 228, 251-52 (1973).
\item 218. See id. Presumably, the interest in protecting third parties is implicated only when
\end{thebibliography}
It has been argued that the emotional aspect of the protection of innocent third parties does not provide a solid foundation for state intervention.\(^\text{219}\) One can certainly conceive of situations where a court’s acquiescence with a patient’s decision to forego life sustaining treatment or undergo premortem cryopreservation would be emotionally uplifting to the patient’s children.\(^\text{220}\) For example, the children would not have to witness the physical and mental deterioration, and eventual death of the parent. However, where the economic impact of the parent’s premortem cryopreservation would directly and substantially affect the children, the state’s interest in protecting innocent parties is implicated.\(^\text{221}\)

In weighing this interest, a court should remain cognizant of the fact that premortem cryopreservation would be implemented only a few months prior to natural death and after all other medical measures have proven ineffective. Consequently, it is highly unlikely that the children’s economic situation would be improved by requiring that the patient live out the remaining months of her life. Indeed, it is more probable that the children’s economic situation will worsen. If the parent is denied the opportunity to undergo premortem cryopreservation, she will still need to undergo medical care. Even if it is simply to alleviate the pain caused by the disease, it is not unusual for such ordinary care to exhaust a patient’s entire life savings. Moreover, the state’s interest in the children’s economic future is furthered by allowing the estate of the cryopreserved subject to be used to support the children; using the estate also satisfies the basic principles of capitalism and real property law.\(^\text{222}\)

Therefore, it may be more beneficial, both emotionally and economically, for the state to acquiesce to the wish of a competent, terminally ill parent to undergo premortem cryopreservation. However, this Note does not propose a mechanical application of some economic formula. This Note recognizes the formidable problems that a court would face in attempting to evaluate the possible emotional benefit to the children. Consequently, courts should adopt a case by case approach in weighing this important state interest; after all, the econom-

\(^{219}\) See Cantor, supra note 217, at 252.
\(^{220}\) See id.
\(^{221}\) Id. at 253.
\(^{222}\) See supra note 208.
ic factors which would trigger this interest are not present in every scenario.223

4. Maintaining the Integrity of the Medical Profession

"The most compelling principle of medical ethics always has been bene
cficiency: acting to benefit patients by sustaining life, treating
illness, and relieving pain."224 The logical corollary to this principle
is the principle of nonmaleficiencen.225 It is just as compelling in
medical ethics for physicians to refrain from harming their pa-
tients.226 These two principles, however, can clash with a patient’s
right to determine his own medical care.

Prior to the recognition of the right to refuse treatment,227 med-
ical professionals would often persist in continuing treatment, if only
to relieve the patient’s pain, despite the obvious futility of the treat-
ment. Not surprisingly, "[s]ome physicians feel such an obligation to
sustain life that they consider withholding and withdrawing of life
support to be unethical in any form."228 However, ethical standards
of the medical profession have changed considerably since the intro-
duction of the Hippocratic Oath.229 Today, a patient’s recognized
decisional autonomy necessarily constricts the ethical duty and the
authority of physicians.230 The modern ethical standards governing
the practice of medicine no longer require that treatment be main-

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223. See Cantor, supra note 217, at 253.
224. John M. Luce, M.D., Ethical Principles in Critical Care, 263 JAMA 696 (1990). As
mandated by the Hippocratic Oath, a physician must follow that method of treatment which,
according to her ability and judgment, she considers to be for the greatest benefit of her
patients. Additionally, a physician must give “no deadly medicine . . . nor suggest any such
dissenting) (quoting THE

OATH OF HIPPOCRATES).
225. Luce, supra note 224.
226. See Goncaves, 538 N.E.2d at 147 n.1.
228. Luce, supra note 224, at 698.
229. For example, after the introduction of cardiopulmonary resuscitation ("CPR") in the
1960s, most hospitals adopted policies that advocated CPR in all circumstances. Id. at 697.
Physicians often felt obligated to administer CPR whenever the situation called for it. Id.
However, they soon realized that not all patients wanted to be resuscitated, especially those
with terminal illnesses. Id. As a result, most hospital policies now allow CPR only after
acquiring the "informed consent [of] patients or surrogates." Id.
230. See Matthews, supra note 18, at 734. Prior to In re Quinlan, 355 A.2d 647 (N.J.
1976), for example, it would have been unthinkable for a physician to withhold or withdraw
life support from a patient, even at the latter’s own insistence. Today, however, while some
physicians still consider withholding or withdrawing life support to be unethical, Luce, supra
note 224, at 698, “withholding and withdrawing of life support are entirely compatible with
the ethical principles of beneficence, nonmaleficiencen, and autonomy.” Id.
PREMORTEM CRYOPRESERVATION

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1. PREMORTEM CRYOPRESERVATION

...tained despite its glaring futility. Moreover, the economic realities of today simply do not permit the extension of care to the bitter end. In fact, continuing treatment when the competent patient has rejected it invades the patient's right to self-determination, for "if the doctrines of informed consent and right of privacy have as their foundations the right to bodily integrity and control of one's own fate, then those rights are superior to the institutional considerations."

With the advent of cryopreservation techniques, a viable alternative will be available when medical technology is no longer capable of helping the patient. Cryopreservation will not undermine the integrity of the profession. In reality, this technology runs parallel with the intent of the Hippocratic Oath. The goal is to benefit patients by sustaining life through any means necessary. Preventing physicians from using it would not satisfy any legitimate state interest, and would vitiate the patient's right to privacy and self-determination.

IV. CONCLUSION

Cryopreservation may well present certain problems that are beyond the scope of this Note; however, its success in other fields of the life sciences is a strong indication that cryobiologists may not be too far from perfecting the technique. Therefore, it would be counterproductive for the legal system to ignore its acceptance or to try to label the procedure as suicide.

231. See Matthews, supra note 18, at 734.

232. Hospital personnel often complain of the shortage of health care professionals. Budget cuts, coupled with the shortage of health care workers, have forced physicians to triage the critically ill. Critical care resources are carefully allocated so that they are not wasted on patients whom they cannot help. See Luce, supra note 224, at 699.


234. Cryopreservation raises certain socio-economic issues that may impede its acceptance. The high cost of the procedure may restrict its application only to the wealthy. Also, it is conceivable that some people may try to triage patients to undergo the procedure. It may be allowed only for the brightest intellectuals or for certain races; or the decision to allow the procedure may be made based on the sexual orientation of the person. These are some of the problems with which the legal system may have to wrestle, should the procedure become widely accepted; however, they are not insurmountable and should not be the basis for stifling the progress of the technology. Society has always had to grapple with problems of racism, homophobia, and abuses by, and favoritism of, the economic elite. Certain people have always attempted to use scientific advancements for their own economic gain or to satisfy their own hatred. For example, the Nazis conducted unspeakable experiments on Jews in the name of science. However, fear of abuses have not decreased and should not decrease the progress of science.

235. See supra notes 109-22 and accompanying text.
Contrary to the reasoning of the California Court of Appeal, premortem cryopreservation should not be equated with suicide for a number of reasons. First, the rapid progress made in the fields of cryobiology and nanotechnology places these fields on the verge of proving that clinical death is not irreversible. Second, a cursory evaluation of the ultimate goal of premortem cryopreservation reveals the illogic of equating the procedure with suicide. The competent, terminally ill patient who requests cryopreservation lacks suicidal intent. The basic premise of the procedure is that death, as defined by our legal system, is not invincible if a patient is properly cryopreserved. The ultimate goal of the procedure is to extend life well beyond the current figures for life expectancy. To that extent, premortem cryopreservation is not different from other medical breakthroughs that have the effect of prolonging life. Years ago, people were not expected to live past their fortieth birthday. However, technological advancements have contributed to a steady increase in life expectancy. Similarly, cryopreservation has the potential to extend life almost indefinitely. It seems ironic that the legal system would label as suicide a procedure which has as its main goal the prolongation of life. Yet, as illogical as it may seem, the only alternative the law offers a terminally ill patient is a painful and undignified death.

No legitimate state interest is served by preventing premortem cryopreservation of a competent, terminally ill patient. The argument that the procedure offends the state interests established in the context of the right to refuse treatment is illogical. The state, indubitably, has an interest in preventing senseless self-destruction. However, to the extent that premortem cryopreservation has the prolongation of life at its very core, the state’s interest in preventing suicide is not implicated. On the other hand, the goal of premortem cryopreservation supports the government’s interest in preserving life. The state’s interest in protecting innocent third parties, although important when it is implicated, is only one of the factors to be considered by the court in determining whether premortem cryopreservation should be allowed. Lastly, the integrity of the medical profession would not be compromised by allowing premortem cryopreservation. Medical professionals should view the procedure as another tool in their arsenal that helps them to combat disease and prolong and protect life.

In the context of the right to refuse treatment, the United States

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237. See supra notes 201-05 and accompanying text.
Supreme Court has adopted the argument that the patient’s decision to refuse or terminate treatment must be proven by clear and convincing evidence.\textsuperscript{238} The Court has, therefore, embraced the position espoused by some commentators, namely that the decision to deny or uphold the right to direct one’s own health care should be based on the voluntary nature of the patient’s decision, rather than the active/passive dichotomy.\textsuperscript{239} Moreover, Justice Scalia, in his concurrence in \textit{Cruzan}, unambiguously rejected the distinction between affirmative acts causing death and passive refusals of lifesaving treatment which had, heretofore, enjoyed considerable judicial endorsement.\textsuperscript{240} Therefore, under \textit{Cruzan}, the right of a competent, terminally ill patient to undergo premortem cryopreservation should also be upheld when the individual’s interests outweigh the countervailing state interests. The proposed amendment requires that the patient’s decision to undergo the procedure be made voluntarily and that the patient be competent at the time the decision is reached.

The legal battlefield of premortem cryopreservation is too new to have any well-defined standards. However, the proposed amendment can be an effective first step in eliminating the chilling effect of the law on premortem cryopreservation. The proscriptions against assisting suicide can be amended so as to carve out an exception for the procedure. Well-reasoned legislative enactments can eliminate the potentials for abuse in the field of cryobiology, by allowing cryopreservation only upon a showing that the patient is in fact terminally ill and is mentally competent to make an informed decision.

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