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## Legal Implications of Cryonics

Daniel R. Spector\*

**C**RYOGENICS IS THE SCIENCE that deals with the production of very low temperatures and their effect on the properties of matter. The visual aspects of experiments in this field are fascinating. The practical aspects seem, at first glance, to be of considerably less consequence. However, this feeling of indifference does not arise as we ponder the ramifications of freezing one class of inanimate objects: dead human bodies. This is the realm of a more specific and indeed very new branch of cryogenics, namely, *cryonics*.

The term *cryonics* was first used less than 3½ years ago by an industrial designer and one-time Vice President of the Cryonics Society of New York, named Karl Werner. *Cryogenics* is the broad term. *Cryobiology* deals with the effects of low temperatures on living material generally. Finally, *cryonics* focuses on human living material and how human bodies can be frozen and thus preserved until a cure for the cause of death can be found.<sup>1</sup>

Mr. Robert C. W. Ettinger, President of the Cryonics Society of Michigan, has developed a thesis which serves as the foundation of cryonics. This thesis is the product of connecting an "established fact" to a "reasonable assumption."

*The fact:* At very low temperatures it is possible, *right now*, to preserve dead people with essentially no deterioration, indefinitely.

*The assumption:* If civilization endures, medical science should *eventually* be able to repair almost any damage to the human body, including freezing damage and senile debility or other cause of death.<sup>2</sup>

While Mr. Ettinger uses the phrase "with essentially no deterioration," cryobiologists have yet to succeed in freezing and thawing a major human organ without destroying it.<sup>3</sup> He does concede, however, that present freezing techniques are "far from perfect."<sup>4</sup> And cryonists generally recognize that "so long as we're freezing people on a part-time, occa-

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<sup>1</sup> Greene, *The Cry of Cryonics: Freeze, Wait, Reanimate*, *The National Observer* (Apr. 29, 1968) at 18, col. 1.

<sup>2</sup> R. Ettinger, *The Prospect of Immortality* 1 (1964). [Hereinafter cited as Ettinger.] Mr. Ettinger is a professor of physics and has taught at the Highland Park Junior College which is in a suburb of Detroit, Mich. He is the internationally recognized leader of the cryonics movement.

<sup>3</sup> Greene, *supra* note 1, col. 4-5.

<sup>4</sup> Ettinger, *How the Nonfuneral was Arranged*, 62 *Life*, Feb. 3, 1967, at 21. [Hereinafter cited as *Life*.] This article was written in connection with the freezing of Dr. James Bedford on Jan. 12, 1967. Dr. Bedford was a retired psychology professor from Glendale, Calif. who had died of lung cancer. He contacted Mr. Ettinger and, after some initial hesitation, decided to be the first man to be frozen.

sional basis, the treatment will be administered under primitive conditions.”<sup>5</sup> On the other hand, they proclaim (obviously) that the people who are dying now cannot afford to wait until freezing procedures are perfected.<sup>6</sup> It seems that as long as we’re depending upon future science to cure the original cause of death we might also ask it to rectify the freezing damage we have caused. However, the two do not necessarily go hand in hand. It is clearly the task of today’s science to improve crude methods of freezing so as to minimize freezing damage. If a person died of pneumonia in the year 1900 and was then crudely frozen his chances of revival today would be very slim. The chances for curing the pneumonia are excellent, but we could do little for the freezing damage. Moreover, our ability to thaw him is very much in doubt.<sup>7</sup>

Three things are essential to the task of preserving the body: protective agents injected into the body, a proper storage medium, and a safe container to hold the body. Protective agents are needed to prevent, or at least limit, freezing damage. The two most popular are glycerol and dimethylsulfoxide (DMSO).<sup>8</sup> Both act as a kind of antifreeze. They bind molecules of water to them so as to lessen the amount of water available for the formation of ice crystals.<sup>9</sup> With regard to a proper storage medium there has been some discussion as to the relative merits of liquid nitrogen and liquid helium. At the present time liquid nitrogen (nitrogen is a liquid at  $-197^{\circ}$  Centigrade) is preferable to liquid helium (helium is a liquid at  $-270^{\circ}$  Centigrade). The latter is more expensive and more difficult to handle. In addition, more damage may result from subjecting the body to the lower temperature.<sup>10</sup> However, after more is learned about freezing, helium will probably be used as temperatures near absolute zero ( $-273^{\circ}$  Centigrade) are more effective in slowing down life processes—and this is the basis of cryogenic preservation.<sup>11</sup> With regard to a container for the body, several “cryocapsules” have

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<sup>5</sup> 3 Cryonics Reports (Dec. 1968) at 246.

<sup>6</sup> Life, *supra* note 4. Some types of freezing damage which are possible are: mechanical damage by intercellular or intracellular ice crystallization (the latter is caused by fast freezing, the former by slow freezing); high concentration of salts within the cells as a result of dehydration; metabolic imbalance, etc. Ettinger, *supra* note 2 at 16-18.

<sup>7</sup> Thawing must be fast. Not all biochemical reactions resume at the same time. With slow thawing the various life processes will be thrown out of kilter, and as ice crystals grow, nearby cells can be mechanically damaged. Frisch, Will We Freeze Ourselves into the Future? 61 Science Digest (June 1967) at 20-21.

<sup>8</sup> Ettinger, *supra* note 2, at 22.

<sup>9</sup> In the Bedford freezing [discussed in note 4 *supra*] DMSO was used. Life, *supra* note 4. In a more recent freezing, that of Steven J. Mandell, a college student at New York University, glycerol was used. 3 Cryonics Reports (Sept. 1968) at 165.

<sup>10</sup> Ettinger, *supra* note 2, at 39-40.

<sup>11</sup> *Id.* at 10. Even dry ice which is inexpensive and easy to handle is suggested “as an emergency or austerity measure.” *Id.* at 40. The temperature of dry ice is  $-79^{\circ}$  Centigrade.

been built. The first usable capsule, designed and constructed by the Cryo-Care Equipment Corporation of Phoenix, Arizona, sold for \$4100.<sup>12</sup>

Having touched briefly upon the mechanics involved, let us look at the principles which underlie Mr. Ettinger's thesis. He has written:

It used to be thought that the distinction between life and death was simple and obvious. A living man breathes, sweats and makes stupid remarks; a dead man just lies there, pays no attention, and after a while gets putrid. But nowadays nothing is that simple.<sup>13</sup>

People in the medical profession have agreed:

It is plain that advances in the various fields of biology are blurring boundaries that used to distinguish clearly between the living and the dead.<sup>14</sup>

Exactly how the life/death line has attenuated can be seen by noting the various degrees of death that science recognizes. Traditionally, the moment when death occurred was marked by the cessation of spontaneous heartbeat and respiration. These criteria are known as the signs of "clinical death."<sup>15</sup> "Biological death" can be described as the state of damage from which the whole person cannot be revived, even by the use of the most modern medical techniques.<sup>16</sup> "Cellular death" refers to an irreversible degeneration of the individual cells of the body.<sup>17</sup> Still another form of death is "brain death," that is, the cessation of brain activity as indicated by a flat electroencephalogram.<sup>18</sup> To add to this confusion is the following statement concerning "legal death":

Though the legal definition of death is important for determining legal rights, law defines death not by some dictionary definition but by scientific criteria used by physicians and accepted by the public. The definition of death is properly a medical rather than a legal

<sup>12</sup> Frisch, *The Cryonic Underground*, 61 *Science Digest* (June 1967) at 23. The most recent developments in capsule construction have come from Fusion Techniques, a welding contracting company in East Northport, N. Y. They are attempting to solve the problems that plagued the early manufacture of cryocapsules: high initial cost, large overall dimensions, excessive weight, high maintenance costs, and even an un-aesthetic appearance "causing it to have limited market appeal." 3 *Cryonics Reports* (Nov. 1968) at 218-19.

<sup>13</sup> Quoted in *Playboy Interview: Stanley Kubrick*, 15 *Playboy* (Sept. 1968), at 182. Mr. Kubrick is a well-known producer and director of motion pictures.

<sup>14</sup> Gorny, *The New Biology and the Future of Man*, 15 *U.C.L.A. L. Rev.* 273, 312 (1968). Roderic Gorny is an Assistant Professor of Psychiatry in Residence at the U.C.L.A. School of Medicine.

<sup>15</sup> *Id.* at 311. The word "spontaneous" is important as there exist means of maintaining heartbeat and respiration artificially. The latter is done with "iron lungs" and pressure chambers. The former with electronic "pacemakers" and pumps. There is also a machine that performs the jobs of both heart and lungs, aerating the blood as well as pumping it. Ettinger, *supra* note 2, at 45.

<sup>16</sup> *Id.* at 312.

<sup>17</sup> *Id.*

<sup>18</sup> Hamburger, *Discussion*, in *Ethics in Medical Progress* 69 (G. Wolstenholme ed. 1966).

problem. If death is to be redefined, physicians must first agree on the applicable criteria.<sup>19</sup>

With these concepts of death in mind Mr. Ettinger tells us that man dies little by little usually, in imperceptible gradations, and the question of reversibility at any stage depends on the state of medical art.<sup>20</sup>

Today clinical death is often reversible. Numerous patients "die" clinically on the operating table only to be revived by artificial stimulation of the heart (heart massage, drugs, electric shock) and by artificial respiration.<sup>21</sup> The phrase "modern medical techniques" in the definition of biological death<sup>22</sup> suggests that the criteria of biological death can, and will change often.<sup>23</sup> Thus this type of death will become reversible upon the discovery of new medical techniques. Even cellular death may not be final, as a cell may be made nonfunctional by relatively minor, and eventually repairable damage.<sup>24</sup> As far as the reversibility of brain death is concerned, there have been cases where a flat electroencephalogram was recorded for several hours and the patient fully recovered.<sup>25</sup> Thus if a person is declared dead by any one of the standards herein described he may be only "slightly dead," i.e., just out of reach of resuscitation by today's methods.

It is not difficult to understand Mr. Ettinger when he says that the idea of cryonic suspension (freezing) will be repugnant to many people, and that it unsettles them and makes them nervous.<sup>26</sup> Nevertheless, he steadfastly maintains that:

It is easy to perceive that a large-scale freezer program must inexorably develop, sooner or later, whether or not my degree of optimism becomes general, and whether or not my personal efforts exert much influence.<sup>27</sup>

Accepting the feasibility of Mr. Ettinger's thesis, and assuming that the complex biological problems such as preventing ice crystallization

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<sup>19</sup> Sanders and Dukeminier, *Medical Advance and Legal Lag: Hemodialysis and Kidney Transplantation*, 15 U.C.L.A. L. Rev. 357, 409 (1968). David Sanders is an Assistant Clinical Professor of Psychiatry at the U.C.L.A. School of Medicine. Jesse Dukeminier, Jr. is a Professor of Law at the U.C.L.A. Law School.

<sup>20</sup> Ettinger, *supra* note 2, at 3.

<sup>21</sup> *Id.* at 44.

<sup>22</sup> See note 15 *supra*.

<sup>23</sup> Ettinger, *supra* note 2, at 3. As soon as a method for reviving a particular body is discovered, that body is no longer "biologically dead." *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> Hamburger, *supra* note 17. At the World Medical Assembly in Sydney, Australia on Aug. 9, 1968 Dr. G. Dekker of the Netherlands said he knew of a case where a complete recovery followed a four day absence of brain activity. 3 *Cryonics Reports* (Sept. 1968) at 174.

<sup>26</sup> *Id.* at 172.

<sup>27</sup> *Id.* at 170.

in the "freezee's" blood stream are solved,<sup>28</sup> the next step is to provide for the frozen population in our jurisprudential framework. And in doing so it must be understood that the core of the problem of re-evaluating our laws arises from the basic concept of cryonics, that being the freezing of the *legally dead*<sup>29</sup> in the hope of eventual rescue. Thus, despite statements made by advocates of cryonic suspension to the effect that

[D]eath is no more natural or inevitable than smallpox or diphtheria. Death is a disease and as susceptible to cure as any other disease. Over the eons, man's powerlessness to prevent death has led him to force it from the forefront of his mind, for his own psychological health, and to accept it unquestioningly as the unavoidable termination. But with the advance of science, this is no longer necessary—or desirable.<sup>30</sup>

we must remember that if cryobiological research does result in a cure for death, it will be a *post-mortem* cure. Death, as we know it, will have already occurred. It was not *prevented* from happening by freezing. With this in mind we can consider some of the ways whereby we can merge an astonishing theory with our mundane legal system.

We can say that:

(1) All of our laws which incorporate the word "death" should be construed as including a dead person who has been frozen as he was required to be legally dead before he could be frozen in the first place. In other words death is final.

(2) An exception should be made in the interpretation of the word "death" in our laws so as to put the frozen dead in a separate category; thus we would be allowing for the contingency of future revival.

(3) Discard the connotation of death as an absolute in every instance; *i.e.*, redefine it altogether.

The first suggestion ignores the realities of the situation. It is true that most scientists are inclined to set their sights on the far distant future when they speak of future revival. They feel that either it will take a very long time for science to be able to reverse the damaging effects of today's crude freezing techniques or, more importantly, that it will take a very long time for science to develop freezing techniques that are safe.<sup>31</sup> They are, at best, "tolerant" of the cryonists. But while

<sup>28</sup> See notes 6 and 7 *supra*.

<sup>29</sup> See note 19 *supra*.

<sup>30</sup> Quoted in Playboy Interview: Stanley Kubrick, *supra* note 12, at 184.

<sup>31</sup> Dr. Stanley W. Jacob, an Associate Professor of Surgery at the University of Oregon School of Medicine says:

I'm afraid the poor man's funds [referring to Dr. James Bedford, *supra* note 5] have been wasted, as far as his own chances are concerned.

Quoted in Cryoburial Raises Scientific Heat, 8 Medical World News, (Feb. 24, 1967) at 34.

they publicly insist that there is little hope that today's freezees can be revived, cryonists reply that this pessimism is not supported by actual calculations of probability but only by "uneducated guesses at best."<sup>32</sup> And what is there to prevent medical science from discovering a cure for, let's say, terminal cancer in the year 1975 as opposed to 500 hence? There is little doubt such a cure is possible. And if we speak in terms of revival in three to five years as compared with five centuries, we may be able to conclude that the freeze was not "away" so long as to compel him to return to society with a totally different identity than he had when he "died." Conversely, if he were to be brought back to an advanced civilization hundreds of years from now, he could be said for all intents and purposes to be "someone else." Drawing the line beyond which a freeze could be said to have lost his former identity and his place in the mainstream of the society he knew when he "died," and beyond which the continuity of his affairs has been irrevocably interrupted would indeed be difficult. But the manifest necessity of drawing such a line compels us to reassess death and not to think of it as final and irreversible. If a man may be allowed to continue where he left off, it would be grossly unfair to penalize him for the time he spent in his liquid nitrogen bath.

In considering the reassessment of the concept of death in the light of the time when a person is returned to society let us look at the following situations:

*Case #1*—a man has died but had executed a valid will. This will is fairly complex, and as a result it will take approximately five years to probate it. The testator was frozen cryogenically in the hope that he would be revived at some indeterminate future time and that the disease he died from, one that science has long been on the brink of curing, would be cured. The testator is, in fact, revived within three years. He is fully competent and can be said to be fit to re-enter society at the same point he left it. Should he be deprived of resuming control of his estate?

*Case #2*—a man has a valid cause of action against another. The applicable statute of limitations is three years. If the man dies before the three years have elapsed his representative has, by New York's statute, one year after the man's death in which to commence the action.<sup>33</sup> Applying this provision where the total elapsed time including the one year grace period is less than the originally allotted three years is manifestly unfair. Should a man who died only a few weeks after the cause

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<sup>32</sup> Henderson and Ettinger, *Cryonic Suspension and the Law*, 15 U.C.L.A. L. Rev. 414, 417-18 (1968). Curtis Henderson is the President of the Cryonics Society of New York and a Member of the New York Bar.

<sup>33</sup> N.Y. CPLR § 210(a) (McKinney 1963).

of action accrued and who is frozen cryogenically be deprived of the three year limitation period if he is revived more than one year after death but before the three year statute has run? Even if he is not revived at all, should his representative be denied a request to extend the grace period to three years? The essential element in this case as in case #1, *supra*, is the non-recognition of death as final when the decedent is placed in cryonic suspension. We are not saying that a dead man must be afforded the full running of any statute of limitations. We are only suggesting that if a man is revived and is able, as a matter of law, to resume his former place in society, and the statute of limitations has not run, then perhaps he should be said not to have died at all. Applying this reasoning to case #1, *supra*, we can conclude that we should not deprive a man of regaining control of his estate if he is revived and can resume his former place in society.

Case #3—in a variation of case #2, *supra*, let us make the plaintiff an infant. If he is seventeen years old when the cause of action accrues he has, by statute, until he is twenty-four years old (three years after the “disability” of infancy ceases) to bring the action.<sup>34</sup> Alternatively, if he dies his representative (e.g., parent) has, by statute, up to three years after his death in which to bring the action.<sup>35</sup> If he dies when he is nineteen years old the action must be brought on his behalf within three years, and not within five years.<sup>36</sup> However, if the infant plaintiff is frozen cryogenically, what is the point beyond which the plaintiff himself (if he is revived) or his representative (if he is not revived) can no longer bring the action? Suppose the plaintiff is revived just before his twenty-second birthday. The issue of time limitations for a representative suit does not exist because (1) the statute compels a representative suit to be commenced within three years of the date of plaintiff’s death<sup>37</sup> and three years have not yet elapsed, and (2) once revived, the plaintiff was never really dead so he needs no representative. It would seem that here the plaintiff should be allowed until his twenty-fourth birthday (three years after his “disability” ends) to bring the action.<sup>38</sup> But, notwithstanding the statute of limitations, if the plaintiff could be considered to be “away too long” and thus unable to resume his former place in society, he should be barred from bringing the action. Now consider the problem encountered if the plaintiff is revived on his twenty-third birth-

<sup>34</sup> *Ibid.* § 208.

<sup>35</sup> *Id.* § 208.

<sup>36</sup> *Id.* § 208 provides that:

[T]he time within which the action must be commenced shall be extended to three years after the disability ceases or the person under the disability dies, whichever event first occurs . . .

<sup>37</sup> N.Y. CPLR § 208 (McKinney 1963).

<sup>38</sup> *Ibid.* § 208.



day. The issue of time limitations for a representative suit is again moot as there cannot be any period designated as "three years after date of death" if the plaintiff (once revived) was never really dead. And even though we might want to give the plaintiff until his twenty-fourth birthday to bring the suit, we must remember that he was away for four years and this may be too long.

Once we are sure that a person can't be revived within a reasonable period of time, *for the purposes of a particular cause of action* we must consider him dead. Before we consider what such a reasonable time is, let us examine some of the equities that must be injected into our cases on behalf of all the parties concerned.

In giving the freeze the benefit of not being ignored we must not go so far as to damage his adversaries. If the freeze himself is to be the eventual plaintiff in an action we will allow him to sue if he is able to resume his former place in society. If he will not be able to be revived within such time and a representative suit is desired, certain benefits must be accorded the representative. The best thing we could do would be to give the representative due notice as to the possibility of reviving the freeze so as to allow him to avoid being barred by the one year limitation in Section 210(a) of the New York Civil Practice Law and Rules<sup>39</sup> or by the three year limitation in Section 208 of that statute.<sup>40</sup> But as such a prediction may very well be impossible to make accurately we would do better to extend the time in which to bring the representative suit to that point in time when the decedent himself would have been allowed to bring the action had he been successfully revived. In both the freeze suit and the representative suit the upper limits would be the statute of limitations.

As far as protecting the freeze's adversary in a suit we are not allowing either the freeze or his representative to bring an action after a point in time where the freeze (if revived) would be unable to resume his former identity. As an additional measure of protection in a situation involving Section 210(a) of the New York Civil Practice Law and Rules<sup>41</sup> consider the following: a man dies and is frozen cryogenically only weeks before the applicable statute of limitations runs, and up to that point no action has been commenced. If the representative requests an additional year to bring the action he must be refused. He cannot be allowed to burn the candle at both ends. If his testate (or intestate) were frozen immediately after the cause of action accrued he undoubtedly would have waived the one year grace period in exchange for an opportunity to possibly get the full time afforded by the statute of limitations. There-

<sup>39</sup> *Id.* § 210(a).

<sup>40</sup> *Id.* § 208.

<sup>41</sup> *Id.* § 210(a).

fore, the logical conclusion would be to include in the election to submit to cryogenic freezing an automatic waiver of the one year grace period by the freeze himself, such waiver to be binding on his representative.

We must continue to emphasize the fact that we are in no way attempting to advocate a policy whereby a dead man (or his representative) is to be allowed, in every case, a full statute of limitations in which to bring an action. What we are saying is that if a man is returned to society before the statute of limitations has run and before we would be compelled to consider him a reborn individual totally dissociated from his previous identity, he should be allowed *up to* the full statute of limitations in which to bring the action. Thus the time when the decedent is revived is the primary element, and the statute of limitations is merely ancillary to it. If a man is returned to society and deemed capable of resuming his former niche therein and the applicable statute of limitations hasn't run, he can still bring the action. If the statute has run, he would be barred from suing. And if the statute hasn't run but the man cannot resume his former identity, here too he would be barred. If both the statute has run and the man has been "away too long," of course no action could be maintained. These same rules will apply to representative suits where the freeze cannot be revived. In these cases we look to the time that the decedent would have still been able to bring the action himself had he been successfully revived, always keeping in mind the applicable statute of limitations as an upper limit.

Just as we were concerned with the relative equities of the adversaries in law suits involving statutes of limitations, we must also manifest this concern in probate proceedings. It is clear that we cannot freeze indefinitely the legal maneuvers of the executor or administrator of a person's estate at the same time the person himself is frozen cryogenically. If a testator has not been successfully revived within ten years, and his will could have been completely probated in five years, it is illogical to have waited the ten years if after that time the testator would not have been able to resume his former place in society anyhow. If he would have been able to resume his former place in society we would have allowed him to prevent the probate of his estate. Here the wait was unnecessary. Now a total of fifteen years will have elapsed without the estate being touched, all to the detriment of the beneficiaries. In balancing the equities between the testator-freeze and the beneficiaries of his estate our fundamental aim is to allow the freeze to remain in the picture for a reasonable length of time. At the same time we must not cause undue hardship to fall upon the beneficiaries as a result of the delay. The solution lies in defining what such a reasonable time is. To be sure this is a difficult task. It would seem impossible to say in all cases at what point a person returning to society can "pick up where he left

off." How, then, should this determination be made, whether for probate cases or for cases involving a statute of limitations?

In all cases the determination of the length of the period during which a freezee could successfully resume his former identity should be made by a panel of judges, not by a jury. A jury should not be used until the cryonic program is more firmly established. Until the program generates at least a semblance of public acceptance we should leave this determination in the hands of those who can best appreciate the impact that cryonics will have on the present law. The judges would be free to consult with any witnesses whom they might consider helpful. All relevant facts would have to be considered, and, of course, each case would be determined on its own merits. However, because of its obvious indefiniteness the determination could, at best, be given the weight of a rebuttable presumption, open to attack by either side in the controversy. For example, should the panel decide that a freezee could re-enter society at the very same point he left it any time within thirty months from the date of death, countervailing considerations could be shown to exist by either party, so that this time limit might be either shortened or lengthened. The defendant in a civil suit or the beneficiaries in a probate proceeding may claim immediate and irreparable harm to their interests if the judges' initial estimate is upheld. This same argument might be presented on behalf of the frozen plaintiff or frozen testator. Further refinements in the law could be made in a probate case where some necessity is shown to require the expedition of the distribution of the estate. Thus, after the panel has made its estimate, a certain fraction of that estimate would be computed. The size of this fraction would depend upon the necessity of expediting the proceeding. The resulting figure would be called the "C.R.P." or Critical Resuscitation Period. If the testator is not revived nor definitely scheduled to be revived during that period probate should be irrevocably commenced. So if the estimated period within which the testator could resume his former place in society is five years and the fraction decided upon is three-fifths or 60%, the C.R.P. would be three years. Furthermore, the remaining two years would be called the "c.r.p." or conditional reserve period. A reserve for the benefit of the testator should be created out of the estate should he be revived after the expiration of the C.R.P. but before the expiration of the c.r.p. If he is not revived before the c.r.p. has expired this reserve would be distributed to those who lost out by the creation of the reserve in the first instance. The net result of these suggested rules is that if a beneficiary can show some valid reason for shortening the delay of probate between the date of death and the date after which the testator must be erased from the picture, he can succeed in doing so. But he would not be able to tip the balance so far as to deny the testator a reasonable time within which he can prevent probate or at least a chance

to share in his own estate. To obviate the possibility that a testator may be revived without a penny to his name the freezee would be allowed in all cases to take a portion of his estate with him into his cryocapsule. In contrast to this writer's suggestions the Cryonics Society of New York with the assistance of a committee of attorneys has drawn up a trust agreement which would provide good financial security for a revived freezee. This trust agreement will be explored in detail later, and it will be seen at that time that financial security is not the only purpose of the agreement.<sup>42</sup>

It appears that no more damage would be done to the beneficiaries in a probate case by delaying probate until that time when the testator-freezee can be said to be "completely dead" as far as his original identity is concerned than would be done to a defendant in a civil suit by allowing a revived freezee or his representative to bring an action within a period of time which in no event would exceed the applicable statute of limitations.

We have seen how death may be reassessed in cases where the possibility of a freezee's returning to life is the basic issue. Now let us turn to some of the areas of law which cryonics will affect, but where the time of the freezee's revival is, for the most part, immaterial. It is first necessary to recognize the puzzling legal questions that are implicit in radical technological achievements of this sort before we try to answer them. Our purpose here is to expose these problems and to suggest ways in which a fluid system of jurisprudence such as ours should cope with them. It is not our purpose here to speculate on every conceivable problem that may arise. The law will have to work them out as they appear.

*The Right to be Frozen.* Mr. Ettinger maintains that:

As to one's basic right to cryonic suspension, there can scarcely be any question. Within the framework of our traditional and decent society, the right to live is absolute and does not depend on such things as one's usefulness; we petition no court for our right to exist.<sup>43</sup>

The following statute is clearly applicable here:

A person who is eighteen years of age or older has the right to direct the manner in which his body shall be disposed of after his death.

...<sup>44</sup>

However, this right of directing the disposition of one's body after death is conditional: (1) the instructions of the decedent regarding disposition

<sup>42</sup> See note 51 *infra*.

<sup>43</sup> Henderson and Ettinger, *supra* note 32, at 417.

<sup>44</sup> N.Y. Pub. Health Law § 4201(1) (McKinney Supp. 1967).

must meet certain formal requirements,<sup>45</sup> and (2) the recipients of the body must meet certain standards.<sup>46</sup> To comply with the first condition the Cryonics Society of New York has already drawn up a body authorization form.<sup>47</sup> To buttress this form it has prepared a personal affidavit form to be completed by the proposed freezee<sup>48</sup> and a consent form to be completed by the next of kin.<sup>49</sup> Compliance with the second condition

<sup>45</sup> *Ibid.* § 4201(3) provides that:

Any such donation, authorization or consent made pursuant to the provisions of this section shall be by written authorization of the deceased made during his lifetime and signed by him in the presence of at least two witnesses, aged eighteen or over, whose signatures shall be affixed thereto. . . . Neither the appointment of an administrator or of an executor, if the authorization is contained in a will, nor a court order shall be necessary or required for such donation, authorization or consent, provided that the instrument conveys the clear intention of the person making the same. Any such disposition of his own body or parts thereof may be revoked by the donor at any time prior to his death by a written instrument executed in the same manner as herein provided for authorization.

<sup>46</sup> These standards are set out in the N.Y. Pub. Health Law § 4201(3) (McKinney Supp. 1967):

A donee may be an individual, or a *licensed hospital, institution or agency engaged in the advancement of medical science* or the restoration of diseased, wornout or injured parts of living human beings, or a bank maintained for the storage, preservation and use of parts of the body. (Emphasis added)

<sup>47</sup> In the instrument the proposed freezee states that:

[He, she] is ---- years of age, of sound mind and will, and it is [his, her] wish that upon [his, her] death [his, her] remains be preserved cryogenically.

In addition there is a clause providing for delivery of the remains of the deceased to the named donee as soon as possible after death; a clause providing that the donation is solely for the purposes of cryogenic preservation; and a clause giving this instrument the "same force and effect as a codicil" to a will. The sample form referred to herein as well as those referred to in notes 48, 49 and 51 *infra* were sent to this writer by Saul Kent, Editor of Cryonics Reports and Secretary of the Cryonics Society of New York.

<sup>48</sup> This affidavit states essentially what the body authorization form did [see note 47 *supra*] but adds a disclaimer clause whereby the deponent (freezee) holds the donee of his body (including its members and employees), and anyone with whom the donee might contract to help carry out the freezing process, free from all liability. Moreover, the deponent agrees never to bring an action for:

personal or bodily injuries, known or unknown, damages, costs, loss of services, expenses, and/or compensation on account of, or in any way growing out of or resulting from, the entire procedure of preparing and cryonically suspending deponent's body, cadaver, or corpse. This immunity from liability is intended by the deponent to extend to the persons and circumstances of his possible restoration to life and health.

<sup>49</sup> This form calls for the next of kin to state, under oath, that he knows of the desire of the deceased to be frozen and that he will irrevocably grant his rights in the body of the deceased to whomever the deceased named in the trust agreement [see note 51 *infra*]. In *In re Bower*, 17 Misc. 2d 936, 187 N.Y.S.2d 270 (Sup. Ct. 1959) the Court held that the surviving spouse or next of kin has a right to possession of the body in the absence of testamentary direction. By virtue of Section 4201(1) of the New York Public Health Law [cited in note 45 *supra*] a written authorization will suffice if the formalities specified therein are complied with. Should the freezee's will or written authorization be lost or concealed by the next of kin, this consent form would be required before the body could be placed in cryonic suspension.

A disclaimer of liability clause is included and so is a clause providing that:

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is evidenced by the very principles for which the cryonics societies stand. Certainly they are proper donees.<sup>50</sup> Another form in which the proposed freezee manifests his intention to be cryonically suspended is the *inter vivos* trust agreement. This is used primarily, however, to provide for the payment of the initial and yearly maintenance costs of the cryocapsule, and for the care of the freezee; in addition the freezee is insured a strong financial position on revival.<sup>51</sup> The reasons why the trust is *inter vivos* are: (1) to transfer the required funds from the freezee's assets before his death, and (2) to settle at least the bulk of the legal and administrative problems "before the patient loses control."<sup>52</sup>

Although cryonic suspension can conveniently be fit into the present laws governing the disposition of dead bodies, many people will make the argument that freezing violates society's notions of common decency. But they will meet substantial opposition in the form of established legal doctrines. It has been said that:

[O]nce it has been admitted that a certain person has the right of burial, it seems that that person can bury the corpse in any manner he sees fit, so long as it does not outrage public decency or amount to a public nuisance.<sup>53</sup>

In *Seaton v. Commonwealth*<sup>54</sup> a father was said to violate no duty to the state by burying his child's body in a paper box in his wood lot rather

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The deponent [here, the next of kin] hereby disclaims and renounces any interests [he, she] may have in any and all monies or property which [the deceased] may designate or has designated to be applied to the expenses of his cryogenic preservation and suspension.

A question arises as to whether this renunciation will apply to the entire trust fund or just that amount that will cover the freezee's expenses for a certain length of time.

<sup>50</sup> See note 46, *supra*.

<sup>51</sup> The proposed freezee is referred to as the Grantor. He declares the purpose and essence of the trust agreement to be the cryonic suspension of his body and his eventual restoration. In addition to a delivery of possession clause and a disclaimer of liability clause (virtually duplicating these provisions in the body authorization and personal affidavit forms, see notes 47 and 48 *supra*) the trustee is empowered to use the trust funds in almost any fashion to further the purpose of the agreement. When the trust terminates because of the Rule Against Perpetuities (that is, if the freezee has not been revived by this time) the trustee must contract with some corporation, individual or institution that it deems competent to carry on the cryonic suspension.

The Grantor is to receive any surplus of trust property, after payment of all expenses and fees, should he be revived and such a surplus exists. If a surplus exists after the freezee's body is destroyed "by accident, war or other catastrophe" it reverts to his estate. Whether negligence in thawing will constitute such a "catastrophe" remains to be seen.

If the corpus of the trust is to include only the proceeds of a life insurance policy there is no reason not to apply the C.R.P./c.r.p. rules described in the text above, just before footnote 42. See note 57 *infra*.

<sup>52</sup> Henderson and Ettinger, *supra* note 32, at 416.

<sup>53</sup> Note and Comment, 23 Mich. L. Rev. 274, 275 (1924-25).

<sup>54</sup> 149 Ky. 498, 149 S.W. 871 (1912).

than in a private cemetery or private burying ground. We also must take into consideration community interests such as property values and health hazards<sup>55</sup> in deciding whether mass freezer facilities, or cryotatoriums, are to be banned. Opponents of cryonics were probably shocked by a formal opinion (the first of its kind) issued by the Attorney General of Wisconsin:

[I]t is my opinion that no Wisconsin statute, expressly or by implication prohibits such interment.<sup>56</sup>

*Life Insurance:* The determination of the status of life insurance proceeds from a policy on the freezee's life is sure to present difficulty. Will the freezee be dead enough so that the insurance company will have to pay off the beneficiary? This problem has two distinct facets: (1) where the beneficiary is the corporation or individual named as trustee in the trust agreement to apply the proceeds of the policy to the cryonic preservation of the decedent's body,<sup>57</sup> and (2) where the beneficiary is the next of kin and where the funds for freezing are to come from other sources. Mr. Ettinger suggests a solution in the case where the proceeds of the policy are earmarked for cryonic suspension:

Why shouldn't life insurance companies pay off on policies intended for cryonic suspension. The actuarial tables are unaffected, and indeed the insurance companies stand to profit greatly since the family needs *extra* life insurance if they intend to use this type of financing.<sup>58</sup>

Although he insists that "there is an immense *new* market for life insurance,"<sup>59</sup> thus far the companies have flatly refused to write policies in which a cryonics society is the named beneficiary.<sup>60</sup> He further suggests that if a person is frozen but for some reason didn't have an opportunity to purchase freezer life insurance, his family should be allowed some sort of tax relief or subsidy.<sup>61</sup> This assumes the fact that freezer coverage will become very common, and possibly, at some point in a person's life, mandatory. In the case where the beneficiary is not the named trustee, Mr. Ettinger feels that, on one condition, the insurance companies should

<sup>55</sup> Ettinger, *supra* note 2, at 92.

<sup>56</sup> Written opinion from Bronson C. La Follette to Dr. E. H. Jorris, Wisconsin State Health Officer, Nov. 1, 1967.

<sup>57</sup> The trust agreement provides in note 1 that:

If a life insurance policy is used [as the corpus of the trust], the Trustee(s) named in this instrument should also be named as beneficiary(ies) of the policy.

<sup>58</sup> Henderson and Ettinger, *supra* note 32, at 417.

<sup>59</sup> Ettinger, *supra* note 4, at 67.

<sup>60</sup> In a recent telephone conversation this writer was informed by Mrs. Robert Ettinger (a member of the Cryonics Society of Michigan) that Fred K. Martin, Jr. of the Travelers Insurance Companies in Fresno, Calif. has written life insurance policies with the Cryonics Society of Calif. as beneficiary.

<sup>61</sup> Ettinger, *supra* note 4, at 73.

pay off. He reasons that as the freeze died under ordinary circumstances, the actual basis of his insurance doesn't change. Thus the insurance companies will not suffer any unusual loss.<sup>62</sup> The one condition is that the freeze shall not have committed suicide with the intent to be frozen. It seems that many people might elect to leave this world and all its problems so that they may return to a better society in the future. This increase in the suicide rate would have to be obviated.<sup>63</sup>

*Changing a Freeze's Will:* We have seen that while a person is in cryonic suspension his estate should not be touched until we are sure that if and when he is revived he will be "someone else." But during the period when the estate is out of reach of the freeze's beneficiaries certain changes may occur, either in the status of a beneficiary or in the size of the estate, which the freeze would have compensated for had he still been living. The issue then arises as to whether a freeze will be allowed to modify or revoke his will through an agent, i.e., by a power of attorney. Developing the problem logically we see that we are confronted by a statute which says that to revoke or alter a will you need either another will<sup>64</sup> or:

A writing of the testator clearly indicating an intention to effect revocation or alteration, executed with the formalities prescribed by this article for the execution and attestation of a will.<sup>65</sup>

These formalities are stated as follows:

[The will] shall be signed . . . by the testator or, in the name of the testator, by another person *in his presence and by his direction*.<sup>66</sup>

Even if we can possibly extend "in his presence" to a situation where the "other person" is in the same room as the frozen testator, can we satisfy the requirement of "by his direction" by validating a pre-death power of attorney from the freeze to his agent? Here is where the problem lies. In *Weber v. Bridgman*<sup>67</sup> the Court held that when the principal dies the agency relationship is terminated. But now, by statute, if the person giving the power of attorney is engaged in certain occupations (either at the time of execution of the power or thereafter) the agency will not be terminated on the death of the principal.<sup>68</sup> There is no reason why

<sup>62</sup> *Id.* at 94.

<sup>63</sup> *Id.*

<sup>64</sup> N.Y. EPTL § 3-4.1(a) (1) (A) (McKinney 1967).

<sup>65</sup> *Ibid.* § 3-4.1(a) (1) (B).

<sup>66</sup> *Id.* § 3-2.1(a) (1) (Emphasis added).

<sup>67</sup> 113 N.Y. 600, 21 N.E. 985 (1889).

<sup>68</sup> N.Y. Gen. Ob. Law § 3-501(1) (McKinney 1964). The occupations are:

a. a person serving in the armed forces of the United States, or  
b. a person serving as a merchant seaman outside the continental limits of the United States; or

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an additional category cannot be set up for freezees so as to allow the power of attorney to revoke or alter a will to survive the cryonic suspension.

*Murder:* The theory behind cryonics is that at death the person is not "completely dead" since most of his cells are still living.<sup>69</sup> "Since the current program must conform to the current law,"<sup>70</sup> we must use our present criteria to determine when death has occurred in the first instance even though these criteria will be changed in the future. Once a physician cannot reverse the failure of certain essential bodily functions the patient is dead *as far as we can determine*. Therefore, since "freezing kills"<sup>71</sup> *by our standards*, freezing a person before he dies is murder. The question is will the law become more tolerant and permit euthanasia where freezing would be available? Cryonists have asked:

Should a terminal cancer patient be frozen by imperfect (legally lethal) methods before clinical death, if this will improve his chances? We must balance the certainty of impending death from cancer, and the amount of time judged to remain, against the other factors. In the near future, some physician may courageously decide, with the concurrence of the patient and family, that the ethical thing is to freeze the patient before clinical death, and then the custom may grow, perhaps, without ever being brought to litigation.<sup>72</sup>

*Other Areas of Law:* Some of the other problems that the law will soon face are:

(1) whether damages can be suffered by a freeze (in tort, contract, etc.)

(2) assuming a freeze can suffer damages, whether malpractice suits against physicians and technicians who freeze, maintain and thaw the patient will be successful. The effectiveness of disclaimer clauses in legal agreements will have to be tested.<sup>73</sup>

(3) whether actions against manufacturers and distributors of the freezing apparatus will be successful (product liability).

Keeping the law up to date, that is, molding it to fit new technological developments such as cryogenic freezing of human bodies is an

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c. a person outside such continental limits by permission, assignment or direction of any department or official of the United States government, in connection with the prosecution of any war or any campaign of a military nature in which the armed forces of the United States are participating or have been ordered to participate.

<sup>69</sup> Henderson and Ettinger, *supra* note 32, at 415.

<sup>70</sup> *Id.*

<sup>71</sup> Quoted in Frisch, *supra* note 7, at 20.

<sup>72</sup> Henderson and Ettinger, *supra* note 32, at 417.

<sup>73</sup> See notes 46-48 *supra*.

extremely difficult undertaking. The intellectual problem of interpreting a standard word such as "death" in new (and certainly unusual) situations is compounded by the vast number of these situations that will inevitably confront us. Every single statute that contains the word "death" or the word "decendent" will have to be re-examined. Every common law concept that incorporates these and related words will also have to be re-examined.

We have seen why the concept of death must be reassessed in the light of the recognition of cryonic suspension as a reality. But we must keep in mind that reassessment is not redefinition.<sup>74</sup> For the time being we must restrict our refusal to consider death as a finality to the field of cryonics. Making legal provisions for future scientific discoveries is an impossibility. Therefore, we are totally unprepared to make death completely elastic. Until science is able to prevent death (*i.e.*, before it occurs) as opposed to "curing" it (*i.e.*, after it occurs), we must defer to its "attempt" at finality.

It is true that a great demand is being made on future scientists. As Dr. Arthur P. Rinfret, a cryobiologist, has said:

[Y]ou really cannot argue the success or failure of the experiment [cryonic suspension] on scientific grounds. It is merely a statement of faith—faith in the capabilities of the science of the future, and faith that future scientists will be interested in trying to revive the body.<sup>75</sup>

They will be required not only to cure the cause of death but also to revive the body, either before or after curing the cause of death. But there is no reason to doubt that science can discover a way whereby such a procedure would become routine. As a result, the possibility of revival after only a few years, or even a few months is not as remote as some might be inclined to think. And ten years from now will bring with it an even greater prospect of early revival. That is, should terminal cancer still be a bane to mankind in the year 1979, the chances that a cure will be discovered within a very short time thereafter will definitely be greater than they are today. It is clear that whether we are confronted with the legal implications of cryonics next year or ten years from now, we have to be prepared.

<sup>74</sup> Regarding organ transplantation it has been said that:

'[R]edefining' death in this context must be recognized as a euphemism for advancing the legal moment of death to a point in time when the removal of organs would leave them in perfectly useful form. To put it crudely, redefining death for purposes of recovery of an organ, the donor should be dead, but not quite dead.

Grad, *Legislative Responses to the New Biology: Limits and Possibilities*, 15 U.C.L.A. L. Rev. 480, 500 (1968). Frank P. Grad is an Adjunct Professor of Legislation at Columbia Law School.

<sup>75</sup> Quoted in *Cryoburial Raises Scientific Heat*, *supra* note 31, at 35. Arthur P. Rinfret is a cryobiologist with the Linde Division of Union Carbide Corp. in Tonawanda, N.Y.