

CRYONICS

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EDITORIAL MATTERS

Back issues of CRYONICS are still available for all issues in the current series, March 1981 (#8) to the present. #8 and #9 cost .75 each or both for \$1. #10--#20 are \$1 each. Issues #1-7 are no longer in print, since they were published several years ago and had little of current interest. Some of the ideas in those issues, along with a basic introduction to cryonics, are included in our popular booklet, Cryonics: Threshold to the Future, which is still available for \$1. You are encouraged to purchase at least one copy of the booklet and donate it to your local public library, perhaps with your own name and phone number included as well. As a librarian, I know that many people do ask for information on cryonics. Your contribution could be the door that opens the future for someone in your city. The booklet is also excellent to give to friends who don't understand your interest in cryonics.

Stephen Bridge
Co-Editor

REFLECTING FORWARD: Why you should consider membership in IABS.

The Institute for Advanced Biological Studies, Inc.--it's a mouthful. To most of our readers IABS probably doesn't stand for much, except that we publish this newsletter. Perhaps it is time for us to step back from other pressing matters and take a good long look at what the Institute for Advanced Biological Studies is all about. What is it? What has it achieved and where is it going?

IABS was incorporated July 6, 1977 as an Indiana not-for-profit corporation and subsequently received federal tax-exempt status. Founders and first-year members included Steve Bridge, Michael Darwin Federowicz, Allen Lopp, Joseph Allen, Anna Schoppenhorst, Judson Horning and Floyd Tolle. Like most organizations started by young people out to change the world, IABS started with high ambitions, big plans, and little money. In the past five years our reach frequently exceeded our grasp; but we have survived and we are now making important contributions in publications, research, and offering of suspension.

This issue of CRYONICS marks our first anniversary of continuous publication. We hope that you have enjoyed reading CRYONICS as much as we have enjoyed editing and publishing it. Looking back over the past twelve months, we feel we have reason to be proud and satisfied. CRYONICS has grown in both scope and volume from our first six-page issue last March. Most importantly, we have kept the vow we made to ourselves and to our readers: we have dealt with ALL of the issues confronting cryonics, openly, honestly, and from a variety of perspectives. We hope CRYONICS will not change in this important respect, and we expect our readers to let us know if it does.

IABS is growing in other areas as well. Since the move of the corporation offices and laboratory equipment to California was undertaken last year, we are again conducting research--this time in co-operation with Cryovita. We believe this is meaningful research which will soon have a great impact on the improvement of suspension techniques.

Our readers will be able to judge this for themselves when our research is published in the next year or two. In the meantime, it is exhilarating to see research underway in a laboratory wholly owned, operated, and funded by cryonicists. IABS has been part of making this possible.

Two years ago IABS finished compiling its own set of cryonic suspension documents, allowing several members to arrange suspension through IABS. We currently have a contract for suspension services with Trans Time. At this time, because of strong economic and biologic considerations, IABS is only willing to accept suspension donors who wish to be suspended with the neuropreservation method (head only). When we first began to strongly advocate neuropreservation over conventional whole-body storage, we were told that this was "public relations suicide." At least within the cryonics community we have not found this to be true. Almost half of the patients currently in storage are neuro-patients, and many members of BACS and Alcor have now opted for the same choice. We plan to continue our support of neuropreservation and to improve the advantages this option offers. We feel that the next few years will vindicate our position and demonstrate an increasing movement toward this alternative. (A full discussion of the advantages of neuropreservation will be published in the next issue.)

To strengthen the safety margin of its commitment to neuropreservation, IABS has recently purchased its own multiple-patient neuropreservation vacuum storage unit (**to be covered in the next issue**). We believe that ownership of this dewar will help us to reduce future costs and give us the necessary flexibility if the need ever arises for us to change storage services or to undertake storage ourselves. Our readers are familiar with the headaches that high vacuum equipment carries with it. However, we feel that the gain in flexibility and protection is worth the trouble.

Another high point of the past few months (although it didn't seem like that at the time) was IABS taking the risk to keep two BACS-Trans Time patients in suspension when other cryonics organizations were unable or unwilling to do so (see CRYONICS, January 1982). IABS agreed to maintain the couple on dry ice, possibly indefinitely. When we transported the first of these patients to Los Angeles, many warned us that the decision could sink our organization. We were told that we had "bitten off more than we could chew" and that "if no one else cared, why should we?" Even we were surprised when, before the second patient could be removed from liquid nitrogen, writer/comedian Richard Clair Jones contributed \$12,000 to pay the patients' back bills and keep them in storage for another year. However, had not IABS been willing to assume care for the patients, the first one would have been cremated two days before the telephone call which extended his storage time. Not all situations merit such a risk; but we will continue to act when we feel it is proper.

The Institute for Advanced Biological Studies has had an eventful and a basically satisfying year. Our membership is increasing by about two associate members each month, so growth should continue. We hope that you will support this growth with your membership, Associate for \$15 per year or Supporting (voting) for \$50 per year. Memberships are not tax-deductible, but they do include your subscription to CRYONICS. Donations to support IABS or its research are deductible. We also need your contributions of articles and other assistance for

CRYONICS. (E.g., a typist in the Los Angeles area would be well received.)

We plan to significantly expand our research and our publications mailings in the next year. We have ideas for possible new ventures. Cryonics is always a gamble and 1982 is just the next throw of the dice in a very long game. But the stakes are worth it. The one thing we are sure of is that only with your continued and increased support will we succeed. Thank you for a wonderful year.

Michael Darwin Federowicz
IABS President

RIP FOR RNA?

Many long time cryonicists will be acquainted with the controversial claims of Dr. Benjamin Frank. Dr. Frank was a New York physician who claimed that dietary supplementation with the nucleic acid RNA could reverse and slow the aging process in humans. Dr. Frank also claimed that RNA in the form of a cream could reverse or prevent age-associated wrinkling of the skin. The book Dr. Frank's No Aging Diet and a more recent cook book promoted the use of high RNA foods such as fish and brewer's yeast.

The saga of Dr. Frank, his diet, and his relationship to cryonics is an interesting one, laced with high stakes, incredible claims and black comedy. My first contact with Dr. Frank was in the form of a phone call which he made to Curtis Henderson, then president of Cryonics Society of New York. CSNY had promised Dr. Frank a group of aged volunteers to test his wrinkle cream and diet. The conversation went like this:

Curtis Henderson: "Yes, I know, Dr. Frank...I know we promised you the old people...Oh, yes, we'll get you the old people...I know, I promised you the old people several weeks ago...Yes, Dr. Frank, I know we told you we'd get you the old people and we will get you the old people but right now we're just too busy taking care of the dead people to worry about where the old people are going to come from."

Well, despite lack of any controlled studies and more importantly despite lack of any effect on his own health, Dr. Frank continued to push his "No Aging Diet" and made his book a best-seller. The problem was that Dr. Frank was dying. Of what? Diabetes-related arteriosclerosis--an aging disease. Despite his RNA diet Dr. Frank was dying of the very thing he said he could treat effectively. About two years ago Dr. Frank decided on a course of treatment as questionable as his own diet and flew off to the Bahamas for chelation therapy to try and unblock his arteries. The report is that while undergoing this treatment he went into kidney failure. While being rushed to the airport for an emergency flight back to Miami for artificial kidney treatment, Dr. Frank died, a victim of an accelerated form of the principal age-associated disease: arteriosclerosis.

Obviously there is a lot of pathos in this story. Frank could probably have lived quite a while longer without renal failure and without dialysis if he had not undergone chelation therapy, which is known to be a considerable risk for damaged kidneys (as anyone with arteriosclerosis eventually has). He could have lived for many more years after the loss of kidney function, though with perhaps a less-

ened quality of life, on hemodialysis. In short, he could have been alive today. There is nothing funny about that kind of misjudgement.

What is humorous in a black sort of way is that, even though Dr. Frank is dead, his diet, his book, and his formulas are still being used. We even understand that there are plans afoot to market a variety of his products to the public in general and to immortalists in particular. Apparently being wrong in the most embarrassing and permanent way possible has little effect on what people will believe or sell or buy. Let our readers beware. MD.

STILL MORE SCURRILOUS COMMENTS ABOUT ARLENE SHESKIN

by Thomas Donaldson

I have read Steve Bridge's comments defending Arlene from the charges I laid against her with much interest. While my differences from Steve consist mostly of the fact that I emphasized the negative things about Sheskin's book while he emphasized the positive things, and I certainly believe that Sheskin's book has positive elements, I remain unconvinced by Steve's defense. I believe that Sheskin has made a fundamental error which wipes out her book as a sociological study....even while I agree with Steve that it is worth reading for some of the information it contains.

My comment concerns the appropriateness of studying the response of cryonicists to a freezing as an instance of American customs and response to death. The point is not that having to be suspended is not a terrible misfortune for both the person frozen and their relatives and friends. It IS a terrible misfortune. It is even true that in the broad, metaphorical use of the word "grief", it is appropriate to describe the friends of a suspended patient as "grieving". Yet many other terrible misfortunes simply are not felt as or treated as "death" by Americans: your daughter may disappear in New York, your wife may become catatonic and have to be fed and washed like an infant, your husband may break his neck and become quadriplegic, but in NONE of these cases do people ever hold a funeral for the departed, distribute their property, or show the same kind of emotional response we show to a DEATH. And Sheskin would have been one of the first to complain if another sociologist, claiming to study customs and response to DEATH, would insist upon including all sorts of other cases: parents of runaways, spouses of quadriplegics, Rabbis whose sons enter a Roman Catholic order...

I don't think it ever clicked for Arlene. In fact, while reading her book I had a quite powerful feeling that she felt that all of the care we take with a suspension patient, the perfusion and cooldown, was really a sort of weird funeral rite. She took it all down on paper and never caught on to a word of it.

It is true that she says nice things about cryonicists. I am compelled to say, however that we should put about as much weight on her comments as we should upon praise for our piano skills coming from someone who was certifiably tone-deaf!

MOVIE REVIEWS

by Mike Darwin and Steve Bridge

We don't plan on making a regular column out of this, but we would like to review two recent films which deal in intelligent ways with the problem of death. Also, Steve writes about another film which is not about death but which may have other special meaning for cryonicists. We recommend that you see these films both for a good evening's entertainment and to examine in yourself the questions they raise. Please note that we are confining our reviews to the issues in each film which fit this publication's philosophy. Like any good film, each of the three have other dimensions and themes.

On Golden Pond.

This much publicized picture is a rare example of a nearly perfect film. It is artistically blessed with the magnificent performances of Henry Fonda and Katherine Hepburn. The supporting players are perfectly cast and the cinematography is exquisite. Finally the film has a very direct and powerful message: getting old is a hell of a thing to have happen to you. Indeed, just about the only thing which 80 year-old Norman Thayer and his wife Thelma can find worse is dying.

As the film opens, Norman and Thelma have returned to their cottage on Golden Pond for what Norman sees as perhaps his last summer. He is bitter and would like to make life as miserable for everyone else as it is for him. Additional complications arise when their estranged daughter Chelsea shows up with a new boyfriend. Chelsea wants to dump the boyfriend's 13 year-old son onto Norman and Thelma for a few weeks while she and the boyfriend vacation in Europe. The conflicts between these three generations are gritty and painfully real. Time and distance have separated these people from each other just about as completely as possible. They are drawn together only by the few things they have in common--respect for achievement, honesty, and by the need and desire to find love and respect in each other. Perhaps also, it is the terrible awareness that they are all faced with limited time. It is clear to everyone that Norman and Thelma are at the end of their lives. Strikingly, this is clearest to Norman himself, who reacts by putting up a barrier of obscenity and ill temper between himself and his family.

When Norman is buying gas for the family boat, two young service attendants mock him about his age. He responds by forcefully telling them that it is a hell of a thing to be old, to go blind and deaf and shake like a leaf for no reason. Too bad the kids won't understand it themselves until it is too late. However, it isn't until the last scene of the movie that Thelma herself understands that she and Norman are going to die. While carrying a load of dishes out of the cottage Norman has an attack of angina and collapses on the porch. While frantically trying to reach a doctor Thelma becomes convinced that Norman is going to die right then. Suddenly she tells Norman that she feels this. She says she can see him laid out in his blue pin-stripe suit and starched white shirt at the local mortuary. Norman asks her, "How do I look?" Thelma replies, "Not good, Norman. Not good at all." That says everything. Norman recovers this time, but the couple has a new

awareness of how short their future is. As the camera moves away from them, Norman and Thelma are left clinging to each other for support in the face of the unsupportable. The viewer is left with the realization that very soon they won't even have the support of each other. That is the nature of growing old and dying. There is no justice in it. MD

Whose Life is it, Anyway?

Perhaps the title of this film should have been "Whose Life Was it, anyway?", since throughout 90% of the picture the protagonist, played by Richard Dreyfuss, insists he is already dead. This movie is not so much about the right to die as it is about the nature of identity.

The story centers around the changes that occur in a vital young sculptor's life after an auto accident leaves him paralyzed from the neck down and dependent upon artificial kidney treatment for survival. Ken decides that he doesn't want to go on living that way. He states that a sculptor's work is his life; that without his hands his life is meaningless and that he is therefore essentially dead. He asks to be taken off of dialysis so he can complete the process.

The drama in the film revolves around the conflicts and emotional turmoil his decision to die produces in the medical staff, particularly in one Dr. Emerson (played by John Cassavetes), who is the chief of medicine at the hospital and Ken's primary physician. Emerson is the kind of doctor who calls death the enemy and considers each patient lost to be a burning personal defeat. After investing six months, hundreds of thousands of dollars, and his own priceless skill and ego, he is a bit miffed that Ken isn't sending thank you notes instead of demanding to die.

The film is well acted and it is entertaining. The legal questions it raises are ones everyone should be exposed to, although most immortals will already have some familiarity with them. The main issue at stake is a person's right to refuse medical care even though it may cost him his life. A corollary issue is whether anyone who refuses such medical care can truly be said to be sane. You and I as immortals may have opinions on the latter question; but then that hardly matters in a court of law. It seems painfully apparent to me that an individual DOES have the right to refuse medical care--even if it kills him. While the events depicted in the film may occur from time to time, it is my own experience as a dialysis technician that they rarely do. Everytime that I have seen a patient make a serious and reasoned plea to be removed from dialysis it has been done. True, a physician may consider a patient's competence in the matter. He may delay long enough to get a social worker, minister, or friend to try and talk the individual out of it. But the physician would not be very likely to up the patient's dosage of valium and hire a psychiatrist to have a rational, mentally balanced man declared clinically depressed and thus incompetent just to keep him on dialysis (Dr. Emerson's strategy in the film).

The real abuses of medical technology occur not in cases like Ken's, but in cases where the individual is unconscious or otherwise incompetent and cannot make the decision to stop the application of inappropriate treatment. This is a danger to cryonicists as well; we don't want to be kept on a respirator for two days while the physician endlessly repeats tests which have already indicated brain death.

Nor do we want to be supported by extraordinary means when brain integrity is at stake.

Much like one of the consulting psychiatrists in the film, I feel Ken made the wrong decision. But I also feel very strongly that he had the perfect right to make it. Emerson's actions in calling in a social worker and requesting a psychiatric evaluation were reasonable and prudent. What was not reasonable and prudent was to make the decision for Ken and then try to ram it down his throat--something which physicians are frequently wont to do when they think they can get away with it.

However, Ken has another problem within himself. By tying his life to his art he made it impossible to see himself as a viable human being without it. There is perhaps a lesson for all of us here. We are not our work or our friends or our family or our genitals. We are something that includes all of these things but is somehow much more than the sum of them. I don't pretend I'd like to live like Ken. But then I don't pretend that not being able to have sex means it's time to drop dead either. Of course, as a cryonicist, I've given myself one more choice. It makes a difference, doesn't it? MD

Chariots of Fire.

Though it's not about death, this movie has much to say to cryonicists. One of its major themes deals with the courage and integrity of a man who follows his own principles in the face of hostility from friends and from his country. The film is closely based on a true story of the rivalry between two British trackmen preparing for the 1924 Olympics in Paris. One man is a Scottish missionary running for the glory of God. The other man is Jewish, running to prove something to the people he feels have snubbed him. The real crisis occurs when the Christian runner discovers that the first heat of his Olympic event is to be run on Sunday morning. Breaking the Sabbath would mean that everything he had been running for was a sham. Even though he is the favorite to win a gold medal, he refuses to run.

Let me assure you, this is not a "Christian" film. No judgements are made as to whether anyone is right or wrong. The filmmakers have merely said, "Here is what happened. This is what these men were like. You may judge them yourselves." In its own way, this too is a nearly perfect film. It is intelligently scripted, superbly filmed and acted, and it is a tribute to the type of inner courage that I hope we can have when our beliefs are tested. SB

LETTERS TO THE EDITORS

Dear Editors,

Your piece on THE HIGH COST OF CRYONICS, like your magazine generally, is well done and useful. Glad to see it.

Without implying I agree with everything else, there are only a few comments I'd like to make now.

1. It is not accurate to say that CI considers the neuro-preservation option "an unacceptable risk." CI directors have tended to regard it as a public relations risk, and some have other objections on a personal basis; but it has not been ruled out, and some of our members prefer it. There should be a formal decision soon.

2. It is slightly misleading to say, "CI has frequently criticized Trans Time for having overly elaborate and costly procedures." Some CI people (mainly Walter Runkel, Mae Junod, and myself) have questioned the value of certain specific Trans Time practices, on what seem to us reasonable grounds; our minds remain open. (Confucius say Man with hole in head have open mind.)

3. I think you have given the Florida group too little weight. It has its own weaknesses (which we hope are only temporary) but also its own strengths, including people who are willing to donate substantial sums. It shows every sign of being in for the long pull.

4. (a) Even if costs must rise (which CI is not ready to admit), they could still decline as a percentage of disposable income.

(b) You suggest that when cryonic suspension is a recognized medical practice, it will become much more expensive, because medicine is very expensive. But many think the cost of medicine is unjustifiably high, and can come down, e.g. through reduction of fraud, encouragement of competition, licensing of paramedics, etc.

(c) When we have cryonics on a larger scale, and freezing (under appropriate conditions) is permitted before clinical death, the health insurance companies may pay for it. Consider. A relative of mine, aged and debilitated, has recently had two hospital episodes costing about \$30,000 together, and is now in a nursing home at about \$1,200 / month, with no chance of a life approaching normality or enjoyability. If she could have chosen early freezing instead, the health insurers could have paid for the perfusion and been money ahead. (The impact on life insurance would be small.) Other possibilities also come to mind, where even expensive perfusion may represent a net saving over alternatives.

Long life,
Robert C. W. Ettinger
Oak Park, Michigan

Dear Bob,

I find it a little incredible that after 18 years of negligible public response some cryonicists are still concerned about our "public image." The community at large has been given every opportunity to evaluate and respond to cryonics. The response, for whatever reasons, has been one of overwhelming indifference. In short, cryonicists don't have a public image to jeopardize or worry about. Most people think we are already crazy for freezing corpses.

A more serious question raised by your first point is the issue of ethics. The issue is one of whether or not to deliver what some of us see as superior care and superior financial security. Regardless of

what some squeamish souls may find objectionable or what the uncaring "public" may consider macabre, some of us are certain that this represents not only a better alternative but the only alternative within our means.

A substantial and growing number of cryonicists believe that the place to start cutting costs is not with the quality of care, but rather at the sixth cervical vertebrae. To deny such individuals the only quality alternative they can afford just because it may offend the sensibilities of some gas station attendant in Des Moines is unconscionable.

As for the Florida group, I hope we were wrong in our evaluation. I have made several trips to meet with them and examine their facilities and am in monthly contact with several of their people. Unfortunately, it is my honest opinion that they are about to find out that there are some things even substantial sums of money just cannot buy. It seems almost all lessons to be learned in cryonics are learned the hard way.

The issue of applying cryostasis before clinical death is one that is at this time receiving careful consideration in Southern California. In the next few months this issue should see much additional exposure in the pages of CRYONICS. M.D.

Dear Sirs,

I was very pleased to see your item on the costs of cryonic suspension, a subject that interests me a great deal, as a person yet to sign up with any particular organization.

I would like to make two points right away.

1. Since the bulk of the cost arises after the client is legally dead, there is no fundamental reason why he should not enjoy the use of the funds himself in interest paying investments or home ownership whilst alive, and only hand it over on death. Therefore the costs, however large, could be quite transparent to his lifestyle.

At the moment no cryonics organization known to me accepts payment via a last will and testament. This is because there are delays due to the legal process (clearly not a basic law of physics) and uncertainties due to the possibility of relatives wanting to get their hands on the funds set aside by their owner to save his life. Also, there is the possibility of the client simply having spent some of the assets left in his will and there being insufficient funds available for suspension. However, I see no basic reason why some form of contract could not be prepared that could get around these problems.

Personally, I have been looking, so far without success, at sales of legacies and insurance against litigation. Presumably the client could send the cryonics organization regular statements showing net worth, so as to prove the will would be of sufficient value.

Apart from convenience, there is another strong reason for advocating this course of action. That is inflation. Your article has given me the first really practical analysis of inflation in the United States I have seen. In the United Kingdom, we have had much more severe inflation, and writing as someone who has seen his savings fall in purchasing power many times over this period, I feel that I can write with some authority on this matter. Twenty years ago, the heaviest parcel could be sent through the post here for the cost today of the smallest letter. Accountants and other professional advisors have been worse than useless in dealing with this. A lot of inflation is due to pressures that government can't control, such as overpopulation, consumer and worker's rights movements, longer retirement periods and profiteering abroad with strategic raw materials. I naturally hope for your sakes that U.S. inflation stays down at 3 or 4 percent, but I think in reality that you will see it nearer 15%.

This brings me to my second point:

2. Inflation and life insurance. If a middle aged man requires life insurance for cryonic suspension, he must pay around \$1,000 per year. If he dies in 35 years time, he will have left \$60,000 to his cryonics organization. In your article you suggest that a rise from a realistically assessed cost of \$12,000 to \$60,000 has occurred between 1965 and 1980. This give an average annual inflation rate of times 1.113263577 per unit. (Fifteenth root of 60,000 / 12,000). If this persists, and I believe that 15% will be more realistic, then he'll need $\$60,000 \times (1.113263577 \text{ to the } 35\text{th power}) = \$2,564,963.92$. If inflation is at 4% even then the figure is still $\$60,000 \times (1.04 \text{ to the } 35\text{th power}) = \$235,755.34$.

Another calculation I have done shows the effects of investing \$1,000 per year in an index linked stock, paying 2% interest per year. The result is over \$1.5 million, compared with \$60,000 in life insurance.

One way of getting around inflation is by investing in things. A house that today costs \$60,000 will cost roughly and index linked equivalent at future dates, subject to fluctuations in the market. Therefore a house bought by mortgage protected by term life insurance is a more sensible way of providing for cryonic suspension, provided the societies are able to accept it in a last will and testament.

I am seriously concerned that insuring for anything less than several million dollars is an impractical step for a middle aged person, if life insurance is the only route to cryonic suspension. Clearly the physical would be very strict, and in any case few would be able to afford the premiums.

I am still trying to see if there is an insurance company that will provide a single premium policy that will take inflation into consideration. Obviously before inflation existed, policies were available at affordable prices, therefore theoretically it should be possible.

Sincerely,
John de Rivaz
Cornwall, United Kingdom

Dear Mr. de Rivaz,

The issues you raise are ones which concern us all. We at IABS long ago concluded that long term care of donors in suspension now and in the foreseeable future will to some extent have to depend upon financial assessments on those who come later. Those of us who are working diligently to make cryostasis possible now will in no small way make it possible for those who come later to be frozen. Additionally, the risks are very great now and the uncertainties even greater. Those who come later will benefit not only from our direct efforts, but indirectly from the very fact that we are willing to make the commitment to be frozen now. The Institute is pledged to keep ALL of its donors who have made complete arrangements in suspension as long as there is any money left in the trust fund sufficient to do so. This obviously precludes the holding of separate accounts. Due to the California Attorney General's recent opinion that the Uniform Anatomical Gift Act does not constitute a valid mechanism for conveying control or ownership of human remains for cryonics purposes, we are currently in the process of reevaluating and reconstructing our legal paperwork. It is my understanding that other California cryonics organizations are doing the same.

The problems with legacies have been nicely outlined in your letter. Surely you must realize that the practicality of something is not insured by the fact that it doesn't violate known physical law. Human and social restrictions in the form of ignorance, apathy, and plain shortsightedness are more than enough to keep change from occurring.

I would not dissuade you from investigating ways around the problems you have cited. What I would urge you to do is to make arrangements in short order to have yourself suspended should you die in the meantime. I cannot emphasize enough that arrangements NOW, even if they are inadequate for every contingency of inflation are better than no arrangements at all. If you opt for neuropreservation you can reduce the total amount of money required for suspension by more than half.

With no arrangements at all the one thing I can guarantee you is that you will not have to worry about staying frozen; you'll never get that way in the first place. M.D.

Dear Editors,

The article "The High Cost of Cryonics--Part II" by Stephen Bridge and Michael Darwin (CRYONICS, Feb. 1982) gives the impression that Cryonics Institute's minimum price of \$28,000 may be an adequate amount for a "low technology freezing." As someone who has had direct experience with low technology freezings, I feel that I must take issue with this position.

In the late 1960s--as one of the leaders of the Cryonics Society of New York and Cryo-Span Corporation--I participated in the freezing of three patients. At the time, the only member of our suspension team with any training relevant to cryonics was the mortician, who was paid for his work.

The equipment we used for perfusion was an embalming pump, embalming tools, and some peripheral items. These early efforts at cryonic suspension were decidedly low technology freezings by any stretch of the imagination.

Our charge for cryonic suspension in those days was \$20,000 --a figure that turned out to be too low to cover our costs. In my opinion, \$28,000 would still have been too low to cover our costs at that time.

Thus, it is beyond my comprehension how Cryonics Institute (CI) can possibly deliver low technology freezing and long term storage services for \$28,000 at 1982 prices. I believe CI's assessment of their prospective costs to be wholly inadequate, and their talk of "volunteers" as a means of cutting costs to be a smokescreen to cover their inadequacy. I don't think CI can come remotely close to delivering long term cryonic suspension for \$28,000 no matter how "low" their technology, and I don't know any informed cryonicist outside of CI who believes they can.

The authors suggest that CI's ultra low prices might cause them economic problems after they freeze a few people. I think such problems are inevitable and that they could lead to a catastrophe comparable to that which occurred in Southern California in the early years of the movement.

At the root of the catastrophe in Southern California was Robert Nelson's competitive and wholly unrealistic undercutting

of our already inadequate price of \$20,000. The primary reason that Nelson's irresponsibility has come back to haunt us a decade later was that no one really confronted him directly until it was too late. I don't think we can afford this kind of negligence again.

For Longer Life,
Saul Kent
Hollywood, Florida

FUNDING CRYONIC SUSPENSION

by Art Quaife

TRANS TIME currently offers its cryonic suspension services through non-profit membership organizations such as the Bay Area Cryonics Society (BACS), the Alcor Life Extension Foundation (ALCOR), the Cryonics Society of South Florida (CSSF), the Institute for Advanced Biological Studies (IABS), and the Cryonics Institute (CI). Members must make advance arrangements providing funding to pay the initial costs and long term maintenance costs of suspension. Below we describe the primary methods of providing such funding.

The discussion assumes the Donor is a Member of BACS, but most of it holds true for Members of the other organizations. Some of the discussion represents our understanding of current BACS policy, which is within the province of BACS to determine and change.

AMOUNT OF FUNDING

The minimum funding currently recommended is \$75,000 for whole body suspension (\$35,000 for neurosuspension). About \$20,700 is required to pay the initial costs of whole body suspension. The remainder (about \$54,300) is invested, and the investment income provides funds for continued maintenance. 5% interest on this Donor Fund would provide income roughly equal to the current cost of long term storage. A Fund of this size will suffice indefinitely into the future if and only if BACS continues to be able to earn 5% interest in excess of the rate of inflation of storage charges.

BACS does not guarantee to maintain the patient in suspension indefinitely; it can only maintain the patient as long as funds are still available to pay the continued storage charges of TRANS TIME (or other corporation). If the Donor Fund runs low, BACS would attempt to seek other sources of funds. But again there is no guarantee that such funds could be obtained, and it is possible that the Member ends up thawed and buried.

We cannot predict with any accuracy what the costs of yearly storage will be in the distant future. On the one hand, general inflation along with the increasing sophistication of suspension procedures seem likely to continually raise these costs. On the other hand, this may be offset by increases in the value of the assets in the Donor Fund. And if and when cryonic suspensions are carried out on a wide scale, we will begin to experience the economies of large numbers, with costs coming down substantially. But in light of these

uncertainties, the Member must take great care to provide sufficient funding for himself (or herself; we will use the masculine without prejudice to esteemed female Members)

The above funding recommendation makes no provision for the cost of (assumed) reanimation, which we cannot remotely estimate. We thus recommend that whenever possible, the Member provide more than \$75,000 of funding, as many Members have already done.

Because of the large suspension expenses that must be paid immediately upon the Member's deanimation, the Member must insure that BACS at all times can verify the current status of his funding. Otherwise there may be a delay in beginning suspension procedures until BACS is able to ascertain that the funding source is still in effect.

BENEFICIARY DESIGNATION

No matter what the source of funding, the beneficiary designation must be as follows:

"Bay Area Cryonics Society, Inc., its successors or assigns, a California corporation located at 7710 Huntridge Lane, Cupertino, California 95014."

LIFE INSURANCE

Life insurance is by far the most commonly used method of funding cryonic suspension. It can be written by any insurance company, and indeed we have already used many companies as underwriters.

Ownership of Policy

Currently it is permissible for the insured to be the owner of his insurance policy. At some time in the future, BACS may request that ownership of the policy be transferred to it. A Member should not borrow against the cash value of a whole life policy, unless he provides other ready assets of equal value to replace the reduced death benefit.

Double Billing

As mentioned under "Amount of Funding", BACS must at all times be assured that the policy is still in force, with no large loans against it. Except in cases where BACS is named as owner of the policy, double billing should be requested from the insurance company so that premium notices are sent to BACS (see address under "Beneficiary Designation") as well as to the insured.

Dividends

Whatever the amount of insurance, one way of coping with inflation is to use any policy dividends to purchase additional paid-up insurance, or even additional one year term riders.

Use of Existing Life Insurance

The Member should consider what insurance he currently owns, and to what purpose it is being put. If the Member owns life insurance to provide for family needs, he will probably not want to use this insurance for cryonics purposes. But often a Member has insurance that is not being put to good use -- especially if the insurance was supplied by his employer, is G.I. insurance, or was purchased for the benefit of children who are now grown -- and will want to use it as partial funding for his suspension. In most cases, this can be done simply by changing the beneficiary on his existing policy.

Many times, even unknown to the Member, inexpensive insurance or insurance options are available to him. For example, he may be able to obtain additional insurance whereby his employer pays part of the cost. Such opportunities should be fully explored.

Annuities

Purchase of an annuity with cash value of at least \$75,000 is another acceptable method of providing funding. The Member is owner of the annuity, with BACS designated as beneficiary.

Of course, most Members will not have \$75,000 available to purchase an annuity. An alternative is to combine steady premium payments into an annuity with decreasing amounts of term insurance, maintaining a total death benefit of at least \$75,000. This may be especially advantageous to a Member able to enjoy the tax advantages of an HR-10, IRA, or TSA plan, or to a Member whose employer pays part of the cost of group term insurance. But it must be remembered that if the Member lives until retirement age and uses the annuity for retirement income, other assets must be available to replace the lost suspension coverage.

TRUST FUNDS

Many Members will have assets such as stocks and bonds, mutual funds, real estate, and so on, which they wish to place in their Donor Fund upon death. The best way to accomplish this is through the inter vivos, or "living" trust, with BACS designated as beneficiary. The great advantage of leaving assets through an inter vivos trust, as opposed to a will, is that the transfer to BACS takes place without going through probate. The long delays of probate are eliminated, and the possibility of a disgruntled relative attacking the provisions are minimized.

Ready Assets

The Member should not rely totally upon an inter vivos trust to fund his suspension unless there is at least \$20,700 of cash or immediately marketable assets in the trust. Again, BACS must have funds available to pay the immediate costs of placing the Member in suspension.

The remaining proceeds of the trust will be placed in the Donor's Fund. Naturally, these assets will then be managed as seen fit by the BACS-designated trustee.

Trustee

While he is alive, the Member himself may act as trustee, or may use a bank or other trust agent. BACS is not willing, at the present time, to act as trustee for inter vivos trusts during the Member's lifetime. BACS manages the Donor Fund upon the Member's deanimation.

We understand that BACS does not welcome trust arrangements which provide that someone other than BACS become or remain exclusive trustee of the fund after the Member's death. BACS may be greatly hampered in its efforts to maintain the Member in suspension if it does not have exclusive control over disbursements from the Donor Fund. Trusts naming BACS as co-trustee, with authority over disbursements as opposed to investments, may be acceptable. All trust agreements used to fund suspension must be approved by BACS before it will accept the Member's Application for Suspension Membership.

Trust Planning

Inter vivos trusts may be either revocable or irrevocable. A revocable trust allows the Member complete flexibility; if his intentions later change, he simply modifies or revokes the trust. A revocable trust, however, provides no tax advantages other than escaping probate costs. A properly drafted irrevocable trust may escape income tax during the Member's lifetime, and also estate tax. But discussion of tax law is beyond the scope of this overview.

Norman Dacey's book How to Avoid Probate - Updated! (Crown Publishers, 1980) contains sample forms for placing almost any type of property into an inter vivos trust. However, the Member should set up such trusts in consultation with his attorney.

SAVINGS ACCOUNT

In using a savings account to partially or completely fund suspension, the Member can place his funds in long term accounts which pay high interest rates comparable to those on Treasury bills. (Money market accounts pay similar high interest rates).

There are at least two ways of setting up a savings account to fund suspension:

Trustee Account

The Member opens an account with himself as trustee for BACS. This is quite the same as establishing an inter vivos trust with BACS as beneficiary. The Member has complete control over funds in the account during his lifetime, and can revoke the trust at any time.

The regulations pertaining to trustee accounts may vary from state to state, and may even be different for savings and loan association accounts than for commercial bank savings accounts. In California, setting up a trustee account at a savings and loan association requires only filling in a couple of lines on a card. However, transfer of funds to the beneficiary is blocked until a Consent to Transfer is obtained from the Inheritance Tax Department, which normally takes 2-3 weeks. This much delay is acceptable, although not ideal. The Member is advised to check regulations with local financial institutions.

BACS requires a copy of the Declaration of Trust from the savings institution and proof of deposit of the necessary funds. The Member should determine with the bank an appropriate method to keep BACS continually apprised of the account status.

Savings accounts set up as HR-10 or IRA plans can be used to fund suspension (if the Member dies before retirement age). It should be remembered that if the Member reaches retirement age and begins to draw on the account for retirement income, other assets must be available to replace the lost suspension coverage.

Checking accounts may also be set up as trustee accounts. Since it is not advisable to leave large sums in a checking account drawing no interest, a checking account should not be considered as part of the minimum \$75,000 funding required.

Joint Account

The Member opens an account as a joint owner with BACS. BACS takes no part in the management of funds during the life of the Member, but takes control upon his death. However, some banks will block withdrawal of funds by one owner if they have knowledge that the other owner has died. Before such joint ownership plan is approved, BACS requires a letter from the bank or savings and loan association stating that they will not block such withdrawal.

WILLS

Because of the long delays that usually take place in probate, a will cannot be used as the exclusive method of funding suspension. In the first place, the Member must provide at least \$20,700 (current figure) in immediately available funds to pay the initial costs of suspension. Beyond that, BACS is not anxious to approve funding plans where any part of the minimum \$75,000 is provided through a will, because of the chance that the will may be successfully attacked by relatives not in sympathy with cryonics. In one case that has already occurred, relatives waged a long court battle against cryonics provisions of a will (fortunately they were unsuccessful). In another case, relatives refused to pay any maintenance bills while the will was in probate, and the person wound up buried. (Neither of these cases involved BACS or TRANS TIME). For the above reasons, wills should only be used to pass on surplus assets, with at least \$75,000 provided by other means. Indeed, in light of the possibility of using revocable inter vivos trusts, there is little reason why any substantial assets should be passed through a will.

Neither TRANS TIME nor BACS will undertake to give legal advice concerning the writing of wills. We can refer you to several attorneys who have worked quite closely with our program. As a matter of interest, we mention one of our Suspension Members who has prepared a will, in consultation with his attorney, leaving part of his estate to BACS. In order to help forestall possible attacks by disgruntled relatives, the will includes the following provision:

"If any beneficiary under this Will in any manner, directly or indirectly, contests or attacks this Will, or any of its provisions, any share or interest in my estate given to that contesting beneficiary under this Will is revoked and shall be disposed of in the same manner provided herein as if that contesting beneficiary had predeceased me."

BRAIN AGING AND ITS PREVENTION

As all cryonicists know, our ability to think clearly decreases when we become old. Different people experience this to differing degrees, but the effect remains clear. What can be done about it remains just as unclear; present attempts to treat the condition with drugs such as hydergine, vasopressin, and L-dopa haven't produced much success at reversing it.

However recent articles in SCIENCE have both given us some idea of the processes involved and at the same time suggested some possible preventive treatments. In SCIENCE 213 (1981) 674, GE Gibson et al of the Dept of Neurology at Cornell and Pharmacology at UCLA, present some good direct evidence that decreased synthesis of acetylcholine is directly related to the decreased memory ability of aged mice (and by extension, aged humans). As readers will know, acetylcholine is a major neurotransmitter and the best understood of all such neurotransmitters. What Gibson et al have done is to show that synthesis of acetylcholine decreases in aged mice; by the time their mice attained the age of 30 months, brain synthesis of acetylcholine had decreased by 59%, over half. The loss of acetylcholine synthesis correlated with memory impairments reported by others (Bartus, RT SCIENCE 206 (1979) 1087) and with a behavioral test of ability to traverse a taut string. For some time scientists have known of indirect evidence implicating acetylcholine in the losses of memory which occur with senile dementia (cf. NATURE 293 (1981) 187 and S. Corkin et al (eds) ALZHEIMER'S DISEASE). Gibson et al provide a much more direct confirmation.

Previous to this work other scientists had already shown that receptors of acetylcholine, together with the enzymes involved in its production and destruction, also decreased in aged brains of aged animals (RT Bartus et al, NEUROBIOL AGING 1(1980) 59). Total synthesis of acetylcholine of course comes from a balance of both synthesis and destruction, so that this work does give us new information. Gibson et al measured the synthesis of acetylcholine directly by measuring the rates of incorporation of a labelled precursor into acetylcholine, rather than indirectly by consideration of the enzymes involved.

The article by Gibson et al says little about direct pharmacological intervention to prevent or reverse the problem. A second article in a later issue of SCIENCE (214 (1981) 581) gives us some new information under this heading which should be very interesting indeed.

PW Landfield, RK Baskin, and TA Pitler of the Bowman-Gray School of Medicine in North Carolina studied the influence of several different longterm treatments upon brain aging in rats. They used three different treatments besides their controls. They began all treatments when the rats were in middle-age, at 16 months. One treatment consisted of removal of the adrenals (adrenalectomy) and maintenance on doses of cortisone from that time forth; a second treatment consisted of leaving the rats intact, but also treating them with a stimulant drug, pentylenetetrazol. Finally the last treatment consisted of prolonged dosage with a chemical analog of ACTH designed so as to have the stimulant effects of ACTH without the effects on the adrenals. (ACTH is a pituitary hormone which increases production of cortisone by the adrenals).

The major hypothesis of these studies was that as animals aged, their glucocorticoid hormones would cause the injuries of brain aging, in a similar way to the known fact that adrenal hormones may cause the degenerations of heart disease in aging mammals (BC Wexler, in AV Everitt JA Burgess HYPOTHALAMUS, PITUITARY, AND AGING). This hypothesis was confirmed and clarified by the experiments performed. When they examined the brains of animals subjected to these treatments, they found that those animals whose adrenals had been removed resembled the young animals on anatomical measures of brain degeneration: changes of their brains with aging were far less than those of normal controls. The drug-treated animals showed a similar resemblance to the young although to a somewhat lesser degree.

In terms of measurements of actual learning ability, the drug-treated animals did better than the adrenalectomized ones, even though the cells of their brains showed more signs of aging. Pentylene tetrazol turned out to be much more visibly more effective than the ACTH analog in preserving the ability of drugged animals to learn mazes and reverse maze-learning already attained. In fact, drugged animals performed (not statistically significantly) slightly better than the young controls.

These results give rise to many thoughts about intervention. Even if stimulant treatment will not increase lifespan, means to prevent our deterioration with aging would be very important. Since not all stimulants are the same, it would be useful to know of others than pentylenetetrazol with the same effect, but this drug might well serve anyway. In addition to work of Gibson et al, other indications suggest that deanol or choline might help this problem also: for instance longterm choline administration helped prevent some of the anatomical degenerations of aging in rats and also helped preserve memory. The treatments would probably have to be applied over a prolonged period as preventives rather than as means to reverse brain aging, since neither of these papers suggest that any drugs discussed can reverse damage already done.

REDUCING MORTALITY IN ACCIDENT CASES

Even though accidents are not the major cause of death, even of sudden death, they are still the leading (but only slightly over 50%) cause of death in adults under age 45, and means to reduce the toll would interest cryonicists very much. The majority of these accidental deaths come from severe head injuries, and of these the major cause of death is brain hemorrhage due to injury. Many doctors have remained fatalistic about these injuries, believing (with little evidence) that they result from brain damage which would itself be fatal.

A recent article in NEW ENGLAND JOURNAL OF MEDICINE 304 (1981) 1511) presents some very important evidence that swift treatment will reduce by 2/3rds the total mortality from these accidental head injuries. Several doctors (JM Seelig et al) from Medical College of Virginia report their the results from a survey of 82 different cases of accidental head injury presenting there over the last 8 years.

Patients with severe head injuries and brain hemorrhage usually appear unable to speak, or to respond to verbal commands, although they can breathe without external assistance. The survey of past cases and their treatment found that the major variable affecting recovery after head injury was the time of delay until the brain pressure was relieved by surgically opening the skull. Patients who were treated within the first 4 hours after injury had a mortality rate of 30%, compared to other patients treated afterwards, of whom

fully 90% died. Naturally other variables did influence the outcome, for instance very severe head injuries might not survive even if treated swiftly. Very interesting results developed as to whether or not treated patients recovered fully afterwards: virtually all patients who recovered eventually achieved a complete functional recovery, and swift treatment did not materially increase the number of patients who survived with severe permanent brain damage.

Seelig et al report of this study that it deserves close attention by all doctors who are involved in the treatment of head injuries, particularly those working in Casualty Wards and rescue squads. For cryonics its importance comes from the fact that it may help to reduce the rate of sudden deaths, and therefore the ability of our cryonics societies to suspend us in good conditions.

GLIAL CELLS AND MEMORY

Some quite significant work on memory has recently been coming from the Soviet Union. AB Poletaev, VV Dergachev, et al have published over the past several years a number of quite interesting papers on the role of the glial cells in memory. They have good evidence that glial cells are involved in memory processing. Using immunological techniques (antibodies against neurons, against glial cells, or against both) they have shown that both glial cells and neurons are involved in short-term memory processes, and that injuries to the glial cells will cause injury to the processes by which new memory is consolidated into longterm storage (Byull Eksp. Biol Med 83(2) (1977) 156; Zh. Vyssh. Nerv. Deyat. 28(6) (1978) 1311).

In a recent paper these two authors carry these investigations forward still more, by working out new information about the role of glial cells in recalling information which has already been consolidated into longterm memory. They follow the same methods as in their previous experiments: they used prepared antibodies against glial cells to injure these selectively, and then studied the effects on memory in their experimental animals. In this paper, they report that although glial cells seem to be critical to reading a memory into longterm store in the first place, injury to the glial cells does not impair the ability of the experimental animals to remember tasks which they had learned previous to the injury. They taught female Wistar rats to respond differently to a buzzer and a bell, then afterward injured their glial cells by injecting them with immunoglobins against glial cells. Animals treated in this way would show an initial decline in performance afterwards, but they would recover from it. On the other hand immunoglobins against neurons would produce a permanent loss of memory ability.

As I have mentioned before, understanding of how our memory is stored will allow us to answer the critical question of what treatments will preserve the information which is contained in that memory. At present for cryonics we have only indirect evidence that memory will survive; study of this evidence convinces me that it is still quite good evidence, but still remains indirect. Furthermore, a full knowledge of how memories are stored will probably allow us to state quite specifically those occasions in which these memories have been destroyed, and to find ways to optimally preserve them, even if the neurons so preserved lose all ability to function: by no means trivial accomplishments! This work of Dergachev and Poletaev adds some quite significant information to the growing picture of memory processes and how they work.

SOME SUGGESTIONS FOR FUTURE GROWTH OF CRYONICS by Thomas Donaldson

Readers of CRYONICS may remember my recent article in which I argued that we really didn't need a large number of cryonicists in order for our personal prospects of suspension, storage, and ultimate revival to have a very large chance of success. It has seemed to me for a long time that serious thinking about what sorts of policies the cryonics societies should follow to help OUR personal survival has suffered from excessive preoccupation with what the majority of people or the majority of scientists will do or think in response to our activities. Some cryonicists make constant attempts to try to curry favor from the "opinion leaders" in society, become excessively excited when some of these opinion leaders actually show some signs of less than total hostility to cryonics ("Merv Griffin did a show on cryonics! Wow!") and produce arguments for cryonics which carry with them a distinct tone of pleading and begging for favor. ("If only you, august and exalted cryobiologist, will deign to favor us with your attention, we will promise you immortality forever after..."). It may well be that some day 100,000 people will hold Suspension Memberships; appeals to eminent citizens or scientists, however, are more likely to show us up as silly and unrealistic than anything else.

You may agree with these comments and at the same time feel that I have left unsaid any ideas for what we really SHOULD be doing. This article will produce some suggestions for policy changes by the cryonics societies based upon my own perception of what our real, as distinct from our imaginary, problems are. Before I begin my suggestions, though, I want you to understand very clearly how I mean them to be judged. Too many cryonicists seem to demand that a new policy produce sudden mass conversions to cryonics. They say that unless our policy can convert the Pope to cryonics by December it just isn't worth doing. No policy will convert the Pope. I will be more than satisfied, in fact I will be overjoyed, if the policy changes I suggest increase our total of cryonicists by 5 people, net, per year. I would like them judged on that basis; to refuse to take small gains because to refuse to make small changes because they won't convert the Roman Catholic Church is folly and a recipe for exactly that failure which the proponents of the necessity of numbers hawk about so constantly.

So here are some suggestions:

1. WAIVE ALL ENTRY FEES FOR SUSPENSION MEMBERS WHO JOIN BEFORE AGE 26. One of the most important things we should be doing is maintaining a constant inflow of new members, not people who will die soon thereafter, but people who will stay with the cryonics societies and whose yearly dues will be a source of financial strength for years to come. It should be very much to someone's advantage to join a cryonics society LONG before they expect to die. We need people who will be members for a long time and we should expect to provide some corresponding concessions to these members.

If it is not possible to sign up people below age 26 for no fees at all (because of clerical expenses, for instance), then we should still be able to sign them up at a discounted rate. For instance, we might be able to discount their Entry Fee down as low as \$350. However I would like to point out that even on financial grounds it may make sense to let in people below age 26 for free: the point to remember is that they will be paying 10 Annual Dues for all the time after their admission to membership. If we suppose that someone who joins at age 26 would otherwise delay their membership by 10 years then, effectively, we will receive MORE than \$1000 from their Annual Dues PLUS the interest accrued on them because we received them earlier than a 10-year delayed Entry Fee.

All cryonicists will know of the counterarguments, too, which are that having Annual Dues depend on age at Entry would fall afoul of the California Commissioner of Insurance. However a good deal more may be said on this point. According to California law, in order for an insurance contract to be in force, there must be a) a risk existing, and b) a shifting of this risk. Whether a risk exists involves such things as whether or not someone has an insurable interest and whether or not that thing insured exists in the first place (yes, people have tried to insure nonexistent boats!). Whether the risk has been shifted actually seems to be a complicated matter of case law: it is relevant whether or not money is paid out by the "insurer" or perhaps the insurer provides services, and do these services have a monetary limit on them or not?

In this context, we can make some comments. In the first place, it is certainly legal for a society to set its dues at different rates for different ages ("youth memberships", for instance, are common). The dues confer on the Suspension Member the right to be suspended at short notice; anyone who fails to pay these dues lacks that right. Lacking that right, no one can insure for its loss, since it is nonexistent. It would therefore seem that if Trans Time dealt exclusively with Suspension Members of a cryonics society, then these cryonics societies would easily be able to set their Annual Dues to reflect probability of death.

A problem arises in that Trans Time would probably wish to be able to continue suspending patients who arrive already dead, with no membership in a cryonics society, and in doing that would like to assess an Emergency Responsibility Fee. However it seems from my reading of the law that even this should be possible: the key point to remember is that **LEGALLY DEAD PEOPLE CANNOT JOIN SOCIETIES OR SIGN CONTRACTS**. Any fees for Emergency Responsibility payable to Trans Time would have to be paid by the relatives of the deceased; the deceased is under no financial risk, nor is his/her life at risk because at the time, they are already dead. It is particularly useful here to point out that the courts have decided that we cannot insure **CONDITIONAL EVENTS**. For instance, if I have a right to receive an Estate but only if someone predeceases me, I cannot insure my right to that Estate. (The idea here is that my right does not exist, it is conditional only). Construction of this case for cryonics would be: I cannot insure my right to be suspended IF my relative chooses to suspend me (which is what would have to happen if I am not a Suspension Member of a cryonics society).

These comments are not intended as a full legal commentary, but only to suggest that there is much hope in the possibility that we could, in fact, set our dues on the basis of probability of death, **WITHOUT** fear from the insurance commissioner. I am investigating this question intensively and expect to write a much more detailed article on the point in future.

Please don't imagine that I foresee vast increases in our rate of acquisition of new members if these policies were implemented. I intend for them to produce an increase, which might seem important only in ratio to our actual existing membership, which is small. I would like to see, in CRYONICS or elsewhere, criticism of these proposals and perhaps other proposals too, which might move the discussion of what we must do to a more realistic plane. If a suggestion can produce an increase in the rate of acquisition of only one member per year it will mean a lot for us. In particular, we most need proposals which we **CAN** implement with our present numbers and budget. It is easy to imagine how to do vast things with vast numbers and money. It is also completely beside the point.

Given the poor response to one of the Group Membership plans, in terms of people who failed to complete their Suspension arrangements, I believe that it would be good policy to require that all arrangements be explicitly completed by age 26, not merely that someone has signed a form saying that they wished to join. Furthermore, in case of falsification of age, the cryonics society should be able to require payment of the Entry Fee together with all accumulated interest. Finally it might also make sense to institute a rule for members who become in arrears and are dropped from membership: if they gained entry at age less than 26, then they may reinstate their membership by either paying the normal Entry Fee or else by paying all their back membership dues WITH ACCUMULATED INTEREST, whichever they choose.

Finally a word about how Family Memberships would fit into this scheme. What it would mean, of course, is that parents could sign up their children for no Entry Fee at all. This may help further to get us younger members.

I feel it is particularly noteworthy that many cryonics activists, as distinct from people who have simply joined and are members, actually commenced their cryonics activities below age 26. In some cases, activists began working for cryonics while still in their teens! I believe it would be very beneficial to us to get such people as members, and a waiver of Entry Fees might help to do so.

2. RAISE THE ENTRY FEES AFTER AGE 36 BY \$500, AND PAY \$1000 COMMISSION FOR NEW MEMBERS. The motivation for this increase may seem odd until we look at some of the figures on membership. The point is that it is apparently quite rare for people to join at ages greater than about 40 (I cite Helen Rievman's study of cryonicists here). We would therefore expect that the proposed increase would not cause a reduction in the inflow of members; furthermore, for those who are older than 36, a \$500 increase is not orders of magnitude above that which they would otherwise pay.

Why do I suggest that the whole of this \$500 should go into Commissions? Well, the fact is in the first place, we all know how rare it is for someone to join. We must expect that there will be a corresponding cost of searching for cryonicists who might join: we cannot expect to discover any rare objects without paying for that rarity. Cryonicists above age 36 are correspondingly more rare; we should expect to have to pay salesmen more for finding one.

There may, in fact, be justification for increasing the normal Entry Fee. Certainly the Cryonics Institute, which has the highest Entry Fees, has survived quite well with the higher rates, and it's been quite unclear to me for a long time that our normal \$1000 Entry Fee really pays the cost of locating a Suspension Member. In my own experience, I would expect to pay \$25 in advertising costs just to receive ONE LETTER OF ENQUIRY. The cost of a Suspension Member comes much higher than that. It has been suggested that we can rely on news spots in the media. While I too favor maximum use of such publicity, we rarely can control it perfectly, in particular we can rarely insert our name, address, and telephone number into any such news item, particularly if we want to do so clearly so that a listener needn't react instantly in order to acquire it. We know that the cost of acquiring new Suspension Members is likely to be high. We simply must pay this cost.

3. ANNUAL DUES SHOULD REFLECT PROBABILITY OF DEATH. As an abstract point I believe few people would argue with this idea. Dues as they now are set involve a subsidy from the young and healthy to the old members who may die soon; we may quite possibly have to raise these annual dues still more if Trans Time fails to if fewer people than heretofore come forward as deathbed cases wanting to be frozen. Everyone knows that the suspension of such patients was a major source of revenue for Trans Tiome, and it was because of them that Emergency Responsibility Charges were kept low.

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