Cryonics

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Understanding Standby

And How It Can Benefit You

Feature Articles

Columns

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Cryonics

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Issue to press: December 11, 1991.

Cover:
Fred and Linda Chamberlain discuss the complexities of Standby in this month's cover story.

Cryonics Online

Over the past few months we've seen cryonics receive more and more attention on various electronic mail networks. This has led to increased circulation of the basic idea and lots of information requests, so of course we're pleased to see it continue.

The "official" cryonics net is moderated by Kevin Q. Brown. You can reach it on Internet at kqb@whscad1.att.com. Compuserve access is simply >INTERNET:kqb@whscad1.att.com. From UUCP, it's... att!whscad1!kqb.

Anyone who has access to GEnie and wants to participate in cryonics related postings should type M 470;1 to move to the science-fiction roundtable, then select 29 ("The Science in Science Fiction") and topic 27 ("Cryonics").

The Extropian mail list also has frequent references to cryonics and other transhumanist memes, and can be reached via Extropians@gnu.ai.mit.edu.

Our most email-active member (or close to it) lives in England presently, and is playing a large part in strengthening our Alcor U.K. presence. For information about U.K. meetings, training sessions, and European membership in general, contact Russell Whitaker at 71750.2413@Compuserve.com.

People with questions or comments specifically intended for Alcor or Alcor personnel, including questions about membership or items appearing in *Cryonics*, should direct their inquiries to alcor@cup.portal.com.

Where Credit is Due...

Last month's table of contents incorrectly listed Paul Wakfer as the author of "Life Insurance Simplified." The article was in fact written by Mary Naples and Bob Gilmore, who have written more policies for Alcor members (and cryonicists in general) than any other life insurance agents. (Their number and address appears in the back of each issue.)

Fortunately, the contents-page error didn't carry over to the article itself, but our apologies, nonetheless.

[Actually, the real responsibility for this bungle rests with us — your humble Production Editors. And we really *apologize!]*

Drawing from the Membership

Both in our magazine and in our literature we often find occasion to wish we had an Alcor illustrator. Unfortunately, not one of us here could sketch his way out of a wet paper bag, and we certainly can't afford professional assistance.

Do your doodles attract attention? We don't need some un-sung Leonardo whipping out Last Suppers in his spare time, or rendering human cerebrovasculatures in the margin of his desk organizer. Just someone with a knack for sketching. If you think you might fit the bill, please contact Ralph Whelan at Alcor.

Cut Your Stroke Risk

Stroke is a disaster for cryonicists since it irreversibly destroys a part (and sometimes all) of the organ of identity, of who we are. A recent 5-year study involving 4800 mildly hypertensive men and women 60 or older published in the 26 June issue of the Journal of the American Medical Association (JAMA) has good news to report in reducing the risk of stroke and heart attack.

By simply treating the patient's hypertension with a diuretic the investigators were able to achieve 36% reduction in the incidence of stroke and a 27% reduction in the incidence of heart attack. What's interesting about these findings is that the investigators were treating isolated systolic hypertension (elevation of the top number of a person's blood pressure). In the past this was often called "*benign* systolic hypertension." As this study shows, there's nothing benign about it! So, if your systolic blood pressure is over 130 and especially if your diastolic is 90 or above — get treatment. A mind is a terrible thing to lose!

Membership Status

Alcor has 290 Suspension Members, 472 Associate Members (includes 173 people in the process of becoming Suspension Members), and 19 members in suspension.

Letters to the Editor

Sirs,

I understand that the international cryonics movement is in its genesis, and I am among the newest of members. However, even though I lack some of the understanding which would come through experience, I find myself appalled that obvious problems which threaten the future of cryonics have been completely ignored. It is imperative that these issues be immediately addressed.

What I am talking about is the complete lack of suspension and reanimation greeting cards. After several trips to a number of card shops, I find myself astounded that *not one* store has even a single edition of a card which would be applicable for either event.

Why is this the case? Is there no lobby group? No pressure being asserted by those in charge? And what about the grass roots? Have they not even considered this issue? It makes me wonder how everyone involved in the cryonics movement can face themselves knowing that if one of their friends "goes down" a "Good Luck In Your New Location" card would have to suffice for an appropriate greeting.

Taking charge myself, I complained directly to E. Morton Hoffenager, President of Hallmark International. Although he was not rude, his response left me very pessimistic that this most serious issue would be quickly resolved. He wrote:

"...and considering that less than 300 of the world's population have registered for cryonic suspension, we in the greeting card industry feel that this market can be safely ignored."

Another issue which has gone completely overlooked is that of calculating a reanimated person's age. Should they just begin counting where they left off: 69, 70, 71... or, should they have the letters AR (After Reanimation) affixed to their age? (E.g., 63 AR)

What happens if nanotechnology gives them a new body (NB) with a physical age of 22? Should they be aged at 63AR-NB22? How will these people be able to fill out their age on forms which at best leave only three spaces for age?

And what about standards? Currently, some people assign dates as month/day/year. Others use day/month/year. It is confusing. Are those of us in North America just supposed to know that when we are 55AR-NB31 our European counterparts of NBCAR55(31) are the same physical age? And what is a 2-1 pitch, anyway?

As well, what are you doing to inform parents of the dangers of reanimation? If someone who has been suspended for two hundred years aged 77AR-NB18 shows up with a van to take out your seventeen-year-old daughter, should you as a parent be concerned? I think so. In fact, I think that it is reprehensible that no one in the cryonics movement has taken time out of their day to author a brochure entitled *Reanimation: Making Parents Aware.*

However, I trust that my comments will bring these issues to light and will provide for open discussions which will hopefully lead to solutions. The cryonics movement has gone astray, but the people involved in this movement are good, and good people always prevail.

Thank you,
Guy Desrosiers

We are of course grateful to Mr. Desrosiers for bringing these serious deficiencies to the forefront. While specific measures to address these critical issues will take time to formulate, Mr. Desrosiers and all concerned should be aware that we are now accepting applications for seats on our new ethics council: The Committee for Rapid Undoing of Shortsighted Transhumanists (CRUST). — Ed.

Dear Editor:

I wish to comment on Alcor's new pamphlet, *Cryonics and Christianity*. While the intention of the pamphlet is well-meaning, I see a problem in its attempt to draw a parallel between cryonics and biblical stories of resuscitation.

Assuming that these alleged miracles are possibly garbled accounts of real events, it is evident that everyone healed or resuscitated through an application of God's power has eventually grown old and died like his or her contemporaries. (Otherwise there would be some *very old* people alive in the world today!) Yet we openly write and talk about being resuscitated from cryonic suspension, *rejuvenated*, and then proceeding to live for a cosmologically significant length of time. (One frequently hears the phrase "billions of years" in cryonicists' conversations.)

A thoughtful Christian could put these facts together to infer an invidious comparison between the relative efficacies of God's power and foreseeable technologies. Implying that cryonics and nanotechnology will work *far better* than miracles is the wrong way to try to conciliate the Christian community. I suggest that you re-evaluate your argument for future editions of the pamphlet.

Aeonically yours,
Mark Potts

Dear Editors,

I was deeply disappointed in Alcor's publishing of a pamphlet entitled *Cryonics and Christianity*, which I have just finished reading.

Christianity, backed by the power of the State, has been *the* primary man-made barrier to scientific progress over the past two millenia, and has been the cause of countless suffering, torture, and murder. These facts cannot be explained away as some "theory versus practice" distinction, nor as a misinterpretation of the New Testament. No, Christianity has caused so much damage precisely because of its adherence to irrational beliefs and untestable ideas. The degree to which we have abandoned these ideas and beliefs is the degree to which we have achieved real progress.

The fact that you can find some vague support for cryonics in the Bible doesn't mean a thing. There's enough in the Bible to support just about anything, including two completely contradictory ideas. The fact that some preachers support cryonics means even less. Why should I, or any other cryonicist, care about the opinions of a person coming from a tradition that proclaimed reason to be the enemy and that destroyed the spirit of Galileo? (It was only a few years ago that the Church admitted that he may have been right after all. Do we laugh or do we cry?)

I suspect that *Cryonics and Christianity* is merely an attempt to get Christians to join Alcor, and to assuage the consciences of members who consider themselves Christian. Since these people have been offered Alcor's "official" position, I'd like to give them mine: Christianity succeeded largely because of the seeming inevitability of disease and death;

it offered the sick and bereaved a means of coping with their lives, but no way to change anything. Science, having succeeded despite the antagonism of prominent Christians, has made great inroads against disease, and may now be on the verge of conquering death itself. So although Christianity (and Judaism, and any other religion) may still offer some enhancement of spiritual and communal life, as a general belief system, it is no more compatible with cryonics than is any other irrational way of thinking.

Unreligiously yours,
Simon D. Levy

Editorial Note:

Mr. Levy makes reference to Alcor's "official" position on religion. Alcor does not have an official position on religion any more than it has an official position on lawn bowling, except in that we do not discriminate against any person on the basis of religion, or advocacy of same. Neither does Alcor have any official opinion *about religion, Alcor being a corporate entity lacking the sort of neural architecture probably necessary for that sort of thing.*

On a personal note, I do *have an opinion about religion, which I won't go into since Simon, I believe, has already treated the subject well, (most specifically with his assessment of the role of religion in stultifying scientific — and most other — progress).*

However, I'd like Simon and any others who share our viewpoint to consider one thing: It is not a foregone conclusion that a person is without value because s/he embraces notions that may seem without value (or worse) to you and me. This brochure does not seem likely to undercut scientific progress in cryonics. Possibly we can temper our philosophical treatment of the brochure through the hope that some worthwhile people will discover it, and thereby discover Alcor and some Alcor members with ideas and opinions that never saw much discussion in church...

Dear *Cryonics*,

At the age of eight or nine, I remember distinctly and unexpectedly realizing the imminence of my own death. For weeks at a time, I would pray nightly that God would not let (make) me die, that he must once allow someone — me — to live forever.

Eventually, this passionate fear of death left me, due in large part to my acceptance of God, Christ, Heaven, and Hell. That's how I dealt with the "fact" that there was no chance of me living *in corpus* eternally. It worked. My anxiety was gone, along with my bitterness.

Ultimately, every man must deal with the imminence of his own death. As testimony to this, witness the hundreds (thousands?) of religions and philosophies that fill the world. Since the advent of man's self- awareness, and hence his "death-awareness," he has had to compensate intellectually and emotionally for the contradiction between his body's wants and desires — to live! — and the facts of nature — that he shall die. Because man *is* a survivor, the ultimate survivor, he did compensate, and still is compensating. With the arrival of cryonics, the *need* for this compensation seems to have disappeared. Surprisingly, the compensation itself has not. (Only 271 people are signed up for cryonics, out of 5 billion!) Why?

It just may be that accepting death, formerly man's only means of retaining his sanity, and thus surviving, was/is such a large hurdle that for most it cannot be re-crossed. Probably all of us have friends or relatives that we've lost or will eventually lose, despite the availability of cryonic suspension. I have no advice to give in this regard; I can only offer the consolation that this technology *does* exist for those with the courage and wherewithal to take advantage of. This has not always been the case, and I'm deeply grateful to the staff and volunteers of Alcor for helping us make a chance for ourselves.

To never-ending, ever-expanding life,
Derek Ryan

Editor:

Those readers who are interested in obtaining the full text of "The Jameson Satellite" by Neil R. Jones (see "Riding the Jameson Satellite" by Michael Perry in *Cryonics*, Nov. 1991) may find it hard to track down a 1931 issue of *Amazing Stories*. However, in 1967 Ace Books reprinted this story and several later adventures of the immortal Professor Jameson in a paperback entitled *The Planet of the Double Sun* (Ace Books F-420) for the good-old-days price of 40 cents.

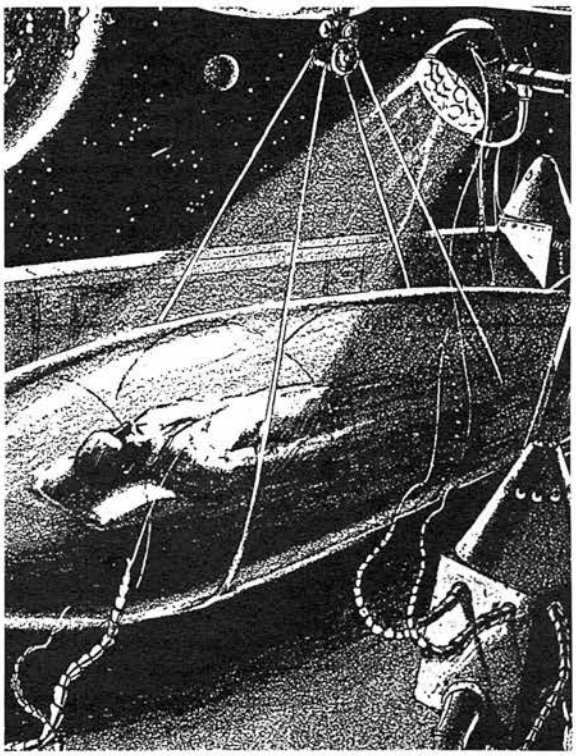
I'm sure this is long out of print and still won't be easy to find; but maybe our readers who attend science fiction conventions or haunt dusty used-book stores can watch for it. Like other Ace books of the time, the paper has a high acid content, so many copies have already been lost. Since the book appears to be the first "cryonics" story, I hope that we can save a few copies. Perhaps someone can enter the text of at least the first story onto a computer disk so it will be available to future students of cryonics history.

The cover of *The Planet of the Double Sun* indicates that this is "Professor Jameson Space Adventure #1." Ace Books subsequently published four other Neil R. Jones books which collected the complete Professor Jameson stories. The other titles:

#2: *The Sunless World* (1967, Ace G-631)
#3: *Space War* (1967, Ace G-650)
#4: *Twin Worlds* (1967, Ace G-681)
#5: *Doomsday on Ajiat* (1968, Ace G-719)

I have recently purchased a full set of these books and, after I have examined them a bit more, I will donate them to Alcor's library.

Steve Bridge
Indianapolis, Ind.



The Jameson satellite

You CAN Take It With You!

Tanya Jones

On December 12, 1991 the first shipment of Alcor archival materials was placed into the care of *Underground Vaults and Storage, Inc* (UVSI). A leading security archiver of records and microfiche, this firm has been in existence for over thirty years and has an impressive client list, which includes most of the Fortune 500 companies and now Alcor. Their primary facilities are located in Hutchinson, Kansas and consist of underground vaults of 15,000 square feet, 650 feet below the surface.

Due to increases in the transaction charges of UVSI, the rates previously published in the June, 1990 issue of *Cryonics* will no longer apply. The new rates for the archiving of documents and similar items are as follows:

Transaction Charge: $50 per cubic foot

Perpetual Storage: $200 per cubic foot

Included in the transaction charge are the cost of one acid-free, standard size box; the preparation of shipment-related documents; all charges of UVSI; shipment from the Alcor facility to the Kansas storage facility; and the first year's storage expenses.

Transaction charges are imposed for receiving or withdrawing new material and starting or terminating the service.

Future access to archived materials must be accomplished through Alcor and may consist of the following services: photocopying of documents, hard copies of microfiche, duplication of magnetic materials, return of materials to Alcor, or the destruction of specified items. Currently, Carlos Mondragón, Ralph Whelan, and Tanya Jones have visitation access as well. Upon prior notification, they may personally enter the USVI vaults and collect or examine any stored materials. Emergency access is also availible 24 hours a day, 365 days a year, and UVSI assesses transaction charges accordingly.

Recommended is the use of acid-free boxes for material storage. Alcor has obtained a number of these boxes from UVSI and has made them available to members included in the above rates under the following condition: preparation of the materials for storage must be done by the member. Preparation must include a *complete* typewritten inventory and description of the material being archived. Complete instructions will be provided to those desiring to take advantage of this service.

Boxes provided by UVSI are slightly over one cubic foot, which is the fee standard, being 12"w x 15"l x 10"h, but are considered by the company to be one cubic foot for billing purposes. Any articles sent to Alcor for archival storage should conform to these dimensions.

Storage of non-document size items which will not fit into the standard box, may be possible and will be considered on a case-by-case basis. If you have any questions or wish to begin archival storage of your personal memorabilia, please contact Tanya Jones at Alcor for further information.

Tax Planning & Charitable Giving

Mike Midlam

Over the past decade, Congress has legislated away many tax reduction programs such as limited partnerships in real estate, gas and oil, and deductible IRA accounts. One area has survived Congressional scrutiny relatively unscathed: Charitable Giving. In particular the *Charitable Remainder Trust* (CRT).

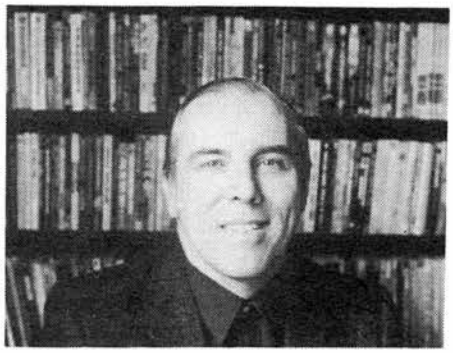
The CRT concept is very simple: An individual makes a gift of a highly appreciated asset (real estate or stocks) to a Charitable Remainder Trust. The ultimate beneficiary of the trust is a charity or other qualified organization. The CRT can sell the appreciated asset without owing any income tax on the capital gain. By reinvesting the proceeds, the CRT can pay the donor (and their spouse, if desired) a fixed percentage of the trust's assets for the remainder of their lives. The fact that a gift has taken place creates a charitable deduction. The amount of the deduction is based on the donor's age at the time of the transfer, current interest rates, the original basis in the asset, and the percentage cash return they will receive each year.

The result is a substantial increase in after-tax income for the donor. This is accomplished because the return is based on the fully appreciated *current* value of the asset, which has not been diminished by capital gains taxes. Further, this income may be completely sheltered from ordinary income tax for a period of years because the tax deduction created by the gift offsets the current income. At the death of both donor and spouse, the asset passes to the charitable beneficiary of the trust.

For persons who wish to accomplish all of the above and still leave a comparable value to their heirs, the donated assets can be replaced with life insurance. Unlike the original asset, life insurance proceeds would pass free of estate taxes to the heirs. The result can be a true Win, Win, Win scenario for all involved.

Mike Midlam is a Certified Financial Planner for the Independent Order of Foresters, and has extensive experience setting up Charitable Remainder Trusts. Contact Mike through Alcor.

They Haven't Got a Clue — The Government and High Tech



H. Keith Henson

In *Engines of Creation* Eric Drexler makes a strong case for controlling the development of nanotechnology so that really dangerous examples are not inadvertently released.

Most people who read this assume that a government or group of governments would be the agent to control nanotechnology, perhaps based on the assumption that the government is the most powerful human institution. On the basis of recent experience, I don't hold out much hope for the effectiveness of government control over nanotechnology.

There is little doubt that governments are powerful institutions. But they are no more intelligent than the people making the decisions. Those people are either elected representatives or bureaucrats. The effect is often like dealing with a brain-damaged elephant.

With the limited exceptions of educational institutions and the military, governments are just about lost trying to deal with advanced technology. I suppose if you think about it, this is not too surprising. After all, if you are attracted to cutting-edge technology, you are likely to be working on it rather than getting elected or becoming a government bureaucrat.

I am going to discuss a specific example of this: the federal government's crackdown on "hackers." The FDA and the DEA are good examples too, but the 1988 seizure of the Alcor BBS (bulletin board system) by the Riverside coroner during the search for Dora Kent, and our subsequent successful suit have given me a lot of knowledge about this topic. In fact, some of the research which was developed for the suit by 15 Alcor members over the illegal taking of email (electronic mail) without a warrant was used in the recently filed case of Steve Jackson Games (SJG) against the federal government.

To bring you up to date on the now settled Alcor/email case, back in 1988 the Riverside coroners took a computer used by a number of Alcor members for electronic mail. My use of the computer was typical. I would call the computer and send articles for *Cryonics* and notes to the editors about the articles. All the computers at Alcor were taken in the second of the searches, and not returned for some 11 months.

Because the applicable federal laws were relatively new (the Electronic Communication Privacy Act of 1986), and had never been used against a law-enforcement agency, it took a while to figure out that our rights under this law had been violated. We filed a suit under these laws just before the statute of limitations ran out. The Riverside County government was aghast. To quote one of Riverside's lawyers: "The case was filed in Federal Court. It should have been filed in the Twilight Zone."

However, the violation of the law was fairly clear: They did not have warrants to seize our electronic mail (or deny access to it) as the law requires, so after trying to get the case dismissed, they gave up and offered us $30,000 to settle. We took it. Though I would have preferred a clear court case, if the other side offers essentially all you would get at trial, there is not a lot of choice (because judges see no point in trying such a case). Because of other considerations, we skipped the chance to get a headline: "County pays off in Twilight Zone."

Can we expect bigger government to do better? Apparently not. The federal agents who conducted a similar search and seizure on Steve Jackson Games in March of 1990 were even more outrageous. They suspected that one of the employees of SJG was a member of an unorganized group of "hackers" known as the Legion of Doom, and that there might have been a stolen text document on one of the SJG computers. The document in question really *was* on thousands of other computers, as part of an electronic newsletter. As it later turned out, the document was publicly available, and the particular employee was never charged with anything. Still the agents seized three computers, two laser printers, a pocket calculator, and almost everything else they could get their hands on from SJG including all copies of a book which was about to go to the publisher.

Their conduct violated so many constitutional rights as to be one of the causes for the formation of a new organization, the Electronic Frontier Foundation specifically chartered to monitor and counter law enforcement abuses involving computers. Steve (an Alcor Member) got his picture in an article on the EFF in the September issue of *Scientific American.*

The background of the Steve Jackson Games case is too long to detail here, but there are two points which show how lost agents can be in trying to deal with advanced technology. The first is a point one agent made in the application for a search warrant. On a BBS system they were monitoring, someone asked what was Kermit? (It is a widely-available, error-checking communication protocol.) When someone else gave a two-line explanation, the agents took this as evidence that the person responding with this esoteric knowledge was a member of a conspiracy to break into computers.

The other spectacular item was the response of the agents looking at the draft of the new game SJG was about to release when they were raided. The game was based on a genre of science fiction stories set in the future and called (after that genre) GURPS Cyberpunk (where GURPS is the acronym for Generic Universal Role Playing System.)

A few minutes of looking at the near-

ly finished draft of the game book would have been enough for almost anyone who knows either computer systems or science fiction to have classified it as about as dangerous as ducks. One of the "tokens" a player needed to acquire in the game was an optical fiber brain implant, which, as you might expect, is not currently a useful tool for breaking into computers.

But the Secret Service agents called the book the most dangerous manual on how to break into computers they had ever seen. (Well, perhaps to a person who tried to install an optical fiber brain implant in real life, but that was not what they meant.) In the process of holding up publication they almost put SJG out of business.

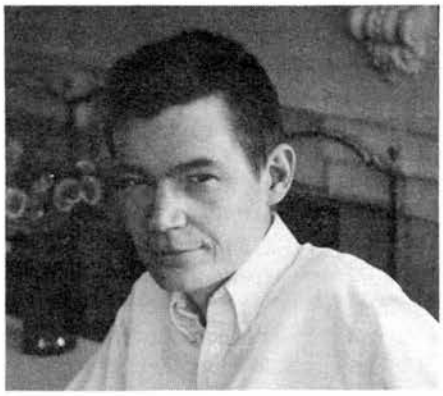
It turned out that other laws were violated in the SJG seizure. There are quite stringent penalties associated with using a search warrant to go through an office being used for production of material destined for publication. Alcor could still sue the county over these provisions (USC 42, Section 2000aa).

The ability to distinguish fantasy from reality is rather basic to making intelligent decisions. As you can see, legal authority and this skill do not always go hand in hand.

Can we hope to do better when nanotechnology is on the verge of becoming reality? When partial solutions to the breakthrough are being exchanged in encrypted messages across international borders on electronic nets? Not a chance. The only hope is that good will goes along with the formidable intellectual abilities which will be required to make the breakthrough.

For The Record

Lucretius: Immortalist Glimmerings from an Ancient Skeptic



Michael Perry

The cryonics movement that started in the 1960s did not begin in a vacuum, but was instead an outgrowth of a long tradition of thinking about immortality and life extension that took many forms in different civilizations and cultures over many centuries. Much of this tradition did not contribute to the concrete proposal for action that finally emerged: to freeze the newly deceased and wait for superior technology of the future that would possibly reanimate them. Indeed much of the thinking on immortality, emphasizing supernatural agents who would rescue mankind from death as a reward for certain favorable conduct, probably greatly retarded more scientific efforts to address the problem of death. In contrast to this, however, is the materialist-scientific tradition itself, which, while far less hopeful overall on the great problem, nevertheless empowered the modern cryonics movement that proposes to solve it.

Although science was often overshadowed in the Medieval "ages of faith" and in earlier times, some of the ancients were strong proponents of a materialist outlook. Among these was the Roman poet and philosopher Lucretius, who lived from about 100 to 55 B.C. Lucretius was not an original philosopher but a follower of Epicurus, the great Greek thinker of the 4th century B.C. who taught that happiness in this world was the only goal worth seeking as an end in itself, and that it should be sought through reason and not by appeals to unseen beings. (The seeking of happiness in this way was soon misunderstood as simple hedonism, with which Epicurus is still mistakenly associated.)

Though he was prolific, like many ancients his writings mostly have been lost, and his doctrines are most fully recorded and propounded in the great Latin poem of Lucretius, *On the Nature of Things* (*De Rerum Natura*, also translated as *On Nature* and *The Nature of the Universe*). From the vantage point of the late 20th century it is difficult to fully appreciate the magnitude of this work, which is at once a scientific treatise, a philosophical discourse, and a literary masterpiece that required extending the Latin language to accommodate the subtleties of Greek thought. The time has long passed when a scientific milestone is couched in the form of a multi-tomed poem (which runs to some 200 pages in modern prose translation). However, the way this particular writing anticipates modern thinking is awe-inspiring. In particular, it advocates an atomic theory of matter (inherited from Epicurus' predecessors Leucippus and Democritus) that predates our own by more than 2,000 years. (Ours is much more sophisticated, to be sure, and has the great advantage of experimental verification, but as recently as the early 20th century it was considered possible, with minor modifications, to reconcile Lucretius' teaching with modern science.[1]) In addition it advocates an attitude about reality: that the world is what it is perceived to be, that the world has great beauty, and there is much worth living for, but that, in Epicurean fashion, happiness is to be sought through reason, and not in superstitious beliefs and practices.

For all its virtues the great writing of Lucretius would not entirely please a modern cryonicist. To argue the position that happiness is attainable through reason, certain concessions were necessary. Since life, in Lucretius' day, was finite in a way no amount of reason-based action could remedy, it was necessary to argue that life was not so important, that the joys of life,

however great, were also finite and inherently limited, that excessively long life would be boring and superfluous. (On the other hand, the fear of death was combated by the credible argument that there is no discomfort in a state of oblivion.) In fact a fair amount of the writing is concerned with the problem of death, and more specifically, with demolishing any hope of survival after death. Despite this overriding intention, there are some striking observations that support the basic outlook of cryonics: for example, a lengthy and witty debunking of the vitalist position that the body (human or animal) is merely housing for an immortal soul or spirit that can enter and escape intact. Here is an extract:

Again, it is surely ludicrous to suppose that spirits are standing by at the mating and birth of animals — a numberless number of immortals on the look-out for mortal frames, jostling and squabbling to get in first and establish themselves most firmly. Or is there perhaps an established compact that first come shall be first served, without any trial of strength between spirit and spirit?

A tree cannot exist high in air, or clouds in the depths of the sea, as fish cannot live in the fields, or blood flow in wood or sap in stones. There is a determined and allotted place for the growth and presence of everything. So mind cannot arise alone without body or apart from sinews and blood. If it could do this, then surely it could much more readily function in head or shoulders or the tips of the heels and be born in any other part, so long as it was held in the same container, that is to say in the same man. Since, however, even in the human body we see a determined and allotted place set aside for the growth and presence of spirit and mind, we have even stronger grounds for denying that they could survive or come to birth outside the body altogether. You must admit, therefore, that when the body has perished there is an end also of the spirit diffused through it... [2]

However, in a remarkable following passage Lucretius raises the possibility of recreating a lost individual, Fyodorov-fashion, by repositioning atoms:

Or even if the matter that composes us should be reassembled by time after our death and brought back into its present state — if the light of life were given to us anew — even that contingency would still be no concern of ours once the chain of our identity had been snapped. We who are now are not concerned with ourselves in any previous existence: the sufferings of those selves do not touch us. When you look at the immeasurable extent of time gone by and the multiform movements of matter, you will readily credit that these same atoms that compose us now must many a time before have entered into the self- same combinations as now. But our mind cannot recall this..." [3]

Apparently Lucretius did not consider the possibility of restoring an individual *with* memories of a past life intact. Yet this is just what we hope to accomplish through cryonics, and it will happen if the atoms in the frozen tissue are not too misplaced.

So, the writings of Lucretius illustrate how even in ancient times there were some glimmerings of modern immortalist thought, whether they were recognized as such or not. For a true immortalist movement to flower, however, certain basic changes in attitude were necessary. Life must be viewed more optimistically, as something that *ought* to continue beyond the allotted biological span. Furthermore, it must be accepted that *progress* would occur, so that technology of the future must accomplish wonders beyond any previously seen, wonders powerful enough to affect even people of the present. The latter change would not follow until much additional progress had been made, but with the advent of cryogenic storage it has finally happened.

Our world is far removed from ancient Rome, yet despite all the progress only a relative few of us are serious about the possibilities for radically extending life scientifically. Most are still trapped, like poor Lucretius, in death-apologist thinking, or else continue to base their hopes on supernatural mechanisms. But the number of converts is growing rapidly, along with the technological milestones, and on the scale of history, an unheard of metamorphosis seems just about to occur.

COVER ILLUSTRATION FROM THE LATHAM TRANSLATION OF LUCRETIUS, BASED ON A ROMAN FRESCO

Sources:

Epicurus. Letters, principal doctrines, and Vatican sayings. Tr. Russel M. Geer. Macmillan, Library of Liberal Arts, 1964.

Gruman, Gerald J. A history of ideas about the prolongation of life. *Transactions of the American Philosophical Society* **56** no. 9 (Dec. 1966).

Lucretius. **The nature of the universe.** Tr. Ronald Latham. Penguin, 1951; reprinted 1965.

References:

1. Lucretius, op. cit. p. 9.
2. Ibid., pp. 119-120.
3. Ibid., pp. 121-122.

Criteria and Levels of Standby

Fred & Linda Chamberlain

Background

Since its inception, Alcor has carried out extraordinary rescues in which minimizing ischemic compromise played a large part. In every case, standbys and preparation for imminent suspensions were an essential factor. As a recent example, Arlene Fried (Linda's mother) received a very high viability suspension in June, 1990, with standby of over a week by Jerry Leaf, Mike Darwin, and Naomi Reynolds. Keith Henson and Arel Lucas arrived shortly before the suspension took place. Benjamin Hartwick, an Alcor Member who had helped with Arlene's care for months prior to her suspension, was a participant in the procedures.

More recently, Brian Wowk, almost single-handed, carried out an incredibly successful operation when his mother was suspended, but in general a much larger team is absolutely necessary. It is remotely possible that some extraordinarily skilled mountaineer might go to the top of Mount Everest on a solo basis, but that would not be an indication that others should attempt it. Brian was in a situation where help was just not available, and he showed what is possible, but most of us, even trained transport techs, might not have done nearly as well under such circumstances.

Financial Realities

The details of Arlene Fried's suspension were graphically documented in Linda's article, "Her Blue Eyes Will Sparkle," in the December 1990 issue of Cryonics (available as a reprint from Alcor), but this article did not explore the financial aspects.

The total expenses of transport far exceeded those provided for by suspension funding, and the standby was paid for on an entirely separate basis. Only after we finally received a detailed billing where syringes, medications, sterile supplies, etc. were "part of the tab," did we have a realistic appreciation of the extent of outlay one must anticipate in an extended standby prior to a high viability transport. The Alcor professionals in the standby (Jerry Leaf and Mike Darwin) were charged for at a rate far less than the registered nurses hired to be present for pronouncing death. Nonetheless, this alone amounted to quite a sum over a week and a half. Arlene had elected to follow a course of dehydration, which set something of an upper limit on the standby period, but if this had not been the case, the duration of the standby would have been comparatively indeterminate, and more costly.

Other factors also could have led to a larger bill. Linda, as a family member, was on hand months before to be sure that if needed, nothing would be left to chance (local funeral director, air ambulance, registered nurses and so on). Many of these expenses were paid directly rather than through Alcor. If Alcor had been required to handle these arrangements, compensation for labor involved on Alcor's part would necessarily have increased the total cost.

Requirement for Advance Funding of Standbys

As the membership paperwork indicates, Alcor requires that standbys be "pre-funded" (by deposits, credit mechanisms or pledges of assets beforehand). While this fact is thus known to members, and while Alcor cooperates on an individual basis where requests for standby arrangements are made, there have (up to this time) been no standardized standby services offered to the membership. It has been up to each individual to

recognize the need for standby and arrange for it.

The reasons for this are that the complexities of covering all possible contingencies almost defy the imagination, and provision for all realistic circumstances in detail, in a standard document, will be very difficult. Yet advance funding for standby is second only to basic funding for one's suspension, since a suspension without a standby is likely to be "low viability."

This is a very serious matter. Without prior arrangements for standby, there is no obligation for Alcor to provide one, and (in fact) Alcor would not be responsible to its obligations to its other members if it were to do so.

To fill the gap between what is needed and what presently exists, some form of standardized arrangement for standby is urgently needed, even if it is rudimentary in its initial version, leaving most of the decision making to Alcor. This article is an attempt to aid members in understanding the difficulties of covering every eventuality, and to aid them in coming up with statements of personal preference for inclusion in an initial contract for standby services.

Suppose Costs of Transport Exceed Those Allocated by Alcor?

An issue not touched upon, even in the present membership paperwork, is funding for "extraordinary costs of transport." Since transport is separate from standby (takes place after legal death), one would expect it to be accommodated by suspension funding, but this does not always work out. Alcor allocates $3,000.00 of suspension funding for those living in the U.S. (and a larger amount for those living overseas) for recovery and transport of the member after legal death. But if the actual costs exceed the allocation, Alcor must either charge the member's estate for the overage, constrain its operations not to exceed what has been allocated, or pay for the difference out of its general funds. This last alternative is not a real option, as one can readily see that Alcor's long term viability would be endangered by such a policy or practice.

In Arlene's case, we (as family members) provided much of the advance administration of the transport logistics, and paid for this directly, so that Alcor did not have to handle the details. Still, the $3,000.00 allocated by Alcor did not begin to cover the overall transport costs, and these had to be reimbursed later.

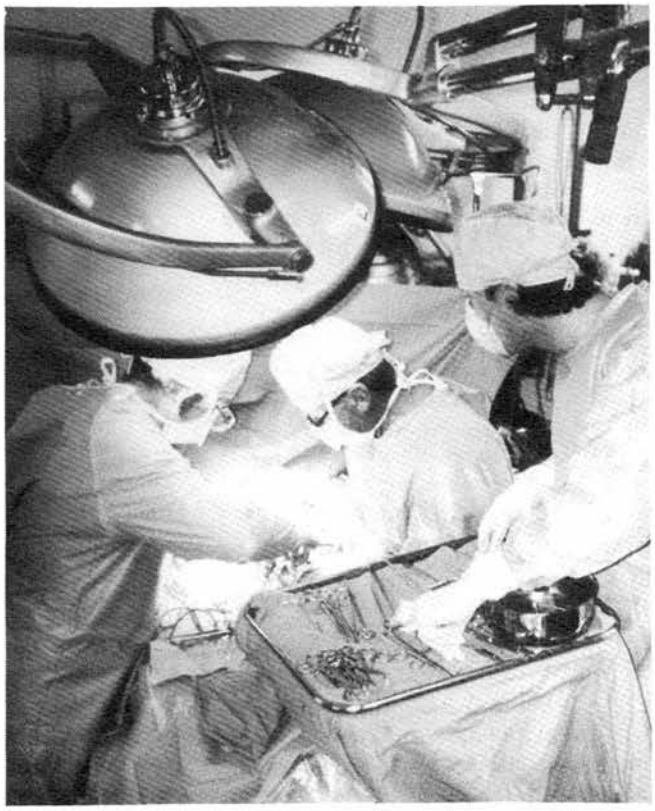
So now a new question must be answered. Should each member, in addition to funding for suspension and standby, provide funding for a third category, "extraordinary costs of transport"? This is an open item at the time this article is written, but it is a matter that urgently needs resolution.

Complexities of Standby

As indicated earlier, the complexities of standby situations make it difficult to fully anticipate all contingencies. Delays in offering "standardized" standby services have been the result. Before attempting an organized discussion of standby criteria and levels, here are three hypothetical cases which help illustrate the difficulties of arranging for standby:

(1) A member undergoes a dangerous heart bypass operation and a standby is appropriate (if the member wants and can afford it). Whether or not the member recovers, the costs of standby must be prepaid, separate from funding set aside for suspension. One might think that the costs of standing by for an operation would be easy to estimate, but suppose the member does not recover as expected, and goes from the recovery room into a critical care ward. Suppose, as a result of poor response, the member goes back into surgery a day later (while the standby continues)? Suppose the member is comatose during this period, and no one can be found to authorize additional standby expense on the member's behalf? Should Alcor just discontinue standby when funds authorized by the member are exhausted? How can it do anything else?

(2) Suppose a member requires emergency heart surgery, and has not specifically requested and authorized payment for standby in this particular circumstance? Can Alcor decide on its own that it will perform a standby and then charge the member for it? No! This must be foreseen and arranged for in advance. Only if a member has envisioned such a possibility and prepaid for it may Alcor field a standby team with firm expectation that the standby will be compensated.



Arlene Fried suspension

(3) Suppose an Alcor member has a terminal illness and a lengthy standby is anticipated. How will Alcor determine when to start the standby? Suppose the member "hangs in the balance" for weeks? If the member recovers rather than dies, perhaps there will then be additional crises, which further increase costs of standby. Must the member have anticipated every turn of events which might change the specification of standby, and have pre-funded all of these contingencies? If not, how can Alcor make reasonable decisions about expending manpower to conduct a standby, with the expectation that the member will find the charges for this acceptable? Is a member on the brink of death able to give "informed consent" to change the specification of authorized expenditures?

In general, then, we must ask how all the contingencies we can envision be can provided for in a member's arrangements for standby. And isn't it likely that even

then, we will have failed to cover all the possibilities? These are thorny questions, to which Alcor must devote more than a little time and energy. In the interim, to fill this gap, shouldn't there be a rudimentary arrangement offered which simply sets an upper limit on cost and authorizes Alcor to use its best judgement as to when standby should be undertaken and at what level?

We offer this article as an adjunct to such an arrangement, to help each suspension member come up with comments as to preferences which fit that member's circumstances and desires. In the detailed discussion later on, we will barely scratch the surface as to what criteria and levels might be appropriate, but one must start somewhere, and surely it is better to have taken a preliminary stab at these questions than to have procrastinated. All Alcor members are invited and urged to make conceptual contributions to the development and improvement of the standby program.

Is There a Requirement for Standby?

Because of uncertainties as to what length and level of standby might be required, and because standbys must be "paid for in advance" (and in addition to basic suspension funding), there can be no set requirement for members providing for standby.

But, and this cannot be pointed out too strongly, there must be a recognition by each suspension member that failure to provide for standby virtually guarantees Alcor cannot make a "high viability" rescue on behalf of that member.

Further, even if a member authorizes expenditures for standby and Alcor is given carte blanche freedom to use its judgment, there will be difficulties on Alcor's part in deciding when a standby team should be mobilized, and at what level.

It is appropriate for members to include statements in conjunction with their standby arrangements, particularly where the decision making is left entirely up to Alcor, indicating their preferences as to criteria and levels of standby. Some members may want (and be able to afford) a standby team for even minor surgery. Other members may be so strapped financially that they cannot justify funding a standby unless it is practically certain they will die in less than a day. How are members to express their preferences? In what terms may we attempt to categorize criteria and levels for standby? An exploration of these questions is the purpose of the remainder of this article.

Criteria for Standby

Criteria applicable to standby are limited only by the imagination, but following are a group of circumstances which illustrate the scope and intricacy. It must be emphasized that these criteria are hypothetical, not standardized criteria adopted by Alcor, and serve only as illustrations.

[A] A member is reported by reliable medical authority to be dead, but death has not yet been "pronounced." (This criterion is an extreme one, but it illustrates that, in principle, Alcor would be restrained from sending a team out until after death is formally "pronounced"!)

[B] A member is in the hospital, and reliable medical authorities report that the member may deanimate "at any moment." (You can imagine a conversation with an emergency room physician where this is exactly how he might put it. What would Alcor do? Without authorization to conduct a standby, it would be powerless to act until death is pronounced!)

[C] A member is under medical care, and attending physicians have expressed the opinion that chances are greater than 50% the member will deanimate within 24 hours. (This would probably be a verbal, "off the cuff" assessment, with a caution that the estimate is very likely to be wrong. Alcor's interpretation of such a criterion would be difficult enough, but without authorization to act, as in the earlier two examples, Alcor would not be able to send out a standby team at all.)

[D] A member's APACHE score is such that chances of recovery during a hospital stay are less than some certain percentage (APACHE is a medical evaluation system for assessing the probability that a patient will survive after admission to a critical care facility, based on clinical signs and symptoms, with age and type of medical problem taken into consideration.)

[From this point on, we'll let the basic description of each criterion stand, without additional comment. You'll be able to see, in each case, how other uncertainties could arise, no matter how definite or detailed might be the statement of the criterion.]

[E] A member has a terminal illness, as diagnosed by two physicians, and is predicted to die within a small number of days.

(Since no physician will make a prediction of this kind in terms of a specific number of days, Alcor must make the final decision as to when standby should be initiated. Since the chance of error is large, any member requesting standby based on this criterion would have to recognize that he or she might survive well beyond the number of days chosen, or that death might occur much sooner, and that in no such case could Alcor be faulted for failure to predict the number of days the member would live (since such prediction is well beyond the best present medical state of the art).

[F] A member is scheduled for major surgery, where the probability of survival

Remote standby, Arlene Fried suspension

is some percentage or less (as assessed by the surgeon who will perform surgery, based on previous statistics for that type surgery). Alcor would have to receive a phone call from the surgeon prior to initiating standby under this criterion, verifying the member's survival risk, and there would have to be sufficient advance notice for deploying personnel and equipment.

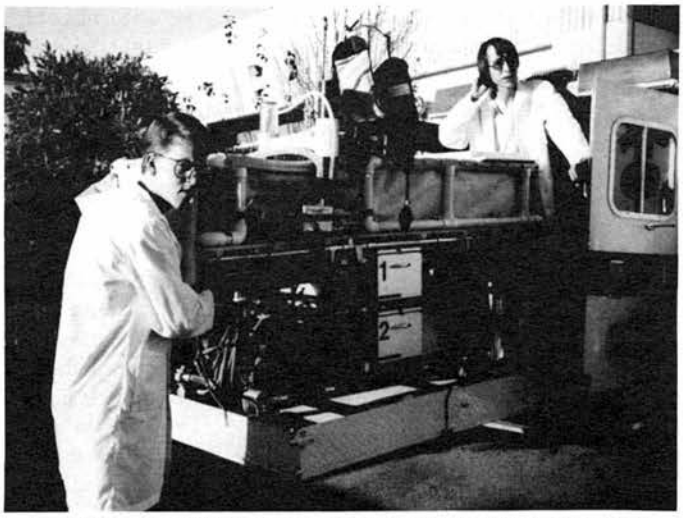
As with other decisions relating to standby, Alcor would have to weigh the actual survival risk given by the surgeon (if different from the limiting criterion specified by the member), in terms of commitments to other members who are either under standby or at risk of deanimation. In each case, Alcor would have to be the sole judge of whether or not standby was warranted, except that Alcor would be obligated not to perform standby unless the probability of survival meets some predetermined standard.

[G] A member might be, in that member's opinion, at risk of deanimation and request a standby. If after reviewing all medical facts, Alcor were to agree to provide standby as a service, it would have to be with the understanding that such a standby could not obligate Alcor to keep trained people tied up on a low risk standby if others were at high risk of dying and far more in need of standby. This sort of criterion would, in general, only apply to members with large, discretionary financial resources. It would be necessary for Alcor to define very clearly the circumstances under which standby would be withdrawn, so there could be no question of this being done in an arbitrary way where cause did not exist. This particular situation is included to illustrate how thorny the decision making could become, and how important it would be to define criteria clearly, so that standbys would not be called merely on the basis of whim or be discontinued without an adequate sort of justification.

Alcor as the Final Judge of Standby Criteria

In terms of the above situations, clearly, Alcor must weigh the allocation of limited numbers of trained people among the cases. There may be instances in which all standbys requested cannot be provided. Alcor cannot be obligated to provide standbys where other members are in more critical condition and in greater need of standby, or where performance of a standby would jeopardize Alcor's ability to respond to needs of other members who might deanimate.

Alcor must necessarily be the sole judge of when a standby is warranted, except that Alcor has an additional burden of taking members' financial limitations into account, not performing standbys where a member has made it clear that standbys can't be afforded unless death is imminent.



Ambulance and Mobile Advanced Life Support System (MALSS) cart for Southern California local response

Level of Standby

The complexities of setting criteria might seem overwhelming, but to make things even more difficult, there will be a whole spectrum of levels at which standbys can be performed, and these will relate to both how affordable a standby may be for a given member's situation and the seriousness of the circumstances, as to likelihood of a member's death. Allocation of people when Alcor is shorthanded adds a third dimension to the decision making.

Again, as with criteria, the levels of standby depicted below do not represent standardized groupings which Alcor has settled upon. The matter of structuring standby response is still at an early level of planning, so these levels are hypothetical. Still, they illustrate the gradations of standby which are possible, from a single, semi-trained volunteer to an entire team of professionals. In the discussion which follows, "ACTT" is substituted for "Alcor Certified Transport Technician." Roman numerals are used to keep the confusion level down (when discussing criteria and levels at the same time). Remember now, these levels are hypothetical in that they are not part of any Alcor policy document or manual which describes how standbys are to be performed.

[I] Full Transport Team With Washout Capability. This level, applicable only to remote standby more than 100 miles from Alcor's main suspension facility, would require a team in which the skills of two members (surgeon and perfusionist) exceed those of an ACTT. The procedure to be used at deanimation (with respect to Member's entire person) could be the technological equivalent of that used with an organ for transplantation.

It would be appropriate for legal arrangements to be satisfied so procedures could be started immediately upon occurrence of clinical death. (For example, depending on the local laws, it might be necessary and sufficient to retain registered nurses, standing shifts around the clock, who have the authority to pronounce death.)

At this level, there would need to be a perfusion facility provided in close proximity to the member's location, along with suitable transportation (ambulance, etc.), available on a 24 hour/day basis.

This (very high) level of standby would be possible only on the basis of case by case arrangement, with decisions to deploy personnel made as the case develops, due to the fact that critical personnel from Alcor's main suspension facility would be required and thus made unavailable for emergencies there.

[II] Full Transport Team; Medications Only. This level could be applicable both to remote standby and standby within 100 miles of Alcor's main suspension facility. It might differ from Level I in that no immediate washout (procedure equivalent to that used with an organ for transplantation) would take place.

In the case of standby within 100 miles of Alcor's main suspension facility, differences between levels I and II might be considered negligible from the standpoint of biological preservation, whereas at greater distances the delays involved with transshipment might involve more compromise for Level II than Level I.

In Level II, no perfusion facility rent-

al would be involved. Perhaps Alcor would furnish transportation (to be reimbursed by the member along with other costs of standby). Alcor might not require the same level of provisions for commencement of procedures at clinical death as in Level I (where 24 hour/day Registered Nurses might be a necessity), but it might at least recommend this, to minimize biological compromise.

Level II (or I) standby might normally be used with criteria [A], [B] or [C] above, and with criterion [D] where the APACHE score chosen represents less than 50% probability of survival, but the member might prefer a lesser standby level (below), if such fit the need of the member's situation (very limited funding for standby).

[III] Limited Transport Team. This level of standby might require at least one ACTT and a group of three or more volunteer trainees whose levels of skill satisfy the ACTT that a transport can be carried out with minimal difficulty and compromise of biological viability. This level could be applicable to circumstances where a member could not afford Level II standby, or if lack of trained personnel precluded a Level II standby. This might be the minimal level of standby where deployment of equipment would be provided.

[IV] Notification / Minimal Emergency Procedures Team. This level of standby might require at least one ACTT and one or more volunteer trainees acceptable to the ACTT. The volunteer(s), perhaps, would need not to be ACTT qualified, but it might be a good idea for them to be Alcor Suspension Members in good standing, at least 18 years of age, with CPR training and a basic knowledge of what Alcor does when a qualified team arrives.

The purpose of a level IV standby could be to facilitate Alcor readiness to respond upon pronouncement of death, together with application of such limited medications, external cooling and CPR as the circumstances might permit. No equipment or medications in the way of an organized kit might be deployed in a Level IV standby, and Alcor might not want to guarantee the availability of any equipment or medications whatever at this level. This level of standby would probably be applicable where the member could not afford a higher level, or where lack of trained personnel precluded such.

[V] Notification Standby. At this level, Alcor could recruit (one or more) volunteers to be in the immediate proximity of the member, to help keep Alcor informed of developments which might call for a higher level standby or a suspension operation. The volunteers might not be ACTT qualified, but probably would be Alcor Suspension Members in good standing, at least 18 years of age, with CPR training and a basic knowledge of what Alcor does when a qualified team arrives.

Preferences — Level of Standby

How might a member indicate preferences for standby criteria and levels? The answer is that this is only limited by the member's imagination, but from a more realistic standpoint, it might be well for a member to use a few general statements concerning how much is affordable, and what levels the member might think appropriate for various circumstances.

Undoubtedly, some members will be very detailed about their preferences, while others will be more concise or will just "leave it up to Alcor" as to criteria and levels, within the funding limits they can afford to provide. While there is no harm in being specific, too much detail could be confusing to those who might try to interpret the preferences in the midst of an emergency.

Summary

We wish that this whole issue of standby could be resolved in a more simple, straightforward way, but that seems to be too much to hope for. We hope, at least, that the foregoing discussion provides a heightened appreciation for the complexity of decision making involved with standbys.

Standbys are the first line of defense in the attempt to give each member a reasonable chance of a high viability suspension, should it be necessary for a suspension to occur at all. To fail to provide for standby is practically as shortsighted as to fail to provide for suspension itself.

The Donaldson Perspective

Interview by Ralph Whelan

At the moment, Thomas Donaldson is probably the best-known cryonics figure outside *of cryonics circles. This is due to his involvement in a lawsuit devised to legalize his premortem cryonic suspension, this in turn due to a Grade II Astrocytoma — a brain tumor — that Donaldson worries will eradicate his memories and personality* prior *to his clinical and legal death. However, Donaldson's activities and prominence in cryonics precede this lawsuit by decades. His efforts to establish a body of scientific papers and bibliographies supporting cryonics, as well as his general activism in establishing and organizing cryonics groups both in the United States and in Australia, form an early chapter in the history book of cryonics.*

Cryonics: You grew up in Kentucky, right?

Donaldson: I come from Northern Kentucky, which had a considerable settlement across the river from Ohio. My home town was Fort Thomas, across the river from Ohio. So yeah, I grew up in Kentucky. I went to the University of Kentucky to get my bachelor's.

Cryonics: Studying mathematics?

Donaldson: Yes. Actually, my stepfather felt that I should go into the military. This is before Vietnam or any-

thing. And I didn't want to go into the military, so basically he said he wasn't going to do anything to help me go to college. So I went and enrolled in the University of Kentucky myself, and I went there because it was the cheapest place to go that looked reasonable, since I was going to have to do it myself.

Cryonics: So from there did you go on to graduate school?

Donaldson: Yes, in Chicago.

Cryonics: Majoring again in mathematics?

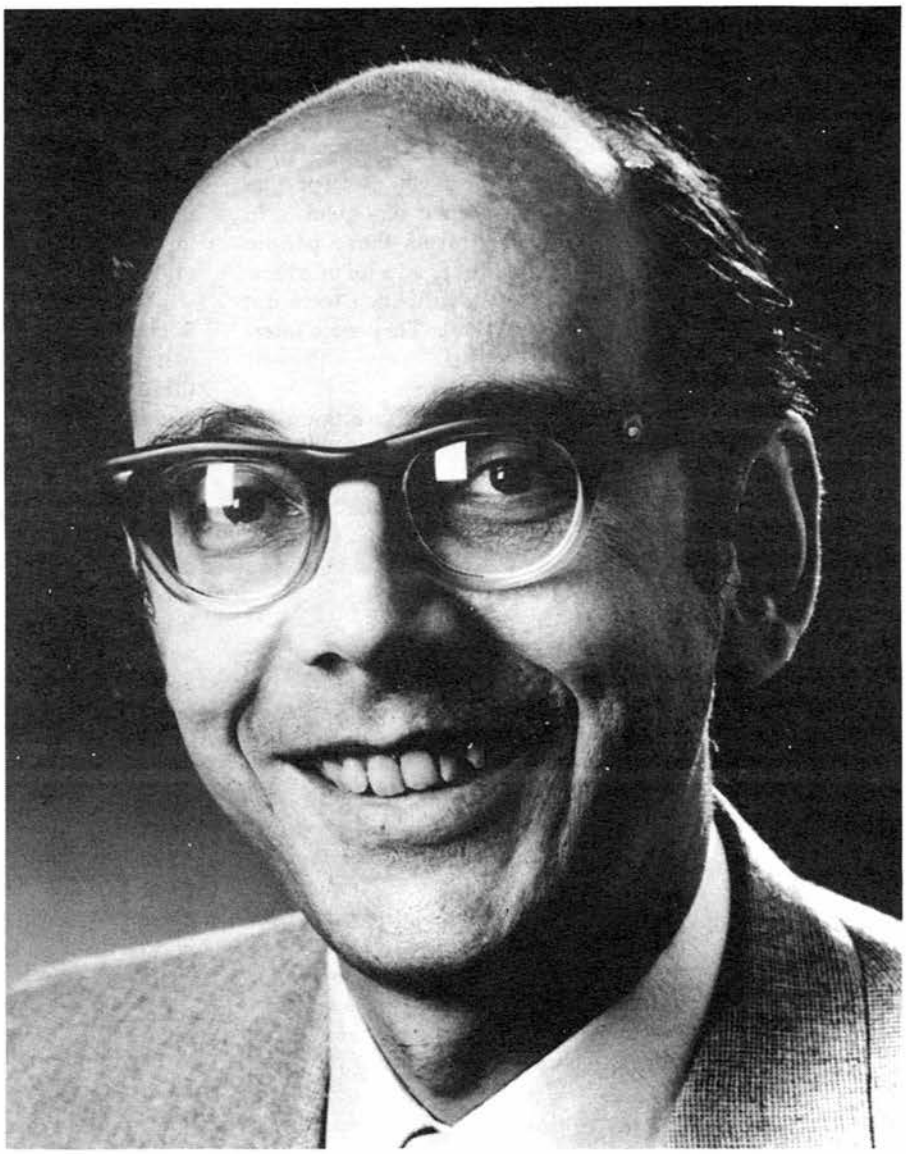
Donaldson: Yes. And I got my doctorate, though there was no such thing as computer science at the time. After the first year, I got my Master's and went off and started doing some research, and that was fine. I've always been interested in all kinds of science, not just math. I've been reading science magazines for a long time. I remember my first couple of days wandering around in the University of Kentucky Library, looking at all the books and so on. But then I went to Chicago, and that was even better — they had far better bookstores.

Cryonics: So from your doctorate, you moved on to what?

Donaldson: Australia. When I was in Chicago, all the Vietnam education was going on, and being realistic I didn't think that I was going to be put on the front lines. But I found the whole atmosphere at UC at that time to be very oppressive. Everybody was very depressed. And that went on all through the Vietnam War. I mean *depressed*, and very negative about the future. "There's going to be a nuclear war, we'll all blow up..." et cetera, et cetera... It was not a nice atmosphere. I didn't like it. And I remember waking up one morning and thinking, "I don't have to stay here. I can go somewhere else."

Cryonics: And that's what happened?

Donaldson: And that's what happened. I went off to Australia. And it was shortly after I went to Australia that we had that incident with the National Guardsmen shooting students. I was in Australia by then. I arrived in Australia in the middle of '69. I'd just got my doctorate, the Vietnam War hadn't ended by then. There was an election. There was the Moon landing, and by that time, I had become very interested in space travel. Even when Kennedy announced that they were going to try and send somebody to the Moon, I'd read a good deal about space travel, and I thought that we should have gone for a space station. I felt that very strongly, in fact. So, when in 1969 they actually landed on the Moon, I was determined not to watch the program. It was a great public relations exercise, but I think that we'd be farther ahead if we had gone with the space station.

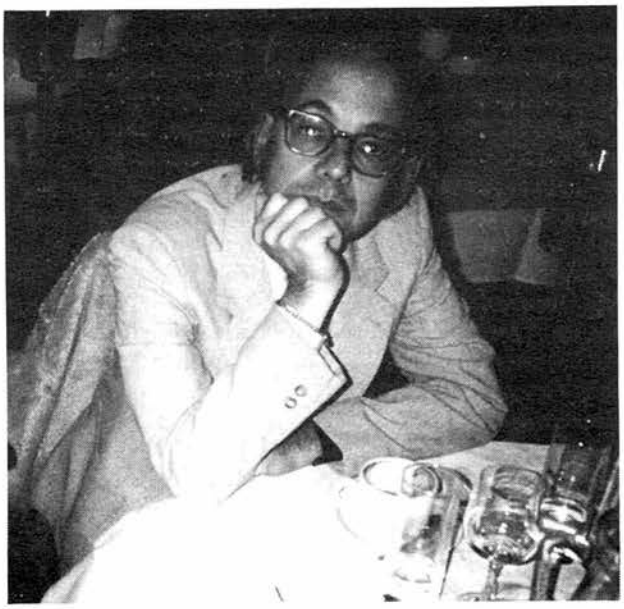


Cryonics: I certainly agree with you there.

Donaldson: Yes, it's easy to see that now. I don't know what you would've thought at the time. Quite possibly you would've agreed with me.

Cryonics: So it's 1969. Had you come across Ettinger's book at this point?

Donaldson: No. I can't recall exactly how I got into cryonics. But I remember reading *The Year 2000* [*See review by Donaldson elsewhere in this issue.* — Ed.] — and that was done sometime before — and hearing about suspended animation and saying "Hey, that's very interesting." And I didn't, at the time, feel threatened by the death issue or by old age. I believe I actually read Ettinger when I was in Australia, not long after. And of course, if anything that increased my interest in it. And then, one of the things I did — and I guess, being in a mathematical field, I should have gone off and given papers at conferences and things, but I had wanted to do this — I went off to New Guinea and spent about two months there, just sort of seeing what life was like there. I ended up going into the mountains, where they [the locals] hadn't been contacted very long.



Thomas Donaldson in Australia, 1990

And I remember coming back after that, and feeling even more interested in suspended animation and cryonic suspension. One of the striking things that I saw was... well, people talk about how "Oh, I'll be revived and then I'll see all these things and I'll just faint dead away." Well, when I went to Chimbu territory, these people of course did not faint dead away when they saw an airplane land. They were very interested. In fact, when I got out of the truck and started to set up my camp, the first thing that happened was that all these people came around and wanted to know about the Moon landing! (Laughs.) And these are people who basically are wearing loincloths.

Cryonics: Are you drawing a parallel between this and... [the fact that] a common theme in the rejection of cryonics is the notion that one *belongs* in this time in this culture, and that transplanting someone into the future would put him someplace he or she doesn't "belong."

Donaldson: Well, these were people who, in effect, had been transplanted into the future, and they were certainly not just giving up. And, in any material sense, they were very poor. I remember a boy coming up — I mean a real boy... some of the settlers referred to every Chimbu as a boy, but I mean... a *boy* (laughs) — he actually *counted* the possessions I had brought with me. "Fifteen things! Wow! *Fifteen things!*" (Laughs.) They had a lot of misconceptions as to how things worked, but in their terms they were actually being very logical. When they looked at airplanes: "Where are the genitals? How do these things...?" They were not used to the idea of people actually being able to build something like that. This was an *artifact*. The very matter-of-fact way in which these people responded to all these changes tells me that even these people who think that they won't be able to adjust... they're quite, quite wrong. It's like, if the Martians *really truly* arrived in their flying saucers, you'd accept what happened very quickly. In our terms these people would need a lot of education. But, they were not *astounded* by anything. They were *interested*.

Cryonics: And you were there for how long?

Donaldson: About two months.

Cryonics: Two months. And then you went back to —

Donaldson: Australia.

Cryonics: And at some point along here, your interest in cryonics became active?

Donaldson: Yes, I sort of grew into that. I remember reading Ettinger's book. And when I came back from New Guinea, I said Gee, these people have come from twenty thousand years ago. Where will we be twenty thousand years in the future? And so I was even more interested. And, I was beginning to understand that... I had the death problem too.

Cryonics: So did you contact Ettinger?

Donaldson: Yes, I contacted Ettinger.

Cryonics: From Australia?

Donaldson: From Australia. I wrote a whole lot of letters.

Cryonics: When would you say this began?

Donaldson: Oh, golly. Maybe as long ago as '71, or '70 even. The Waltons [Judy and Wes, early cryonics figures] were there. They never did anything. They went down to Australia basically because Judy Walton had a scholarship to do a doctorate. Ultimately I believe they separated, though I haven't asked them about this. But they did do one interview, and then just sort of left it at that. They were never really very active. I tried to find people who were interested, get a group together, you know?

Cryonics: So you were the primary catalyst in Australia?

Donaldson: Yes. For a while we had a little newsletter. We were trying to get it together, and at the same time I was writing up to the States. The Cryonics Society of California was just on its last leg, and I wrote to them. I wrote to the Cryonics Society of New York, before they completely broke up. And it wasn't clear that there was anywhere — if you really wanted to set up a long-term program to be suspended — anywhere to go, as distinct from some people in the States who had formed some small groups and declared that they would freeze dead people if the dead people were brought to them. It also had begun to seem that that would get you into a whole lot of legal hot water. So I never got much out of the Cryonics Society of California. Actually I got one leaflet from... from...

Cryonics: Marce Johnson?

Donaldson: Yes, it was Marce Johnson. A leaflet and a note. And Paul Porcasi. A note from him. Then of course, nothing. And I knew that Alcor had recently been founded, and all that.

Cryonics: So you knew about Fred and Linda [Chamberlain]?

Donaldson: Yes. They didn't want to deal with anyone outside of their immediate area at the time. I did get a copy of their handbook for suspending human beings. Anyway, I was trying to get some people together. I had a sabbatical in '75, which is when I joined ACS. Another thing that happened then is I went up several times to Chicago to meet Pat Dewey. You may not remember him at all. He was actually the editor and publisher of the newsletter of the Cryonics Society of Michigan. They called it *The Outlook* then.

I was going to go back to Australia, but at the same time I didn't just want to work in Australia, I wanted to help out. And this took a while, but I started writing for *The Outlook* — I've even got some of the old issues with my articles in them — both life extension stuff — you know, drugs and whatnot — and also cryonics stuff. And then Pat apparently had a lot of problems with Bob Ettinger, and decided to found his own magazine. From '77 to '80 he was just busting his gut trying to put that thing out, and I was writing more for him than he could print in one issue. I wrote an early bibliography of material related to cryonics, which actually both Alcor and Trans Time got copies of. I think it was one of the early sort of attempts to talk about what the science was like and all these other things. And of course there's been a whole lot happening on the memory and brain function side of things, but I've never really got around to updating it. For instance I had one section on repair methods. It was never really copyrighted or anything, and back in those days cryonics was not anywhere near the condition it's in now. We were just a bunch of weirdos off in a corner. I discussed several repair methods, and I think it was one of the very early instances of what people would now talk about as "nanotechnology," although, in the broad rather than the narrow sense... That happened rather early on. I decided I wouldn't just write articles for Pat on various topics, I would start writing reports and commentaries about the latest scientific developments that pertained.

Cryonics: And this was the beginning of your Science Reports?

Donaldson: Yes, that's right. I'd read all kinds of things and try to put them together and have a report on them. And one of the first things that happened when I decided to do that, was I said, "Gee, I should go and learn more about this biochemistry thing." So I read up on biochemistry. That was '76, '77 at the latest. The books I read were talking only about how "This is how this reaction is done... these are the steps..." And they had at that time the general notion of enzymes and so on, but they were only talking about it from the viewpoint of "Well, this is what goes on." Not from a technological viewpoint. And the very first thing that happened when I read the book, I said "Gee, if we figure out how to do that stuff, and modify it, and make it work according to our own plans, we'd be able to do *all kinds* of incredible things." I actually think Drexler has seen a copy of [this article discussing possible repair methods], because when he talks about cryonics in his book, he comes up with a lot of points that sound very much like points that I made. But you understand that I never really tried to publish these things in any public way.

Cryonics: Did you see it as a potentially marketable idea at that point? Or was that the furthest thing from your mind?

Donaldson: Yes, it was the furthest thing from my mind. I also thought at the time that if we could get this thing going, and modify it, it's not just going to be limited to cryonics at all. And I'll also say that even then I didn't think that we had to use ordinary biochemistry. There's some fundamental ideas that extend much more broadly. Silicon... whatever. At that time, it was very common to hear people talking about creating life. And if you start thinking about that whole thing *technologically*, you're no longer limited to water as a solvent. You're no longer limited to carbon. You *are* going to be limited by chemistry, because of course these little atoms won't just stay where you put them, you know? They want to react with things and so on. And so I think it's very important for any concept of nanotechnology to have a decent chemical basis. So when I read Drexler's book, [*Engines of Creation*], I felt dissatisfied on that score. Not to mention that Drexler's book doesn't really go into any mechanics of it. I will say though that Drexler himself seems to me to be a lot less limited than many others who advocate nanotechnology. In reading his book, you see he comes right out and says many of the earliest instances of these [nanomachines] that we produce may very well come from biochemistry. The biochemistry that we have *now*, not some extended version that works with silicon or liquid nitrogen. I went around for a long time telling people that our command of this sort of chemistry will have come to its greatest level if we are able to make steel at room temperature. (Laughs.) There are a whole lot of things that technology, when considered and fully understood, ought to be able to let us do.

Cryonics: So, when you began writing along these lines, you were still in Australia?

Donaldson: Right. I was in Australia until '85.

Cryonics: Until '85. Weren't you somehow involved with the first dog Total Body Washout (TBW) right around then?

Donaldson: It was a funny thing. I was down in Australia at the time that I signed up with ACS (American Cryonics Society) in 1975. I flew up — I was on sabbatical — I got off the plane, Jim Yount met me, *bang*. You know? That was quite intentional because of course I'd been interested in cryonics before then,

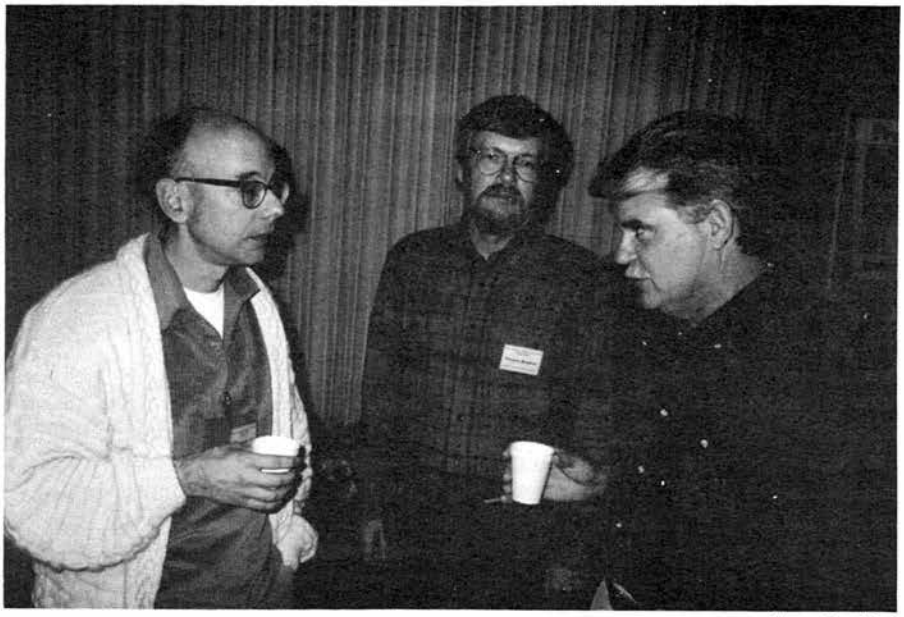


Photo: Steve Harris

Thomas Donaldson, Gregory Benford (science-fiction author), and Chris Ashworth (attorney) at the Dec. 1990 Donaldson Legal Defense Fund Dinner

and had even written letters trying to find out, "Is there a Society? And where are they?" ACS, I believe, was one of the first societies to actually have a completely thought out suspension program, instead of just taking people who were terminally ill and freezing them when they died, or even just receiving somebody's body and freezing that. And of course that was a big advance. Things were very unformed then, as you might guess. As for my memory of the dog experiment, the very first one, I had felt for a very long time that basically we were going to have to do some experiments to improve our freezing methods. I mean you couldn't rely on outsiders at all. I wrote a very strong letter to Alcor saying, basically, "Please get your thumb out," you know? (Laughs.) I mean, this is not a hard thing to do. You take one dog, you perfuse it with whatever your current perfusate is, you take [its temperature] down and you freeze it. Then you look at the brain afterwards.

Cryonics: Were you an ACS member at this time?

Donaldson: Yes. But things were not as... the problems had not yet arisen. For some time, Jerry Leaf [Cryovita owner and cardiac researcher then; later also Alcor Vice-President] was quite willing to work with ACS, and in fact was one of the major figures helping them suspend people. That fell apart when they... this is just the story as I remember it... Jerry did not want publicity. Certainly not the kind of publicity ACS was seeking. And fundamentally at that time, that publicity was the only thing that could keep Trans Time going. Some Japanese would come over and pay Trans Time money for information and photographs of a suspension.

Cryonics: I remember talking to Jerry about this.

Donaldson: Jerry, on the other hand, was following a more private approach, and he didn't want this to happen. So it all broke down at that point, and they did some outrageous things toward the end, which really set Jerry off, and he said "Well, I'm not going to deal with you anymore." I'd been feeling uneasy about ACS for some time. I came up here in '85 and... at the same time, maybe I have this loyalty kink or something. I wasn't just going to leave, you know? I wanted to try and see what could be done.

Cryonics: Done...?

Donaldson: With ACS. And of course when I came up and actually attended some of the meetings, the ACS meetings, my feeling that things were in a bad state was greatly enhanced. ACS actually held one meeting at our house; it was just after I had switched to Alcor. I had promised to hold a meeting there, so we held the meeting there. And basically, I tried to get some people who were on the board off the board.

Cryonics: This is after you switched, though?

Donaldson: Yes.

Cryonics: So, did you think at the time that the things you wanted to see *were happening* at Alcor, or that you could *make* them happen?

Donaldson: Oh, I thought that they were happening, by that time. This letter about the dog experiment, I wrote it from Australia. As I recall it, I pointed out that we were the only ones interested in this, and that nothing was going to happen unless we did it. If you can suspend people, you ought to be able to do the same to a dog and look at the results. I didn't have in mind anything very elaborate.

Cryonics: So this was your idea of how to get a picture of what the suspension process was doing to biological systems.

Donaldson: Exactly. And of course, once you know that you have some basis for trying to improve it. I felt for a long time before I switched that research on the process was very important, and ought not to be slighted. Jerry Leaf hadn't even joined [Alcor] at that time, but they did it, and they took some micrographs of the dog's brain, and I think that that experience kind of... started some people going.

Cryonics: We started to touch on nanotechnology a moment ago; I'd like to get back to that. What, in your opinion, will be the role of nanotechnology in reviving cryonics patients?

Donaldson: I think that many of the exponents, as distinguished from Eric [Drexler], take much too limited a view of the tools they have available.

Cryonics: Too limited in what sense?

Donaldson: Well, now they have the scanning-tunneling microscope. This is a great idea and it's a wonderful tool, but it's not the only thing. Drexler brings up self-reproducing machines. Well, a lot of things can be done just through a well-planned series of chemical reactions. And for that matter, I don't think that a single self-reproducing machine of any kind will be able to repair us. We'll need probably a quite complicated system which will of course go down to nano scales, but it will have a lot of other things too. And it will be a whole lot of these things working together — not necessarily self-reproducing — but indeed machines working at that level.

Cryonics: Well, it's pretty evident that you think reanimating people is going to entail a lot more than just full-blown nanoscale engineering.

Donaldson: Well there's one thing that I've been hitting pretty heavily in my science reports and in my newsletter, *Periastron*, and that is, just how *are* our memories stored? And what's the physical basis of our identities? And that of course immediately gets you into biochemistry, physiology, all those subjects that many advocates of Nanotechnology — and I always spell that with a capital "N" when I'm referring to them and with a little "n" when I'm referring to the whole field — they seem not to want to get into very deeply at all. And the fact is, you're not going to be able to do anything, even upload people, unless you understand the physical basis of our identity. For instance, there's one major fault with "Molecular Repair of the Brain" that I don't believe Ralph [Merkle] has yet addressed. He isn't really discussing repair at all. He's just discussing how it would be possible to take this damaged brain, and read it all off into a computer. Of course, in the same damaged state. And unless he understands how to recover from that damaged state, the computer is not going to help.

Cryonics: So you don't believe that having a sufficient level of technology to read the contents of someone's brain into a computer necessarily means that we could infer the undamaged state?

Donaldson: Exactly. You have to know more about the way a normal brain is put together.

Cryonics: Do you believe that that understanding will necessarily accompany the technology to examine and manipulate the brain at this level?

Donaldson: It will probably come before then, actually. There's an attitude going around that I really object to. I went to that hundred- buck Research Dinner in September, and I was depressed by the number of people who had actually showed up, and the amount of money that was raised. You're not really going to be able to get away from biology. Sure, you can read all of this biology into your computer, but you're still going to have to *understand* it. And certainly if we can go down and look at things at a cellular scale, then I think that long before this full- blown nanotechnology — either will a capital N or with a little n — comes around, a whole lot of these issues will have been solved. But just sort of washing your hands and saying, "Certainly when we can operate at that level it will all become clear," isn't really answering the question, it's just making an assumption.

I just get the feeling that a lot of advocates of Nanotechnology — not all of them, certainly not Drexler — seem to have this sense of, "Oh, well it's all so easy." ...And of course many of the illustrations that come up in cryonics and so on are miniature machines, which have no real possibility of existing at all.

Cryonics: Well, are you just making a point, or are you suggesting an alternate course of action?

Donaldson: Frankly, I think that the major fault in Ralph's [Merkle] article is that it does not discuss details, and just loading something into a computer simply will not be enough. Even now, if we choose some suspension method that can be shown to destroy the connectivity of our brains completely, then we will very likely be destroying identity. And of course the connectivity of the brain is a much more complex subject than simply whether or not two neurons connect together. I don't think that anyone who wants to seriously consider the subject of repair can neglect this... Let's suppose for the sake of argument that the information required to put all these connections back in place is actually still available. Well, you also have the issue of just exactly how much computing would be needed to pull all that information out. And of course, anybody who has dealt with supercomputers up close — and parallel computing up close, and for that matter virtually any mathematician — can come up and say, "Well, you want a problem that will take one billion years to solve on a Cray Y-MT? Here's your problem!"

Cryonics: Your ideas in the area of repair — many of which preceded the conventional notion of nanotechnology — seem a lot more biological than do Eric Drexler's. I can't help wondering if you think reanimation might become possible a good bit before we achieve this prescribed level of nanotechnology.

Donaldson: Well, this is one of the ways in which I think many advocates of Nanotechnology — and this is with a big "N" — are very much limiting the scope of repair technologies that they're prepared to think about. I know that Eric has been working along the same lines he was with these little computing devices. And one of the things I don't like about that group is that they want to restrict membership. But in any case — "

Cryonics: Which group?

Donaldson: The group that focuses around Eric Drexler. They'll hold seminars, and any old klutz can't just go, it has to be by invitation. That kind of thing. But, there's a much broader range of technologies that are likely to become available. Some of them are available now. I think that if we are to set about really thinking about how to repair something, then we'll have to pay attention to the chemical milieu in which this happens. If you want to do it when the brain is frozen in liquid nitrogen, you're still going to have to deal with liquid nitrogen, with whatever problems are involved with getting these little devices in there... I think that one of the things that is going to come about, is that the distinction between biological and non-biological is going to become fainter and fainter and go away. Because after all, enzymes are one variety of little machines. We may go on from there; we can use biochemical techniques based on silicon or something. We're not obligated to use water as our solvent. I think that probably the repair process will be at least as complex as the process by which we develop in the first place.

I just get the feeling that a lot of advocates of Nanotechnology — not all of them, certainly not Drexler — seem to have this sense of, "Oh, well it's all so easy." If you ignore chemistry, and of course biochemistry, then you can think of these things as just miniature machines. And of course many of the illustrations that come up in cryonics and so on are miniature machines, which have no real possibility of existing at all. Unless we somehow manage to invent atoms which are shrunk by a similar scale. (Laughs.) It's certainly going to make repair scenarios much more complex than they would seem if we just put some... Walt Disneyish, smooth machines into the brain and have them running around.

That's the way that I would state my feelings about nanotechnology. Small "n."

Cryonics: To change gears for a minute, what's your anticipation of how the appellate judgment in your case is likely to go?

Donaldson: That's hard. Whether [the judges] speaking to [Chris Ashworth] for a long time means they wanted to give him a good length of rope to hang himself with, or whether they were impressed by his arguments, we can't really tell immediately. Although I do think that Ashworth has good judgment in these matters, and he seems to feel that we've got a better than fifty percent chance.

Cryonics: Besides the obvious effect, what do you think would be some of the subsidiary effects on you of winning this case?

Donaldson: Well, I'd certainly be very glad. I know of somebody with a much worse tumor than I who is now an Alcor member. I've been stable. I haven't been getting any worse. I would say I've been very lucky in terms of what's been happening to me. Not everybody is so lucky, and even not every Alcor member.

And this guy may be the first one to be frozen using this judgment. Of course, I went into this lawsuit with myself in mind, but I would be very pleased if the outcome of it was someone else was first frozen. And of course I don't want to be frozen. I would prefer to continue on, so long as my condition is stable.

Cryonics: How do you think winning this case would affect cryonics?

Donaldson: Well you know, it's funny, I think a lot of the news that flared up when the case was filed came about because a lot of people still don't understand about death. You've probably met this yourself: all these people talking about "Well, we don't want to be frozen until we can be frozen *alive*." And — depending on what you mean by life and death — you can't do that now. I think that there would still need to be a lot of education, because even now you can get people talking against euthanasia using arguments which really... the underlying consensus seems to be that people die like they die in fiction, you know? There's grandmother, and she's, of course, quite conscious of everything that's going on around her, and as she calls all her family in she gives them a fully articulate statement of what they should each do... (laughs)... and then goes, "Oof."

Cryonics: Right.

Donaldson: And we know that that rarely, if ever, happens. And my sense of it is that in most cases some human being, as distinct from the person who is dying, decided to flip a switch or something, after which a death certificate is written. It's either decided by default, by not letting them stay on apparatus that would keep them going, or they literally say "Well, this is not working," and flip the switch. So I find it hard, other than in the case of some possible ignorance about what goes on, to understand these people who talk about euthanasia and DNR's ["Do Not Resuscitate's"] and hospitals and all the rest, but in a sense it's quite easy to see what's going on: They don't want to think about it at all, you know? And since they don't want to think about it, they're just going to believe what goes on in plays and fiction and all that. And that's a mistake.

Cryonics: I've heard the sentiment in cryonics circles that winning this case would be the Big Payoff for cryonics; that it would turn cryonics around.

Donaldson: That's an interesting one. I just don't know. Frankly, I got into the case because I thought that, number one, it would benefit me, number two — assuming we win — it would help people who want to be frozen... to join because they have serious misconceptions about death in the first place. They may go off on an anti-euthanasia kick... I don't know what they're going to do. There's a very widespread set of ideas about [humanities] problems that cryonics runs head-on into. In fact, I think we should be more explicit about that, but of course I know there are some cryonicists who also think that we should try and play it down. I can see that there might be lots of publicity and that will help with recruitment and so on, but I don't think that it's going to make cryonics all of a sudden an accepted technique.

Cryonics: Well I wouldn't anticipate that either, although I'd guess that this sort of legal acceptance is probably a step toward more general acceptance.

Donaldson: Alcor is growing. We've all been working very hard on this for years, and it is beginning to have an effect. And that's all for the good. In fact I'd say that this is the kind of case that ought to be brought, and if we fail, then the proper thing to do is to bring another one. Later on. And I'd have to starve to death... but there is a legal principle here, and it would greatly help *us*, not just me. Even just the logistics of suspensions ought to become easier if there were a significant number of cases in which it was a procedure that somebody could say, "Well, I'm going to have it done at such-and-such a time."

Cryonics: It would certainly be a dramatic change in procedure.

Donaldson: Yes. All the substructure we've built up for immediate reaction I think we'd still need, but it would certainly be easier in terms of time and expense and all the rest if there was a certain amount of leeway there. Frankly I think that nobody is going to want to do this until it's the very last moment.

Cryonics: Is there anything more about the legal situation — or anything else — that you'd like to say?

Donaldson: You know, since I've had my tumor, I have had a feeling that... I've sort of become a one-issue person, and I haven't liked that because I've been with cryonics for quite some time and I have my own ideas about lots of things. Perhaps after this thing is over I can go back to being... more like me. The tumor has injured me a little, but it's not progressing, and I think I ought to be able to make contributions in lots of areas similar to the ones I was making. I'm a person. I've been with cryonics for a long time. I don't want to be brushed aside on the grounds that I'm a patient about to be frozen, which in my case... I'm hoping won't happen for some time. For a long time.

Selling Cryonics

Charles Platt

Selling cryonics should benefit all of us. More members mean more money, and more money should mean more research, better suspension techniques, hence a greater chance of eventual resuscitation.

On the other hand, we all know how difficult it can be to convince people. I was reminded of this recently when I talked to Frederik Pohl, a science-fiction writer whom I have known for more than twenty years. Fred takes cryonics seriously and doesn't argue with its fundamentals. But, he says, he doesn't want to come back in a future where he may feel outcast; he doesn't want to spend the money; he'll be ready to go when it's his time to go; he can't imagine living a better life than he's already lived; and so on, and so forth. The

bottom line is, he just *doesn't want to do it.*

Frederik Pohl ought to be an ideal candidate; and he yet he isn't. Paradoxically, other people with less science background and no lifelong interest in the future have been much more willing to sign up as suspension members.

Experiences like this have convinced me that it's impossible to predict who will be receptive to the idea of cryonics, and who won't. Since the number of receptive people is very small, popularizing it on a grass-roots level becomes a painfully slow process of trial and error.

If we want more cryonicists (as I think we all do), surely we need to improve the techniques by which cryonics is presented to the public. This means doing more than waiting for journalists to write (possibly hostile) articles, hoping that the articles will encourage people to call, and then sending out literature. If cryonics is going to reach a larger audience, it must be considered as a product: a package of options and benefits being offered to a skeptical consumer who must be tempted a little bit. I realize this isn't how it's been done in the past, and I realize that I am a relative newcomer compared with others who have decades more experience with cryonics than myself. Still, I would like to offer some suggestions.

In any business, it helps to look at the competition and see how they do it. Who is Alcor's most successful competitor, and how has its success been achieved?

I suggest that in simplistic terms, the most successful competitor is the Catholic Church, which has more adherents than any other faith in the world. Let me state right away that I abhor organized religion and I am not suggesting that cryonicists should turn into evangelists. We have to recognize, however, that many people find comfort in Catholicism for the same reason that many people join Alcor: they are worried about what happens to them when they die. This being so, why is it that there are millions of Catholic believers, while the far more rational "faith" of cryonics has attracted only a few hundred suspension members? What does Catholicism offer which Alcor doesn't?

First, the church makes things very simple. It uses the Bible to tell stories substantiating the fundamental religious claims. Second, the church is uncompromising; it absolutely guarantees that believers will be saved. Third, you can join merely by walking into a service. Fourth, the church offers numerous benefits right here and now: community spirit and friendship in a congregation, comfort from the concept of God listening to prayers, alleviation of guilt though confession, and a faith that combats feelings of helplessness and fear. Lastly, there is no fixed cost: All payments are voluntary.

As a package of benefits, this must be unequaled by any other institution. Indeed, if any other institution tried to equal it, they would be convicted of fraudulent misrepresentation. Small wonder, then, that Catholicism has mass appeal.

On this crass basis ("What do I give? What do I get?") cryonics does badly by comparison. First, cryonics is very complicated. Scientific papers substantiate its claims. Second, it offers no guarantees. Resuscitation has never been demonstrated, will depend on technology that doesn't exist, and may turn out to be impossible. Third, signing up is a long process that entails some hard decisions ("How much of my brain must be undamaged for suspension to be worthwhile?") and a lot of depressing legal paperwork. Fourth, there aren't many fringe benefits. Local special-interest groups do exist, providing some sense of community, but these groups are widely scattered, and some of their members may seem a bit odd. Lastly, payment is not voluntary, and must be made regularly to avoid losing membership privileges.

I realize that many people will complain I am "missing the point" by itemizing costs and benefits in this way. I hope it's clear that personally, I don't look at Alcor like this. I am proud to be a suspension member, and Alcor is the only organization to which I am happy to devote my time without recompense. To an outsider, however, I do think the kinds of factors that I have summarized are important. Cryonics simply does not look like a very good bargain, especially to someone who lacks a science background and doesn't have much faith in technology.

The question, then, is: How can cryonics seem more attractive? I am not suggesting that cryonics should be turned into a cult, or given a misleadingly optimistic appearance. I am merely suggesting that there must be positive aspects that have not been given their fair share of attention; and the human needs of a potential member should receive much more consideration than has been given in the past. Here are my specific suggestions.

1) Alcor literature does an excellent job of explaining cryonics in rational terms, but this is not sufficient as a way to convince people. All of us — even those who feel they are totally rational — are swayed by human factors in addition to hard data. I joined Alcor only after I had visited the facility and met the directors. Other potential members who can't necessarily manage this will need a substitute for the personal experience. The literature should include, for instance, a "personal message" from the CEO of Alcor — a statement of principle, written with sincerity in the first person. "Why I have devoted my life to cryonics" could be its theme. Joining a cryonics organization is a leap of faith requiring a high degree of trust. We tend to be much more willing to trust an organization if it gives us a real person to believe in; that's why the Catholic Church has the Pope, and why mail-order catalogs often include a personal message from the president of the company, with his photograph alongside.

2) I'd like to see some personal endorsements — statements from suspension members (famous ones, if possible) explaining why they made the decision to sign up. We're much more willing to try something if we see that other people have tried it and feel good about it.

3) Let's address some of the tangible emotional benefits of cryonics. I myself feel differently about death since I signed up. The steel dewar, which seemed an ominous prospect at first, has become a source of comfort. But nowhere in Alcor's literature did I find any hint that signing up could take a load off my mind. There is a positive benefit, here, that is not even mentioned. Why not? It's real, and it matters.

4) I'd like to see people's feelings about death tackled more directly. In the past, Alcor has tried to avoid using the word "death" altogether. Certainly it's a good idea to emphasize that the dividing line between life and death is getting fuzzy, and we have reason to feel that "not dead, only sleeping" is a fair description of cryonic suspension. Still, people shy away from cryonics because they don't want to think about growing old and dying. This evasiveness needs to be confronted, as Mike Darwin did at a recent public meeting. "You are all dying, right now," Mike told his audience. He then described the aging process in harsh detail. That little speech was very effective because it emphasized some inescapable facts, and then offered some hope. I'd like to see this incorporated somewhere in the Alcor literature.

5) It would be nice if the literature

could make cryonicists seem more like a friendly, supportive community, less like a bunch of litigious libertarians. (I realize, this may be difficult!) People are more tempted to join an organization if it seems to embody warmth and good spirit. Some articles in *Cryonics* magazine have embodied this. It should carry over into the sales literature, too.

Lastly, I believe it's way overdue to consider public relations. Alcor has had a lot of press attention, but most of it has been the kind of attention that tends to scare people rather than convince them. Alcor has usually been on the defensive, responding to journalists, trying to justify itself, trying to deal with innuendo. Most organizations would compensate for this by publicizing their positive aspects. Alcor has made only very limited attempts to do so.

In one sense, this is a good thing. I respect honesty, and Alcor's openness about its troubles and its limitations encouraged me to join. I would hate to see this honesty compromised in the interests of presenting a better image.

On the other hand, there are some kinds of P.R. that merely popularize a product without papering over the truth in any way. Is it wise to think of promoting cryonics in this fashion? Consider the alternative. In New York City, where I live, we recently organized a meeting which we hoped would attract potential new members. Mike Darwin was our guest speaker, and we represented his visit as a rare and special event. I helped to create a mailing of 750 three-page letters to known libertarians and people who had contacted alcor in the past for information. Each letter consisted of a personal statement from Brenda Peters, an advertisement for the meeting itself, and a reprinted magazine article presenting some information about cryonics. Local newspapers received these info-packets. Postcards were sent to regular New York members.

In many respects the meeting was a success. We attracted about twenty regulars from the New York area, plus about thirty others who responded to our publicity. The audience gave Mike a very warm reception, there were a lot of questions, and many people stayed behind to learn more. I collected a $3 (voluntary) admission fee at the door and sold Alcor literature. As a result, we took in $169. Maybe I should have been pleased; but I wasn't. Of the thirty "newcomes" at the meeting, only seven or eight were true outsiders who had know nothing about Alcor. It cost over $200 and took a lot of time to create the mailing and stuff the envelopes. The meeting itself took more time, from people who helped to run it and from our guest speaker. The meeting also cost money in room rental and refreshments. All this effort reached a very small number of potential new members.

There simply has to be a better way. The grass-roots approach may work eventually, enrolling members in ones and twos, but I find it personally discouraging and I'm not sure I have sufficient patience.

There is a vast media network out there, hungry for items of interest to fill their pages. Alcor could be taking advantage of that media network, manipulating it instead of being manipulated by it. A public relations effort could help to give Alcor that control. It would be a first step toward selling cryonics actively rather than pursuing the modest, passive strategy that has prevailed in the past.

Reviews

Late For Dinner

A Review by Arel Lucas

In the Greek tale of Orpheus and Eurydice, the son of the muse of music, a grandson of the sun god, goes to the realm of Hades to bring back his dead wife. After charming the god of hell with his mother's music, he leads Eurydice toward the surface, but she looks back, and all is lost.

W. D. Richter, of "Buckaroo Banzai" fame, took this Greek tragedy, teased it apart with a jigsaw, then rearranged it so that it turns out to be a funny, happy tale of a Husband who comes back from the dead (frozen) to search for his Joy (his wife). She looks back, and nearly is lost to him (and to her joy), but he and her brother (who was also frozen) persist, and all ends happily. In the process, we see love, compassion, trust and kindness triumph over bitterness, cynicism, ignorance and pain. The story is so beautiful that I think I'll take my nearly nine-year-old daughter to see it — even though the depth of the characters and story are such that she may only be able to skim the surface of understanding it.

I came away skipping across the surface of reality like a flat stone, having increased my usual sense of alienation — but with a positive spin. Usually I feel as though I've got my foot caught in time and space, unable to free myself of the web of problems which beset me. I've never felt comfortable in my culture, my country, my era, and most of the time anything which causes further alienation has negative results. Seeing this film taught me that there can be a positive spin to alienation, a sense of time-skimming in which the anchor to one's own time has momentarily allowed an overview centuries long, as though one were floating above the surface of time and only touching down long enough to enjoy the peculiarities of timebound human culture. It's not that I hadn't had the experience before, just that I hadn't discovered the emotional cause — an increase in alienation from my time/space which is positive in nature. Slowly Richter induced me to identify with Husband (the main character is, of

course, named "Husband," the doctor who freezes him "Chilblains" — little odd Richter twists reflecting his outre sense of humor), a man who wakes up 29 years after he has been frozen involuntarily. Somehow the fact that it all supposedly happened in 1962, two years before Prospect of Immortality was published, five years before Bedford (the first person frozen still frozen) was preserved, doesn't touch the emotional impact of his preservation and awakening. I didn't even mind the fact that modern equipment not available or even considered for cryonic use in 1962 was used to freeze the two protagonists.

Suffice it to say Husband has a lot on his plate when he wakes up with his brother-in-law in 1991. The initial shock is eased by the fact the director of the current cryonics company (inhabiting a graffiti-marred warehouse in the Los Angeles area) is driving an antique car in which he has conveniently left the keys. And by the fact that they are in a strange place, having left their home in Santa Fe on the lam. They expect strangeness, but not the intense chronodislocation which eventually is their lot.

Husband, however, must go home to his wife, his Joy, and their daughter. As Husband induces his wife to accept him, back from hell, released from a Dantean lake of ice by a freak accident which delivers massive voltage as well as overwhelming force to their dewars, he reveals small portions of his thoughts during the 800- mile journey home. His love and determination touched me to the extent that my own family (my anchors in time who nevertheless journey through time with me) has become much more precious to me.

CASTLE ROCK ENTERTAINMENT

Late for Dinner

Brian Wimmer and Peter Berg star as brothers-in-law and best friends whose unwitting participation in a bizarre 1962 experiment brings them 29 years into the future in **LATE FOR DINNER**, a Castle Rock Entertainment production.
Photo credit: Lorev Sebastian

THE YEAR 2000

by Herman Kahn and Anthony J. Wiener

book review by Thomas Donaldson

This book is hardly new. Older cryonicists, particularly, may remember it quite well; it wouldn't surprise me at all if very few people who joined more recently remember it at all. It was published in 1967, a year before Ettinger's book was taken up by the trade press and published in volume. I decided that it would make an interesting review (or article) to look back at it and see how well it did in prediction. In a broad sense, that was not exactly Kahn's purpose: not so much to work out the future in detail, but rather to set some bounds to it. So what did Kahn and Wiener see coming, and what did they completely fail to imagine?

In one major point, of course, I too am carrying out an exercise in anticipation. After all, I'm writing this in August of 1991. We have 9 years to go until the year 2000. Who can say what might happen between then and now? But let's examine the book anyway, since perhaps our vision for 10 years into the future may be a bit better than Kahn's vision for 30 years.

The first section of the book looks at several historians who have attempted not just to tell about past events but to see some kind of pattern in history. They include Pitirim Sorokin, Arnold Toynbee, and Oswald Spengler (so far as I know, all three of these historians are currently out of favor). All three historians distinguished several major phases through which a culture would pass cyclically: from a highly religious phase, to a "Sensate" phase (Sorokin's term), to a "Late Sensate" phase. If these historians are to believed, we now classify as Sensate to Late Sensate: democratic, realistic, agnostic in terms of religion, with a belief that morality was a contractual matter rather than something handed down by a superior power, and so on. I believe some issue might be taken with each of these, but I don't think it's central.

Kahn and Wiener of course recognized that technological developments would play a large role. We get into the meat of their predictions when we examine their list of "100 technological develop-

ments likely to occur." These include:

Widespread nuclear power

Regardless of what you or I may think about the merits of nuclear power, *The Year 2000* quite obviously was written in a time when all the complaints about nuclear power had not started. The authors envision far more extensive use of nuclear power than has yet actually developed both in the United States and elsewhere. This includes widespread use of breeder reactors. One instance would be a large plant south of Los Angeles producing 150 million gallons of water per day by desalinization (using the power generated) plus 1800 megawatts of power at competitive prices.

Although Kahn and Wiener mention some uneasiness about widespread use of nuclear explosives for construction and earthmoving (they were thought to be entirely too close to weapons) they felt that on balance the year 2000 would see their use.

Electronics (including computers)

This one is actually very interesting. The authors do foresee an improvement of 5 to 10 orders of magnitude, and the importance of programming languages (just then in process of development; they mention "new... languages such as Fortran"). They spend a good deal of thought on artificial intelligence, which has by now at least developed into a far more complex subject than anyone imagined in the '60s. (A current saying in the AI industry: "If we can put it on a computer it's not really intelligent!"). However, their foresight about PCs and workstations is ambiguous at best: they imagine, instead, "computer consoles in every home, perhaps linked to public utility computers and permitting each user his private file space in a central computer." They foresee a "single national information file... about each citizen,... use of computers to reduce and punish crime," and so on. They predict that the "computer utility industry" will become as fundamental as the power industry.

Well, yes and no, on all headings. We can, however, see many of these things around us now. But computers have not become "public utilities" in the same sense as Pacific Gas and Electric, and they did not foresee the personal computer at all.

Again, on a related issue, they predict widespread industrial and even personal automation. Perhaps the jury should still stay out on this one; but certainly by 1991, although we do have much more electronics at home, and more appliances (many of us can remember when dishwashers and microwaves first came into use) it's clear that this growth has *not* followed the pattern that Kahn and Wiener suggested. I still have to vacuum my own floor and fix my own dinner; I would not be surprised at all if the same were true in the year 2000.

Holography

At the time holography was first introduced, many foresaw stunning applications for it. Kahn and Wiener do also. So far these hopes have not been fulfilled, and the time is growing short. This is particularly interesting because, more as curiosities than as actual practical tools, some of these applications actually exist now. For instance, many of these ideas foresee use of holography to make 3-dimensional displays (for air controllers, for microscopes, for display of an engineering design...). Devices to do this certainly exist now, but so far haven't shown much tendency to catch on.

The biological manipulation of Man

Hmmm. And for cryonicists, double hmmm. Here we have such predictions as: "Air driven pumps to take over part of the work of the left ventricle are expected to be ready for broad use in about five years..." (sort of; pumps exist and are used, but not "broad use"). Cancer cure rates were expected to double (well, perhaps by 2000. We *are* finally beginning to get effective therapies. But again, time grows short). Again, drugs to prolong lifespan have come about (sort of). We have also "The groundwork may be laid for eventual transplantation of limbs from dead to live people," and at the same time, "organ transplantation... may become common." The first has not happened; at the same time, it's easy to see that heart and kidney transplants have actually become common by now. Kahn and Wiener also foresee much better birth control methods; this again has turned out very mixed. Few women I know would claim that we have made any serious advances since the invention of The Pill, although some of the advances these two authors suggest have been approved... overseas.

By 1967 various people had already become alarmed at the prospects of modifying human beings. Various eminent scientists were suggesting collective means to control these developments, but no one seemed to agree. We have become a good deal more casual about at least *genetic* manipulation over the last 10 years. At the same time, uneasiness about significant and profound changes to human beings (like, Oh my God! immortality?) continues. It may have even increased in some circles.

Technological Advances by the Year 2000

So far I've dealt only with those changes Kahn and Wiener have discussed in detail. They had 97 others to suggest. Among these were:

Multiple application of lasers. They got this one entirely right.

New and improved materials. Basically, yes, although these materials may spread more slowly than they thought.

Human hibernation for extensive periods (months to years). This suggestion actually was one of my own first (indirect) contacts with the ideas behind cryonics [*See "The Donaldson Perspective," elsewhere in this issue.* — Ed.]. Given that we're speaking of 10 years in the future, I'd give this, at best, a "sort of" rather than an uncomplicated "yes."

A significant number of their suggestions have indeed taken place, though only in a very small way. Some of their suggestions have actually happened, fully and completely. Among those "existing" we have giant and/or supersonic jets (remember we're discussing 1967!), and new sources of power for ground transportation (batteries, fuel cells, propulsion or support by electromagnetic fields). (None of these have taken over in any way, but they do exist. Battery-powered cars may actually be in common use in 10 years). We also have new and relatively effective counter-insurgency techniques (this may cause a bitter smile among many readers), and permanent manned satellite and lunar installations (well, the Russians *do* have a small space station! I don't feel sure that's just what Kahn and Wiener had in mind, though...).

Along with nuclear explosives, of course, would come much more earthmoving and modification. Damming the Amazon to produce an inland sea is one of these Kahn and Wiener suggest.

Economic Changes

The book is very descriptive of a state it calls the "post-industrial society." The GNP per capita of the United States, by their projections, would reach or pass $10,000 in 1965 dollars. In current inflated dollars, this would mean a GNP PER CAPITA of $100,000 dollars or more. (The authors also markedly underestimate the growth and importance of Japan!) They believe that such a GNP is needed for their "post-industrial society." Let's allow that to pass for a moment: one other mark of a post-industrial society is the growing importance of service industries (this did turn out). Another mark is a decrease in the work week. For the U.S., *not at all*. It is possible that standard vacation time (one month) in Germany, Australia, and other "advanced" countries came about after 1967, although for all of these countries the time spent on the job still comes out far above Kahn and Wiener's estimates. And we see no prospect of significant change within 10 years. They also envision a world in which public welfare pays well enough that many people get along quite comfortably without working at all; any libertarian would say that their picture of the future involves our being a good deal more socialized and bureaucratized. Private businesses, however, would still remain.

Social Changes

This "post-industrial" society, according to Kahn and Wiener, would involve a considerable spread of the values and attitudes of the hippies of the Sixties throughout the society. Economic achievement would not interest many people, and use of mood-altering drugs, possibly more advanced than those known in the Sixties, would become much more widespread. (Well, certainly the designs and aesthetic of Hippies have been taken over by shops and businesses all over. Cute business names abound. But I doubt that many people would accept that any other part of Hippie culture has spread. Where is this widespread use of mood-altering drugs?)

Political Changes

These authors don't pretend to predict political events so much as they try to describe a range of reasonable possibilities. However, among these the Middle Eastern situation, and dependence on Middle Eastern oil, never appears in Kahn and Wiener's book. Furthermore, their standard prediction for the world in 2000 envisions widespread nuclear arms and ABM systems, some of them in orbit, owned by the Major Powers. It's also interesting and fair to point out that one of their future scenarios for Vietnam does actually envision a defeat for the United States (after the U.S. unsuccessfully attempts a major invasion of North Vietnam, captures Hanoi, but cannot hold it). But after this defeat events go very differently from the actual history we have seen: Communist movements strengthen all over the world, Europe becomes alienated from the U.S., and the U.S. itself moves into isolation.

So What Does All This Mean?

My descriptions above should give any reader a good idea of the kind of world Kahn and Wiener foresaw for the year 2000. Before *The Year 2000*, others had imagined semipredictive ideas about future events. It's important to understand that Kahn and Wiener openly state that they aim not to predict in detail but to foresee the broad general shape of events.

Still, rereading their book in 1991, their biases and presuppositions shine out brightly from every page. Neither Environmentalism, nor the reawakening of Feminism, get any attention at all: the Amazon basin is blithely turned into an inland sea using nuclear explosives, without a peep from anyone. What a strange, distorted future they suggest for us!

It is very easy to simply dismiss these authors as wrong. Particularly for us, because our ideas involve the future more intensely than any others. What is really needed is to understand why and how they were wrong, not just to explain their particular failures as prophets but to understand how we can avoid similar failures when we also try to imagine the future, from our very different standpoint.

In one sense their technological predictions come out best of all: even if many of these haven't become widespread, we can see some that have actually happened (organ transplants as common medicine, "giant" passenger jets) and others which may be very slowly coming into view (long-term hibernation? Hmmm). But even here, in almost every case, the prediction comes true but with an odd slant they did not imagine at all. It's like the widespread use of passenger flight predicted at the end of the 19th Century: yes, certainly, but people then were talking about *dirigibles*. Airplanes they totally failed to foresee.

As cryonicists, with our striving for "long-term hibernation," we can see how very important that slant can turn out to be. Technology *is* very important; no one can pretend to understand the future without examining technology. But at the same time there can be deep opposition, conscious or not, to some kinds of technology. That opposition can mean that the predicted events happen very long after their purely *technical* possibility would suggest. Cryonics isn't the only such case: In 1967 Kahn and Wiener actually truly believed that the U.S. would continue to fund contraceptive research and promote use of contraceptives in India, Africa, or Latin America! And of course we have the Head of the FDA doing his best to suppress use of any vitamins, minerals, or drugs which may prolong lifespan.

Others may simply fail to catch on, despite their possibility, because for one reason or another they don't answer our human needs (transplanting limbs? widespread use of holography? and maybe even widespread nuclear weapons). Or again, to pursue any technology requires will, talent, and money. None of these have an infinite supply. One reason we may not have gone as far in space travel as these authors foresaw may be that electronics and computers have sucked up much of the talent and money available.

It's clear that no technology ever comes into use without much human effort. And if that technology will cause great upheavals in society, or to any large segment of society, then somehow, one way or another, it will meet with Opposition. Kahn and Wiener wrote in a time of technological optimism: so many wonders could be seen then, just a bit beyond our reach. And so quite naturally they imagined a future in which all these wonders were gathered in, all in a short time. They forgot that no such wonder can be plucked unless we can extend our arms to grasp it. So, what can prevent us from reaching out?

Finally, as for their ideas of social and economic change, they may tell us that it's a serious error to simply extrapolate existing trends, no matter how strong and popular they may seem to be. Even if change does happen, we must expect a cyclic element too. In recent history this has included a surge of religious revivals over the whole world, revival of feminism in Western countries (note that I say

revival), and popular movements against growth of any kind. Biological modifications of mankind? Even now, abortion clinics are besieged and doctors reassure us that their genetic modifications "are only to the body, not the genes themselves."

I don't claim that these ideas are the only ones we might get from a 1991 examination of Kahn and Wiener's book. I hope readers will have others. And it will be very interesting to read it again in 9 years' time, and get a *real* idea of where Kahn and Wiener were wrong — and right.

Recent Abstracts of Interest

Zamora R Hidalgo FJ Tappel AL
Comparative antioxidant effectiveness of dietary beta-carotene, vitamin E, selenium and coenzyme Q10 in rat erythrocytes and plasma.
J Nutr 1991 Jan;**121(1)**:50-6
Five groups of five weanling rats were each fed a Torula yeast-based diet either unsupplemented or supplemented with 30 mg beta-carotene/kg, 30 IU vitamin E/kg, 1 mg selenium/kg or 30 mg coenzyme Q10/kg. Elevated levels of plasma aspartate aminotransferase and alanine aminotransferase are sensitive indicators of liver damage. The former enzyme was lower (P less than 0.01) in the vitamin E-, selenium- and beta-carotene-supplemented groups than in the unsupplemented control group, and the latter enzyme was lower in the vitamin E- and selenium-supplemented groups, suggesting a relatively equal effectiveness of these three antioxidants against liver damage. Erythrocytes were tested for protection against uninduced oxidative damage or that induced by 1 mmol/L bromotrichloromethane (BrCl3C) by measuring thiobarbituric acid-reactive substances (TBARS), hemoglobin, hemolysis, protein precipitation, alanine release and several enzyme activities. In untreated erythrocytes, selenium, beta-carotene and coenzyme Q10 exhibited protection by lowering (P less than 0.05) TBARS and alanine release, but only vitamin E protected against hemolysis. In BrCl3C-treated erythrocytes, vitamin E, selenium and beta-carotene protected by decreasing (P less than 0.05) protein precipitation, whereas selenium and beta-carotene decreased alanine release. The results of this study suggested that, in a manner analogous to vitamin E and selenium, beta-carotene and coenzyme Q10 function as antioxygenic nutrients.

Bando H Zhang C Takada Y Yamasaki R Saito S
Impaired secretion of growth hormone-releasing hormone, growth hormone and IGF-I in elderly men.
Acta Endocrinol (Copenh) 1991 Jan;**124(1)**:31-6
The GHRH test and L-dopa test were performed in 12 normal young men (24.1 +/- 1.1 years) and 12 normal elderly men (77.8 +/- 1.4 years) to investigate age-related changes in secretion of GHRH, GH and IGF-I. The basal plasma levels of GHRH and GH were not significantly different in young and elderly men, but the basal plasma level of IGF-I was higher in the young men (159.0 +/- 11.7 vs 86.7 +/- 11.6 micrograms/l). The area under the curve for plasma GH in the GHRH test was less in the elderly group (35.1 +/- 5.9 vs 11.2 +/- 2.1 micrograms. h-1. l-1, p less than 0.001). The AUCs for the plasma GHRH and GH responses in the L-dopa test in young and elderly men were 32.0 +/- 2.7 vs 20.3 +/- 1.8 ng.h-1.l-1 (p less than 0.001), and 21.8 +/- 4.6 vs 5.4 +/- 1.1 micrograms.h-1.l-1 (p less than 0.01), respectively, indicating decreased releases of GHRH and GH in the elderly. Correlations between the AUCs for plasma GHRH and GH responses in L-dopa were found in both groups, but the ratio of the AUCs for GH/GHRH was lower in the elderly group. The elderly group showed a significant correlation between the basal plasma IGF-I level and the AUCs for plasma GH in the GHRH and L-dopa tests. These results suggest that elderly men have a decreased reserve of hypothalamic GHRH, resulting in secondarily impaired GH release, which may lead to a lower level of IGF-I than in young men.

Stocker R Bowry VW Frei B
Ubiquinol-10 protects human low density lipoprotein more efficiently against lipid peroxidation than does alpha-tocopherol.
Proc Natl Acad Sci U S A 1991 Mar 1;**88(5)**:1646-50
The temporal disappearance of natural antioxidants associated with human low density lipoprotein (LDL) in relation to the appearance of various classes of lipid hydroperoxides was investigated under three types of oxidizing conditions. Freshly isolated LDL from plasma of healthy subjects was free of detectable amounts of lipid hydroperoxides as measured by HPLC postcolumn chemiluminescence detection. Exposure of such LDL to a mild, constant flux of aqueous peroxyl radicals led to rapid and complete oxidation of ubiquinol-10, followed by slower partial depletion of lycopene, beta-carotene, and alpha-tocopherol. After an initial lag period of complete inhibition of detectable lipid peroxidation, formation of hydroperoxides of cholesterol esters, triglycerides, and phospholipids was observed. The onset of detectable lipid peroxidation corresponded closely with the completion of ubiquinol-10 consumption. However, small amounts of ascorbate, present as a contaminant in the LDL preparation, rather than ubiquinol-10 itself were responsible for the initial lag period. Thus, complete consumption of ubiquinol-10 was preceded by that of ascorbate, and exposure of ascorbate-free LDL to aqueous peroxyl radicals resulted in immediate formation of detectable amounts of lipid hydroperoxides. The rate of radical-mediated formation of lipid hydroperoxides in ascorbate-free LDL was low as long as ubiquinol-10 was present, but increased rapidly after its consumption, even though more than 80% and 95% of endogenous carotenoids and alpha-tocopherol, respectively, were still present. Qualitatively similar results were obtained when peroxyl radicals were generated within LDL or when the lipoprotein was exposed to oxidants produced by activated human polymorphonuclear leukocytes. LDL oxidation was reduced significantly by supplementing the lipoprotein preparation with physiological amounts of either ascorbate or ubiquinol-10. Our data show that ubiquinol-10 is much more efficient in inhibiting LDL oxidation than either lycopene, beta-carotene, or alpha-tocopherol.

Alcor News

Mike Darwin Departs

Effective December 13th, Michael Darwin (Federowicz) resigned from Alcor's board of directors. Mike has also resigned his employment at Alcor. His leaving is due to personal reasons.

For his twenty-three years of dedication to cryonics and his last ten years of service to Alcor, Mike has earned our deepest appreciation. Certainly a large measure of what Alcor has become is a result of Mike's efforts.

Many members, especially long-time members, will have questions about the impact this will have on our suspension capability, as well as research issues. These concerns will be addressed in the February issue of *Cryonics*. In the meantime we will be assessing the deficiencies we now face, and deciding exactly how to remedy them.

Worker's Compensation Insurance

The State's own insurance company, known as "State Fund," after four months of contemplation, has finally quoted Alcor a premium for worker's compensation insurance. We are obligated by State Law to carry this type of coverage (see November issue of *Cryonics*). Happily, we were able to tell the State Fund where to put their policy thanks to Alcor volunteer Tanya Jones, who found us an insurance agent, who in turn found us a private carrier.

Unfortunately, our premium will still be quite high: about $10k per year. It is no wonder that many employers are leaving California rather than pay this "protection money." Alcor will be able to cover most of this cost by getting higher interest on our Endowment Fund, and squeezing out the last few pennies of slack in our budget. But some part of this newest cost of doing business will have to be passed on to you, our members.

Advertisements And Personals

The Alcor Life Extension Foundation *and* Cryonics *reserve the right to accept, reject, or edit ads at our own discretion and assume no responsibility for their content or the consequences of answering these advertisements. The rate is $8.00 per line per month (lines are approximately 66 columns wide). Tip-in rates per sheet are $90 (already printed and folded); or $180 (printed one side) or $270 (printed both sides), from camera-ready copy. Tip-in ads must be clearly identified as such.*

MARY NAPLES, CLU and BOB GILMORE — CRYONICS INSURANCE SPECIALISTS. New York Life Insurance Company; 4600 Bohannon Drive, Suite 100; Menlo Park, CA 94025. (800) 645-3338.

EXTROPY: The Journal of Transhumanist Thought, #7. Memetics and cryonics, privately produced law, spontaneous orders (markets, agoristic computing, hypertext) neurocomputation, neologisms, transhumanism, reviews of *Smart Drugs*, and more. $4 from Max More; P.O. Box 77243, Los Angeles, CA 90007-0243.

Do you want to keep up with science and technology bearing on cryonics? ***PERIASTRON*** is a science newsletter written by and for cryonicists, only $2.50 per issue. ***PERIASTRON***, PO 2365, Sunnyvale CA 94087.

In So. Cal. call Dave Montoya, agent Kachok & Co. Ins, Inc. 619-587-2727 or 714-674-0151. Serving locally since 1961.

Meeting Schedules

Alcor business meetings are usually held on the first Sunday of the month. Guests are welcome. Unless otherwise noted, meetings start at 1 PM. For meeting directions, or if you get lost, call Alcor at (714) 736-1703 and page the technician on call.

The **SUN, JANUARY 5** meeting will be at the home of:
Allen J. Lopp, 13354 Veracruz St., Cerritos, CA

Directions: Take the Artesia Freeway (State 91) to Cerritos [between the San Gabriel Freeway (I-605) and the Santa Ana Freeway (I-5)], and get off at Carmenita Road going north. Veracruz is the third street on the left after 183rd St. 13354 is on the southwest corner of Carmenita and Veracruz. You may park on Veracruz or in the lot of the Thrifty Drugs on the opposite side of Carmenita.

The **SUN, FEB 2, 1992** meeting will be held at:
ALCOR/Cryovita Laboratories
12327 Doherty St., Riverside, CA 92503

Directions: Take the Riverside Freeway (State Hwy 91) east toward Riverside. Go through Corona, and get off at the McKinley St. exit. Go right (south) on McKinley. Turn left (east) on Sampson (1st stop light). Go about 1 mile along Sampson to Granite. Go left on Granite to its end, and turn right on Doherty. Go about 200 yards on Doherty and turn left into the industrial park just short of "Great Eastern Furniture." Alcor is the third building from the back, on the right.

There is an Alcor chapter in the **San Francisco Bay area**. Its members are aggressively pursuing an improved rescue and suspension capability in that area. Meetings are generally held on the second Sunday of the month, at 4 PM, followed by a potluck. Meeting locations can be obtained by calling the chapter's Secretary, Lola McCrary, at (415) 812-4422 or (E-mail) Lola@lucid.com.

The **SUN, JAN 12, 1992** meeting will be held at the home of:
Ralph Merkle and Carol Shaw, 1134 Pimento Ave., Sunnyvale, CA

After the business meeting and potluck there will be an *Introduction to Cryonics* talk at 7 PM, followed by a question and answer period.

Directions: Take US 85 through Sunnyvale and exit going East on Fremont to Mary. Go left on Mary to Ticonderoga. Go right on Ticonderoga to Pimento. Turn left on Pimento to 1134 Pimento Ave.

The **SUN, FEB 9, 1992** meeting will be held at the home of:
Keith Henson and Arel Lucas, 1794 Cardel Way, San Jose, CA

Directions: Take the 17 South (880) and get off going east on Camden. Stay on Camden as it turns south and go to Michon Dr. Turn right onto Michon and go to Harwood Rd. Turn left on Harwood and go south to Almaden Rd. (1st street on right). Turn right on Almaden and right again onto Elrose, then left onto Cardel. 1794 is near the end of the street, on the left.

There are two Alcor discussion groups in the **Greater New York area**. Details may be obtained by calling either Gerard Arthus, at (516) 474-2949, or Curtis Henderson, at (516) 589-4256.

The ***Alcor New York Group*** meets on the the third **Sunday** of each month at 2:30 PM, at **72nd Street Studios**. The address is 131 West 72nd Street (New York), between Columbus and Broadway. Ask for the Alcor group. Subway stop: 72nd Street, on the 1, 2, or 3 trains.

Meeting dates: **Jan. 19, Feb. 16, Mar. 15, April 19.**

The ***Long Island Cryonics Discussion Group of Alcor*** meets on the first Saturday of every month, at 2:30 PM, at the home of Gerry Arthus. The address is: 17 Mystic Way, Stony Brook, L.I., telephone (516) 689-6160.

Meeting dates: **Jan. 5, Feb. 2, Mar. 1, April 5.**

There is a cryonics discussion group in the **Boston area** meeting on the second Sunday each month at 3:00 PM. The January 12 and February 9 meetings will be held at 26 Ward St., Apt. 1, Boston. If you are taking the "T," get off at Andrews Square. If you are driving, take the Andrews Square exit off the 93 (first exit south of Massachusetts Ave). Go to the six-way intersection and take Prebble St. Ward St. is the second left. Further information may be obtained by contacting Walter Vannini at (603) 595-8418 (home) or (617) 647-2291 (work).

The **Houston area** has a discussion group on cryonics, life extension, and the high/low diet. Meetings are typically held the second Saturday of every month. For more information call Ravin Jain at 713-797-1076 or Rupert Hazle at 713-480-3309. Correspondence may be addressed to Rupert Hazle at 15107 McConn, Webster, TX 77598.

There is a an Alcor chapter in **England,** with a full suspension and laboratory facility south of London. Its members are working aggressively to build a solid emergency response, transport, and suspension capability. Meetings are held monthly at a member's home, with some of the day spent at the nearby Alcor facility, conducting classes and tours. Meeting commences at 10:30 A.M., and ends late afternoon.

The **SUN, JANUARY 5** meeting will be held at the home of:
Alan Sinclair, "The Thatched Cottage," Jevington Road,
Wannock, Nr. Polegate, East Sussex BN26 5NX, England

Directions: It is recommended you call ahead to obtain directions; most attendees drive in from different regions. For this information, call Alan Sinclair at 0323-488-150. For those living in or around metropolitan London, you can contact Garret Smyth at 081-789-1045, or Russell Whitaker at 071-702-0234. Calling ahead will also assure you a place at the dinner table.

Other Events of Interest

Alcor's 20th Anniversary and the 25th Anniversary of the Freezing of the First Man

A banquet will be held on Saturday evening, April 4th, 1992 at the Marriott Hotel, 2200 E. Holt, Ontario, California to celebrate the 20th anniversary of the Alcor Life Extension Foundation and the 25th anniversary of the freezing of the first man, Dr. James Bedford.

The evening will include good food, conversation with fellow cryonicists, and excellent speakers talking about cryonics then and now.

COST: $40 before February 15, 1992, $50 thereafter. Payment and reservation must be received no later than March 26, 1992. Please make checks payable to Alcor Foundation, 12327 Doherty St., Riverside, CA 92503, or call 1-800-367-2228 to use your MasterCard or Visa.

NOTE: A group rate on hotel accommodations will be offered to Alcor guests by the Marriott Hotel.

Sunday, April 5th, 1992, those who wish to can attend the monthly Alcor Business Meeting, to be held at the home of Saul Kent. Alcor will also be conducting tours of the Alcor facility.

ALCOR LIFE EXTENSION FOUNDATION
12327 Doherty Street
Riverside, CA 92503

FORWARDING AND RETURN POSTAGE GUARANTEED
ADDRESS CORRECTION REQUESTED

For information on cryonics call Alcor:
1-800-367-2228 (toll-free, non-members only) or 1-714-736-1703 (members).