Cryonics

Volume 12(4)
April, 1991
ISSN 1054-4305
$3.50

Where new members are coming from . . .

. . . And where they aren't.

Feature Articles

Columns

Departments

Cryonics

Volume 12(4)
April, 1991
Issue 129, ISSN 1054-4305

❄

Cryonics is the magazine of the Alcor Life Extension Foundation, Inc.

Managing Editor: Ralph Whelan
Editor: Hugh Hixon
Contributing Editor: Mike Darwin
Production Editors: Eric Geislinger and Jane Talisman

Published monthly. Individual subscriptions: $25 per year in the U.S.; $35 per year in Canada and Mexico; $40 per year all others. Back issues are $3.50 each in the U.S., Canada, and Mexico; $4.50 each all others.

❄

Please address all editorial correspondence to ALCOR, 12327 Doherty Street, Riverside, CA 92503 or phone (800) 367-2228 or (714) 736-1703. FAX #: (714) 736- 6917.

❄

❄

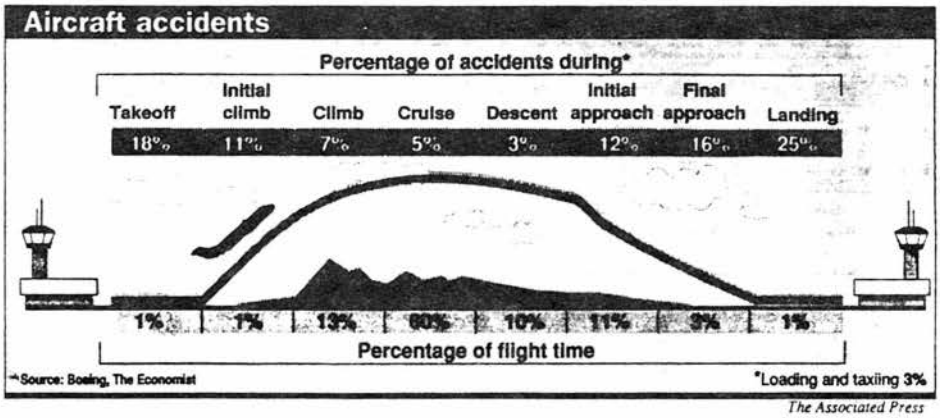
Cover:

This demographic study compiled by Ralph Whelan references the article, "When Do I Buy Alcor Stock?"

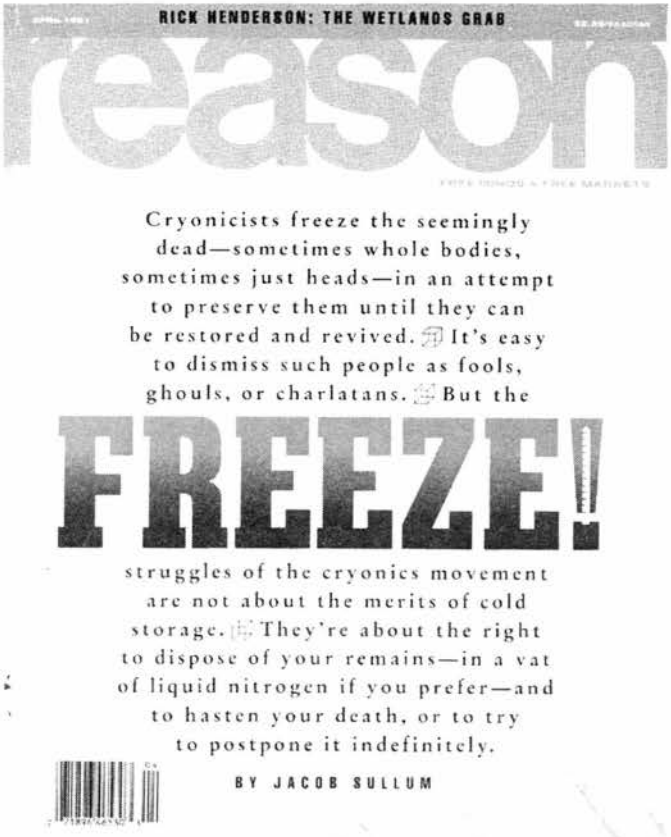
Mike Darwin and Ralph Whelan

Know When To Be Nervous

For those of you who are terrified when flying, we thought we'd run the little item below from Associated Press. It tells you exactly *when* to be most afraid; no surprises here, most accidents are on take-offs and landings. One you're in the air, though, you are *very* safe. So, once you're up, sit back and relax. . . .



The Associated Press


RICK HENDERSON: THE WETLANDS GRAB

reason

Cryonicists freeze the seemingly dead—sometimes whole bodies, sometimes just heads—in an attempt to preserve them until they can be restored and revived. It's easy to dismiss such people as fools, ghouls, or charlatans. But the

FREEZE!

struggles of the cryonics movement are not about the merits of cold storage. They're about the right to dispose of your remains—in a vat of liquid nitrogen if you prefer—and to hasten your death, or to try to postpone it indefinitely.

BY JACOB SULLUM

Cryonics and *Reason*

This month's issue of *Reason* magazine contains quite a lengthy piece—the cover article, in fact—about Alcor and cryonics, written by Assistant Editor Jacob Sullum. This is quite comprehensive for a magazine article and is surprisingly accurate in its representation of the facts. (The misquotes and false figures we usually see are very frustrating.)

What healthy exposure, too. *Reason* is "the magazine of free minds & free markets," a libertarianesque publication dedicated to issues of progress and liberty and such. The readership of *Reason* is somewhat along the lines of the typical cryonicist, with respect to politics and personal philosophy. (In fact, we received a few calls from *Reason* subscribers before we even got our copy!)

Much as we're pleased with the exposure, though, it's disappointing to see yet another otherwise balanced article stoop to pre-school pundits and cheap shots every other paragraph, lest their readership actually take this idea seriously. Rather than state simply and professionally that they have little regard for our premises, we see accurate and even reporting interspiced with the occasional stick or stone.

But not to belabor the drawbacks. This article is a fine example of the general and gradual improvement in the media coverage we're receiving.

What's Holding Up Dinner?

For those of us who have been awaiting the release of the forthcoming cryonics movie *Late For Dinner*, the question is, "when will it be served?" To answer this question, a call was recently made to Castlerock's production offices. The answer: "post-production difficulties necessitate a reshoot of some scenes and a recut of the film." This is a tasteful way of saying that version 1.0 didn't fly, either with the producer or a test audience. . . . It's hard to say what this is likely to mean about the final product.

What we do know is that a new scheduled release "date" has been set, this time for the Labor Day weekend slot. We hope to get an invite to a sneak preview; if we do, we'll try to get a review to you as quickly as Siskel and Ebert!

Membership Status

Alcor has 219 Suspension Members, 548 Associate Members, and 17 members in suspension.

Letters to the Editor

Dear Editor,

As a member of Alcor, a Libertarian, and a *Reason* magazine subscriber, I was pleased to see the article (and a "FREEZE" headline on the cover) on cryonics and Alcor in *Reason*'s April, 1991 issue.

Some cryonicists may nit-pick at a few things, but overall, it was fair, unbiased, and rather frank. I have been a loyal subscriber to *Reason* magazine for several years and I believe Alcor should be proud to have had an article appear within its pages. For the most part, *Reason*'s readers are primarily free-market/libertarian types (such as myself) who would be sympathetic to the views expressed by the Alcor personnel, expecially Tom Donaldson. As Jacob Sullum, the author of the piece, stated rather simply, it's about the right of the individual to dispose of his/her remains, and also about the right to control one's own destiny while still alive.

Keep up the good work, Alcor! Live long and prosper.

Sincerely,
Tom Hazard

To the Editor,

In the January 1991 issue of *Cryonics* Mike Darwin gave a good answer to Chet Fleming's comments about starving oneself to death as a way to avoid brain destruction. In the article Mr. Fleming refers to, I also was speaking very loosely when I used the word "starvation," which clearly caused misunderstanding. I apologize for this. However I was surprised that Mike did not bring one major fact out more strongly, one which alone makes Chet Fleming's comments almost irrelevant. The fact is that, unless we win our current lawsuit, dehydration becomes the only *legally* available means by which I, or other cryonicicsts, could commit a kind of suicide when terminally ill, *without* at the same time bringing the Coroner around to have our brains destroyed by autopsy. *We* did not choose deydration and starvation. It is presently forced upon us by State Law. Even if dehydration or starvation may cause some (yet unproven) brain damage, autopsy causes *proven* total destruction, as does the brain tumor itself. I am choosing the best of three bad alternatives.

Long life,
Thomas Donaldson
Sunnyvale, CA

Dear *Cryonics*,

Re Mike Darwin's moving report "Mark" in *Cryonics*, vol 12(2) (Feb '91) and the emotional impact of the many similar events which will happen.

At first I thought his concern was somewhat unnecessary because it is something that doctors and nurses have learned to deal with daily. Upon further consideration, however, I realized that as cryonicists (and even more so for those of us who are immortalists) our view of death and our consequent emotion of grief should be quite different from that of others. For non-cryonicists, the person's existence was going to end sometime anyway. Therefore, a major basis for grief is the percentage of average lifespan that the person has lived. This is shown by the different amounts of grief felt at the news of the death of a 20 year old (what a shame, she had her whole life ahead of her), the proportionately smaller amount at the death of a 50 year old (he had lived many happy and productive years, but too bad for the wife), and the lack of grief (relief?) shown at the death of someone over 100 (she had a good life and deserved the rest).

As cryonicists, however, we should view every death as a colossal, unnecessary waste. Our grief will be even stronger in the case of someone who is older and/or has shown their human potential. Mike is right in his view that dealing with their emotions of grief will be a problem for Alcor staff and others intimately involved with recruiting people for cryonic suspension.

Health and happiness forever,
Paul Wakfer

"Nothing to worry about. It's all part of the aging process."

IN HEALTH MARCH APRIL 1991

John Locke and Personal Identity

Michael Perry

The philosopher John Locke (1632-1704) is chiefly remembered today for his political writings, which influenced the American and French revolutions and helped foster the rise of modern democracies in the centuries that followed. All that was quite an accomplishment and Locke is ranked 48th among the 100 most influential persons in history in a celebrated book by Michael Hart (*The 100*, Galahad Books, 1982). However, Locke was not just a political thinker; he made other notable contributions to philosophy, many of which are contained in his 1690 treatise, *An Essay Concerning Human Understanding*. The *Essay*, which deals with the origin, nature, and limits of human knowledge, includes a section (Book 2, Ch. 27, added in 1694) entitled "Of Identity and Diversity" that explores some issues of significance to cryonicists today.

Cryonicists are interested in personal identity, of course, because we value it and hope it can be salvaged from our frozen remains. This "entity that we are" will have to be recovered under very unusual conditions, possibly involving disassembling our physical structure and reassembling it with "repairs" or simply replacing it with new but similar matter. In 1694 there was much unknown that we know today (the modern atomic theory was still well in the future, for instance, though a speculative forerunner existed), but Locke's thoughts are illuminating nonetheless. The opening remarks of the chapter on identity establish a basic stance:

> "Another occasion the mind often takes of comparing, is the very being of things, when, considering *anything as existing at any determined time and place*, we compare it with *itself existing at another time*, and thereon form the ideas of *identity* and *diversity*. When we see anything to be in any place at any instant of time, we are sure (be it what it will) that it is that very thing, and not another which at the same time exists in another place, how like and undistinguishable soever it may be in all other respects ..."

John Locke

"Identity" is thus a relation holding between an object existing at one time, and an object existing at another time, that we consider the "same" object. It might seem then that Locke is advocating a simplistic viewpoint in which, for an object's identity to persist, so that it remains the "same," that object must undergo no internal changes with time, allowable changes being limited to moving it to a new location or orientation. That however is not the case. In fact Locke distinguishes three principal types of "identity" relating to: (1) material objects, (2) living organisms, and (3) persons; in all of these internal changes are allowed.

For material objects Locke would allow changes so long as matter was not added or subtracted:

> "... if two or more atoms be joined together into the same mass, every one of those atoms will be the same ... and whilst they exist united together, the mass, consisting of the same atoms, must be the same mass, or the same body, let the parts be ever so differently jumbled. But if one of these atoms be taken away, or one new one added, it is no longer the same mass or the same body."

A rock, then, would remain the "same" even if melted (under carefully controlled conditions that prevented any atom escaping) but not if chipped.

The situation with living things however is less restrictive:

> "In the state of living creatures, their identity depends not on a mass of the same particles, but on something else. For in them the variation of great parcels of matter alters not the identity: an oak growing from a plant to a great tree, and then lopped, is still the same oak; and a colt grown up to a horse, sometimes fat, sometimes lean, is all the while the same horse: though, in both these cases, there may be a manifest change of the parts; so that truly they are not either of them the same masses of matter ... This also shows wherein the identity of the same *man* consists; viz. in nothing but a participation of the same continued life, by constantly fleeting particles of

matter, in succession vitally united to the same organized body."

Thus Locke viewed an organism as an ongoing process involving "the same continued life;" keep the process going, and you have the same organism, even if much matter is exchanged and great changes in shape and size occur. This applies equally to a man and to other life forms such as animals and plants. From this it might seem that Locke viewed a person as an "ongoing process" and nothing more, but this is not so. A "man" (meaning the human organism) was a very different thing from a "person" (an intelligent creature which might conceivably inhabit something other than a human body). Thus Locke asserts that "consciousness makes personal identity," and elaborates:

> "When we see, hear, smell, taste, feel, meditate, or will anything, we know that we do so. Thus it is always as to our present sensations and perceptions: and by this every one is to himself that which he calls *self*:—it not being considered, in this case, whether the same self be continued in the same or divers substances. For, since consciousness always accompanies thinking, and it is that which makes every one to be what he calls self, and thereby distinguishes himself from all other thinking things, in this alone consists personal identity, i.e. the sameness of a rational being: and as far as this consciousness can be extended backwards to any past action or thought, so far reaches the identity of that person; it is the same self now it was then; and it is by the same self with this present one that now reflects on it, that that action was done."

Locke, in effect, is advocating a memory-based criterion: what we remember doing or feeling is what "we" really did or felt and defines our personal identity. Arguments, in the form of thought experiments, are offered that: 1) two different consciousnesses, hence two persons, could at different times inhabit the same body, and; 2) one consciousness, or one person could at different times inhabit different bodies. Locke believed in a God, and in the possibility of an immaterial component or "soul" that might be a part of the functioning individual, along with the body. Yet neither the material nor the immaterial components comprise the self, "... the same immaterial substance, without the same consciousness, no more making the same person, by being united to any body, than the same particle of matter, without consciousness, united to any body, makes the same person." An immaterial substance, if it exists, is treated the same as any other substance. Personal identity does not depend on the same substance or even the same ongoing process (in a biological sense), but essentially just on *information*. In short, Locke was advocating a form of uploading, which is a controversial topic among cryonicists today. While his arguments have been challenged on various grounds, I think it fair to say that they have not been overthrown, and that they furnish useful insight, whether one accepts them or not.

Immortalist Philosophy

Dynamic Optimism

Max More

Dynamic Optimism: A rationally grounded, empowering attitude toward the future.

Cryonicists are optimists. We spend considerable time and effort setting up and maintaining suspension arrangements with the expectation that we can make it through the historically impenetrable barrier of aging and "death." We do this despite numerous obstacles and uncertainties. We may not be suspended well enough to allow reactivation; our funding may run out; cryonics might be made illegal; our storage facility may one day be bombed; our society might fall apart or be destroyed by war; the procedure may not preserve identity-critical information or it may be impossible to bring us back.

Despite all this and more, we go ahead and make the effort. Not only are we determined to make it into the future; we expect our future to be better than the past. We foresee opportunity, possibility, growth; rather than tremble with fear and uncertainty over what might happen to us, we face our second lives with anticipation and excitement. Is this a reasonable approach to life, or are we deluded? Is our optimism a bloody- minded refusal to face the hard facts, or is our attitude the healthy one?

In answering this question—for ourselves and our gloomy critics—we must distinguish between dynamic optimism (DO) and passive optimism. Passive optimism is an irrational set of beliefs that everything will be just fine no matter what. Passive optimism is also called "faith" or "hope" and is central to most religions. It allows one to believe that salvation is at hand, that injustices will be righted in a later life, that death is followed by an other-worldly state of bliss.

The irrationality of faith resides in its passivity. It claims that all our problems will go away without effort on our part. As such it is a rejection of personal responsibility, of effort, and of reason. Faith goes

hand-in-hand with dogma. Blind, passive optimism requires a set of prescribed beliefs, usually handed down by a supposedly infallible authority or infallible means of knowledge. Dogma opens the way to control by the authority that maintains the belief system. Dogma also slows progress by rejecting new evidence, blocking scientific understanding, and reducing flexibility and the search for new possibilities.

Dynamic optimism (DO) shares with faith the tendency to believe that life will improve. DO differs from faith in being a dynamic, active, responsible approach to life. It tells us that life will improve because we will make it improve! Dynamic optimism is an active, energizing optimism that tells us we are in control, we can make a difference. It tells us that we can survive, we can prosper, we can improve our world technologically, socially, and morally.

Far from rejecting new ideas, new science, and new options, dynamic optimism actively searches for new possibilities, it questions all assumptions, and tells us to invest our self-worth in our willingness and determination to actively explore and improve rather than in defending our position to the end—literally.

With this distinction in mind it will be clear that dynamic optimism is more rational than passive optimism or faith. Yet might not a dynamic optimist still filter out negative information? Might not DO cause us to focus on the positive and downplay the negative? And is this not irrational? Doesn't rationality require realism—seeing the fact objectively?

Yes, dynamic optimism may involve a certain cognitive filtering, but this need not be irrational. Philosophers distinguish between theoretical and practical rationality. A belief is theoretically rational if it properly reflects all the available evidence, and an action is theoretically rational if it proceeds from a theoretically rational belief. A belief is practically rational if it is effective in promoting the goal of the person holding the belief.

Theoretical and practical rationality are closely connected: If you want to accomplish something, then generally the most effective way to do this is to pay attention to the facts and to have true beliefs about the circumstances in which you must act. However, theoretical and practical rationality can come apart. Because of human psychology, it can be practically rational to be theoretically irrational. For instance, if you were stuck in a concentration camp and wanted to retain your sanity and a degree of comfort, it might be rational to try to believe that God would free you and protect you. All the facts might contradict this belief—hence it's theoretically irrational—yet it might be the only way to endure. This way of making the distinction is simplistic but will serve my current purpose.

Passive optimism—faith—may sometimes be practically rational and theoretically irrational. Arguably, for most of human history, theoretically irrational religious belief may have been the most effective way of coping with the inexorable approach of death and personal annihilation. Now it is both theoretically and practically irrational since there are real alternatives with better prospects—life extension, cryonics, and perhaps soon uploading.

Faith, as a system of dogma and tunnel vision, is likely to be very frequently theoretically irrational even though it sometimes accomplishes worthwhile ends. Dynamic optimism may sometimes be theoretically irrational—or will seem to be on the current evidence—though it will show a much greater degree of concordance of theoretical with practical rationality. Why is this, and why is cryonics practically rational and probably theoretically rational too?

In my first column, "Possibility and Prediction" (December, 1990) I argued that there are no good arguments against the technical feasibility of cryonics. That supports the theoretical rationality of our enterprise. Furthermore, there are good inductive reasons for expecting both technical and social progress, though I will not touch upon these here. Still, insurmountable technical difficulties with cryonics or other immortalist ideas such as uploading may someday become apparent. In those circumstances immortalist beliefs and activities might become theoretically irrational—they would go against the most objective assessment of the facts.

Immortalism and cryonics could still be practically rational. At one time it seemed to be theoretically irrational to try to cure certain diseases or to seek to prevent them. It also seemed impossible to send humans to the moon. Yet now we have vaccines, we have virtually eradicated smallpox, and have bounced across our moon. So long as the evidence is not overwhelmingly negative, a dynamically optimistic approach can provide the drive and focus necessary to solve the apparently insuperable obstacles to the desired goal.

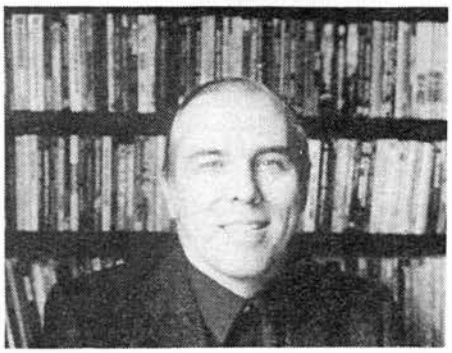
While faith assures us that we will get what we want regardless of what we do, dynamic optimism motivates us to change the situation, to break down current barriers to success. It can therefore be practically rational to filter out discouraging information to the extent that such filtering helps us to persevere.

The simple way I've distinguished between theoretical and practical rationality obscures the important point that "the facts" that specify what is theoretically rational are not fixed. Nothing is intrinsically rational. What it is rational to believe and to do depends on the context. Dynamic optimism, by motivating us to research, to produce, to try, changes the context. The current theoretical irrationality but practical rationality of downplaying discouraging considerations can move us forward; it can make it possible for us to change the context and turn the activity into something clearly both theoretically and practically rational.

The technical, legal, social, and organizational problems of cryonics frighten away many people. But we dynamic optimists recognize the vital importance of the goal; we understand that our personal efforts can advance us toward it. Our endeavors may go beyond the evidence—we cannot be sure that it will work. But it does not definitely fly in the face of any scientific or philosophical understanding. We can move forward confident of the rationality of our actions. When in doubt, just say DO!

Nanotech Notes

Keith Henson



This time I am going to consider what people might do for work in a nanotech world. This is both very difficult and of great interest to cryonicists who wonder what they might be doing when they are revived.

Work is a human specific activity which got started long, long ago when we started moving food from where we found it to where we could eat it. It has been elaborated to the point that the origins have almost been lost, and made very indirect by the invention of money.

One of the difficulties is what would you do with the money (or equivalent) you get in exchange for your work? There are still things you can buy—land, elements, energy, transportation, and information, even finished goods. But there is a heck of a lot of land, especially with nanotech to make it worth something. It also seems likely that we could make a lot of really nice new land (subject for another column!). The useful elements are common and with the sun to tap, energy on the scale for personal use can't be expensive. (Energy on the scale of what you need to launch interstellar craft is another matter.)

No matter how much it costs to get or make it in the first place, information costs almost nothing to duplicate. If you buy finished goods, it is really "services" in that someone else pushes the button on the constructor module. Personal services are hard to predict in a nanotech based world, but I imagine there will still be some. There is still transportation, but a grid of vacuum tunnels carved out by nanotech-built excavators would not cost much either. I could see a long period of deflation—offset, perhaps, by people not needing much money to live.

Money itself, of course, has to be based on something other than paper. Chips which actively resisted duplication perhaps, or coins of rare elements? Or perhaps like it is today, where money is mostly abstract patterns in computers.

Trends at Work

It helps to consider what the past few centuries have brought about in terms of work—especially what has happened *this* century. At the beginning of this century well over half of American families were farmers. Today, some two percent are so occupied. Are the rest unemployed? Far from it. They work in a vast array of jobs, many of them information-related and few of which existed at the turn of the century.

In fact, if you lump communication, entertainment, news, scientific endeavors, engineering, and most of the functions of government into an "information industry," this segment has been accounting for an ever-increasing percentage of what people do for work. It may turn out that the nanotech revolution hardly causes a hiccough in the curve. Heavy duty artificial intelligence might make a difference, but it might be impossible to tell intelligences of direct human origin from those created by teams of people, or (later) other intelligences. (This will be considered in more depth in a column on children or equivalents.)

If this is the case, it may be that if you are into anything that creates new knowledge, stories, or entertainment of any kind, you are likely to have a job—if you want one. If there are not vast numbers of people frozen, revived cryonicists might be in demand to grace parties and tell stories of when times were really tough! On the other hand, if the breakthrough comes soon, no one will be much interested in the tough time many of them remember from personal experience.

Human services is another sector which has been growing apace. It is not obvious to me what direction this would take in a nanotech world. Medical services, on which Americans now spend more than on food, should be reduced to a trivial level in a nanotech world. Government too is a hard call. My libertarian bent would prefer little or none, but my guess is that there will be a substantial fraction of the population working for the government, or perhaps just on welfare, provided with food, shelter, and endless reruns. Another trend in "services" which gives me the shakes is more lawyers. The richer people get, the more legal actions they seem to be involved in.

A Rich World

Which brings me to another point. There is no reason a nanotech world should not be very rich. Again, this is in line with long-term trends. US citizens living in poverty today are (on the average) better off in some ways (square feet of living area, nutrient content of food) than the average worker in the 1930s or the current average conditions in Eastern Europe. I see food and floor space as nearly trivial cost items in a nanotech world, at least for populations within an order of magnitude of the current size. It might turn out that people work in the nanotech era because they want something to do, or are seeking status, instead of "work or starve." More and more people have been choosing what they will do with their life by criteria other than just making enough money to survive. This may represent the long-term trend.

Another long-term trend is that an ever-decreasing fraction of what we do for work is for necessities of life. Among the people I know, getting a stipend to keep them in the necessities of life would not

affect what they did very much. Would they travel more if the whole solar system was opened up? How big a job would that be with nanotech to help? And what else would be done at the same time?

My personal pet project is interstellar exploration and parties. Cryonicists may turn out to be particularly suited for this. Last summer at the Asilomar Conference I asked a room full of people how many would go on a several hundred thousand year expedition to the far side of the galaxy. About 95 percent were ready to pack up and go. Now this leads to another interesting topic: How do you do economic exchanges, even if what is being exchanged is all information on laser beams? The problem of establishing a value for something where a cycle of bargaining takes millennia is an interesting one. Perhaps short-duration personality constructs to bargain could be sent along with encrypted goods?

Next time I will tackle either children (or the equivalent), or making more land.

New Lifespan Study With Deprenyl

Saul Kent

(Reprinted from the November, 1990 Life Extension Report*)*

Today's most promising therapy in the struggle against aging is *deprenyl*. Recent studies in both animals and humans have shown that deprenyl has a variety of beneficial effects on brain aging—without producing toxic side effects. There is now evidence that deprenyl is an anti-depressant, a sex stimulant, an effective treatment for Parkinson's Disease, a promising treatment for Alzheimer's Disease, and an anti-aging therapy.

The most impressive clinical findings to date have been that deprenyl treatment slows the progression of Parkinson's Disease and extends the lifespan of Parkinson's patients. In a retrospective comparison by Birkmayer et al. in Austria, Parkinson's patients receiving *Madopar* (L-Dopa plus a decarboxylase inhibitor) and deprenyl lived an average of 15 months longer than patients receiving only Madopar (*J Neurol Transmission*, 64:113-127, 1985). When early-stage Parkinson's patients received deprenyl in a recent 800-patient study (the DATATOP Study) involving physicians throughout the U.S. and Canada (*New England Journal of Medicine*, 321:1364-1371, 1989), they were doing so much better than the controls (who received a placebo) that the scientists directing the study halted it in midstream so they could provide the control patients with the benefits of deprenyl. At the time the study was concluded—after a year of treatment—deprenyl had doubled the time (compared to the controls) before functional disability became severe enough to require L-Dopa therapy.

Preventing Parkinson's Disease

The fact that deprenyl works so well in early-stage Parkinson's patients suggests that it may help to protect the dopamine-producing neurons in the *substantia nigra* region of the brain from destruction. It is the loss of these neurons, and the concomitant decline in the production of dopamine that causes Parkinson's Disease. Several of the scientists experimenting with deprenyl are convinced that regular use of the drug prior to the onset of Parkinson's symptoms could prevent the disease entirely.

According to neurologist J. William Langston of the Institute for Medical Research in San Jose, California, who recently published the results of his own study of deprenyl (*Science*, 245:519, 1989), the evidence that deprenyl can prevent Parkinson's Disease is strong and getting stronger all the time. Dr. Langston points to three compelling findings:

1. Deprenyl is a powerful selective inhibitor of Monoamine Oxidase B (MAO-B), the specific form of the enzyme that breaks dopamine into other compounds, which are then excreted. There is a marked age-related rise in MAO levels, which leads to an increasing incidence of depression with advancing age. Deprenyl functions as an anti-depressant without causing hypertensive reactions from cheese, wine, and other foods containing the amino acid tyramine, which can occur in patients taking MAO inhibitors that block the action of MAO-A as well as MAO-B. Dr. Langston thinks the specific type of MAO inhibition caused by deprenyl may also exert a protective effect on the neurons that produce dopamine.

2. There is evidence that dopamine-producing neurons may be destroyed or made dysfunctional as a result of side effects caused by dopamine metabolism itself. Deprenyl inhibits the activity of one of the prime metabolites of dopamine called 6-OHDA (6-hydroxydopamine), which generates oxidative free radical reactions that have been shown to have neurotoxic effects on brain neurons.

3. Deprenyl protects dopaminergic neurons from environmental toxicity caused by agents such as MPTP (1-methyl-4-phenyl-a,2,3,6-tetrahydropyridine), which produced severe Parkinsonian symptoms in young people who took it as a "street drug" in the 1970s. It's been shown that toxic chemicals generated during the oxidation of MPTP destroy dopamine-producing neurons and that injections of deprenyl completely block this destructive process.

Slowing Down the Aging Process

Parkinson's Disease appears to be a form of accelerated aging caused by the action of 6-OHDA or some other neurotoxin. All old people suffer from symptoms of Parkinson's disease to varying degrees, such as loss of coordination, shuffling, and diminution of sex drive, because the exact same neurons destroyed in Parkinson's Disease are also destroyed in normal aging, but at a slower rate. In fact, it isn't until 80% of these brain cells are destroyed that we even begin to suffer the symptoms of Parkinson's Disease, which indicates that the dopamine-producing neurons in the *substantia nigra* are destroyed extensively with advancing age in all of us—a conclusion supported by brain cell counts in autopsy studies.

These findings suggest that long-term treatment with deprenyl could slow down

the aging process itself—a conclusion arrived at about 10 years ago by the Hungarian pharmacologist Joseph Knoll, who developed deprenyl in 1965. In order to test this hypothesis, Dr. Knoll conducted a study of the effects on lifespan and sexual behavior of continuous deprenyl therapy in aging rats. The reported results of this study were so remarkable that veteran life extensionists (like myself) experienced both exhiliration *and* disbelief.

In Dr. Knoll's study, 24-month old rats (about 65 years old in human terms) were given injections three times a week of 0.25 mg/kg of deprenyl, while the control animals received saline injections. These injections were continued until the animals died.

Extending Maximum Lifespan

The average lifespan in the saline-treated control group was 147 weeks, with the longest-lived rat in the group dying after 164 weeks. In contrast, the average lifespan in the deprenyl-treated group was 198 weeks, with the shortest-lived rat in this group dying after 171 weeks—7 weeks later than the longest lived animal in the control group! The longest-lived rat in the deprenyl group survived for 226 weeks, equivalent to about 150 years in humans (Figure 1). The deprenyl animals also displayed sexual rejuvenation, with sexually inactive animals being restored to the level of sexual activity of young animals.

The degree of lifespan-extension reported by Dr. Knoll is unprecendented for a clinically-available therapy. After 60 years of scientific inquiry into methods to extend lifespan, gerontologists have found only one other such method (food restriction) that can radically extend maximum lifespan in mammals and, in order to get the degree of lifespan extension claimed by Dr. Knoll, it is necessary to severely restrict food intake in rats at a very young age, with side effects such as stunted growth, seizures, and premature death.

If Dr. Knoll's findings are valid and extrapolateable, it would mean that we could live for as long as 150 years by simply taking deprenyl for the rest of our lives. Moreover, since the ability to live to 150 years would constitute a highly extraordinary extension of maximum lifespan, it would mean that deprenyl therapy slows down the aging process in dramatic fashion.

Such a demonstration of aging control would be, perhaps, the most important breakthrough in the history of medicine. It would not only mean that we could add decades of healthy life to our lifespan, but that we would know for sure that human aging control is feasible, so that the search for other methods to control aging could be done with far greater confidence. One of the first steps would be to discover the biochemical mechanism(s) by which deprenyl slows down aging, so that we can develop more effective aging control drugs.

Hard to believe? Frankly, yes. It all sounds too good to be true. I have yet to talk to anyone in the life extension community who uncritically accepts Dr. Knoll's claims, and I have spoken to several longtime aging researchers who flat out don't believe them. One scientist is highly skeptical of the reported longevity of Dr. Knoll's control animals as well as his deprenyl animals. "I've never heard of untreated rats living as long as he claims his control animals live," he said. "It makes me question the validity of the entire experiment."

Dr. Knoll's claims for lifespan extension might be dismissed out-of-hand by these scientists, if it wern't for all the other evidence suggesting that deprenyl might very well be able to slow down aging. Deprenyl is the best candidate we've ever had for an anti-aging therapy and so we have to take Dr. Knoll's claims seriously. What we're all looking for is further evidence concerning the effects of deprenyl on lifespan, so it's good to report that the results of a new study have just been published (*Life Sciences*, 47:415-420, 1990).

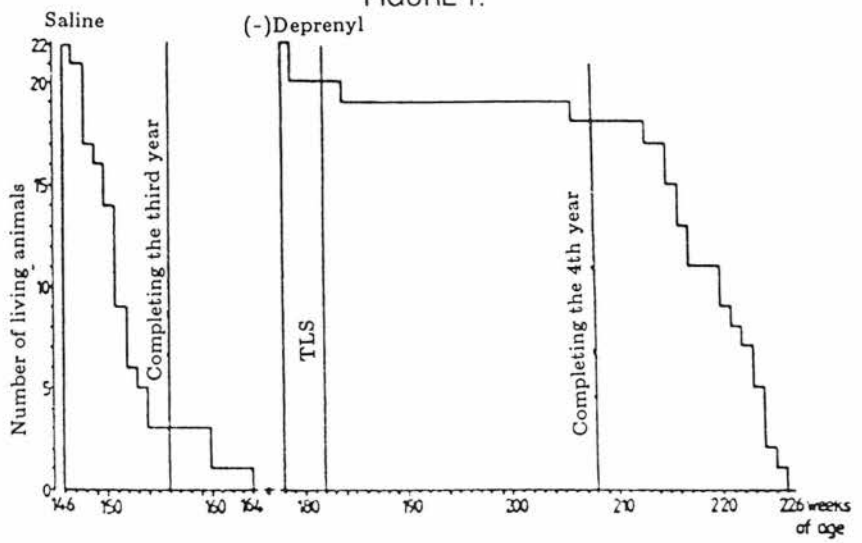
The University of Toronto Study

Scientists at the University of Toronto have tried to duplicate Dr. Knoll's results in another strain of rats. They performed two experiments with male Fischer 344 rats. In the first experiment, 62 animals, 24 to 25 months of age, were assigned to random groups, with the animals in one group receiving injections three times a week of a 0.25% solution of depreynl and others receiving saline injections. Blood samples were taken at the start of the experiment and again after three months, with a battery of tests administered to measure the effects of deprenyl on blood chemistry.

In the second experiment, the same drug dosage and route of administration was used starting at 23 to 24 months of age in 70 rats randomly assigned either to deprenyl or placebo groups. After these animals died, autopsies were performed to determine the cause of death.

The animals were weighed regularly to find out if food restriction was in any way involved in any lifespan-extending effect found in the experiment.

FIGURE 1.



The death rate of rates treated with saline (n=22) and (-) deprenyl (n=22) in Dr. Knoll's experiment.

Results of the Study

In the analysis of longevity, the animals were assigned a score equal to the number of days they survived following the start of treatment, with the data from both experiments pooled. The results included data from four deprenyl-treated animals and one saline-treated animal which were sacrificed because they had tumors.

The major finding of the study was that the deprenyl group survived significantly longer than the control group. The mean survival time of the deprenyl group was 133.7 days compared to 114.7 days in the control group. The maximum survival time (the longest-surviving 10% of the population of the deprenyl group was 248.4 days, compared to 212.1 days in the control group. The longest surviving animal in the deprenyl group lived for 315 days (beyond the start of the experiment), while the longest survivor in the control group lived for 251 days.

In the majority of cases (in the animals autopsied), death could not be attributed to any single factor. Many of the animals, for example, had tumors in addition to liver and kidney problems.

There was no difference in body weight between the two groups during the first four months of the study, and body weight decreased in both groups as the animals grew older. After the first four months of the study, however, the rats in the deprenyl group were significantly heavier than the controls. This indicates that food restriction was not responsible for the longer survival of the deprenyl group, and suggests that the deprenyl animals may have been healthier than the control animals.

The analysis of the blood chemistries of the rats suggests that deprenyl may have delayed the aging of other organs in addition to the brain. After three months, for example, the controls had significantly higher levels of BUN (blood urea nitrogen). Since elevated levels of BUN indicate renal impairment, it may be that deprenyl had a protective effect on kidney function. (The analysis of the kidneys in the autopsied animals neither confirmed nor refuted this finding.)

Comparison With Dr. Knoll's Work

The Toronto study provides further evidence that deprenyl can extend lifespan, but the results of the study show a much smaller lifespan-extending effect than in Dr. Knoll's study. Although this study reinforces the suggestion that deprenyl may slow down aging in the brain (and perhaps in other organs), it also calls into question the validity of the extreme lifespan extension reported by Dr. Knoll.

The scientists who conducted the Toronto study attribute the difference in the magnitude of their longevity effect and Dr. Knoll's to differences in the strain of rats used in the experiments. Dr. Knoll used a hybrid cross between Logan female and Wistar male rats, which had a mean lifespan in his control group of 35 months. In contrast, previous studies started at an earlier age have reported that the mean lifespan of the Fischer 344 rats used in the Toronto study is only 22 to 24 months. (The mean lifespan of the control animals in the Toronto study was 28 months.)

... the fact that there are now two published reports (by different scientists) showing that deprenyl can extend lifespan makes the case for taking deprenyl today more compelling.

According to the Toronto scientists: "The strain difference could be important for two reasons. One possibility is that many of our animals were already too old or sick for deprenyl to have had an effect. It seems unlikely, for example, that much could have been done to prolong the life of most of the animals which died within the first two months. At the start of the experiment, the body weights of some of the animals were very low, which is generally indicative of poor health and impending death. In other cases, tumorigenesis had already begun. The second reason involves the duration of deprenyl treatment. It is conceivable that the effect of deprenyl is cumulative, requiring several months of treatment before significant effects on mortality are established. This suggestion is consistent with evidence by Knoll, et al. that deprenyl increased sexual behavior maximally between the 28th and 36th week of treatment.

"There are interesting parallels between our results and results of clinical trials on patients with Parkinson's Disease. Deprenyl is less effective when treatment is started at an advanced stage of the disease. In a report by Birkmayer and Birkmayer, patients given both l-deprenyl and l-dopa survived 12% longer than patients given only l-dopa. Similarly, our old rats on l-deprenyl survived approximately 16% longer than our controls. In contrast, Tetrud and Langston studied Parkinsonian patients who had had the disease for less than five years, and found the l-deprenyl delayed the development of the disease by almost 76%. Also the rats treated with l-deprenyl in Knoll's experiment began treatment at a relatively earlier point in their lifespans than did the rats in our study, and his rats survived 210% longer than the controls. It seems verly likely, therefore, that age and physical status at the start of treatment are critical covariates in predicting the response to long-term administration of l-deprenyl."

Taking Deprenyl Today

The Toronto scientists clearly accept the validity of Dr. Knoll's findings, while other scientists remain skeptical. Although the extent of deprenyl's ability to extend lifespan will require further research, the fact that there are now two published reports (by different scientists) showing that deprenyl can extend lifespan makes the case for taking deprenyl today more compelling.

Many life extensionists are now taking deprenyl, which is sold under the trade name Eldepryl, for life extension purposes. Dr. Knoll, who is 64 years old, has been taking deprenyl himself for about two years and recommends it for everyone over the age of 45. As he points out, the brain's output of dopamine declines 13% per decade after age 45 and deprenyl is needed to protect our dopamine-producing brain cells from destruction.

Dr. Knoll recommends (based upon his research) that normal, healthy adults take one 5-mg tablet of deprenyl three times a week. Others who have been taking deprenyl believe that it is more desirable to take a 5-mg tablet of deprenyl every day (with an occasional break). It's important to note that no one—except patients with Parkinson's disease—should take more than 5-mg a day of deprenyl. There is evidence that deprenyl is less effective and can induce undesirable side effects at higher doses, but is remarkably safe and effective at low doses.

Anyone taking deprenyl (and any other life extension therapy) should be under the care of a doctor and should be tested regularly to determine any danger in their program and to attempt to assess the benefits of the program.

When Do I Buy Alcor Stock?

Ralph Whelan

On July 25 of the year 2004, you should liquidate all of your Reebok shares and buy Alcor, because that's when the cryonics movement is finally going to "take off."

That's when we'll rest. The deanimate-hard Alcor staff will get blasted on Glycerol Cocktails and climb into the Golden Dewar, the grey suits of the New Order will pour import LN_2 over our heads, and forever after, July 25—Freeze Day U.S.A.—will be honored by cryonicists the world over as the day that cryonics finally—*finally!*—took off.

But then, it doesn't need to be that bad, does it? Suppose next year, or next month, or next *week*, cryonics finally gets... the Big Fix.

(The Big Fix is a notion coined into phrasehood by Mike Darwin, in reference to the long-time dream of cryonicists that if we only froze the *right person*, the world would beat a path to our dewar.)

At last it happens: Zsa Zsa decides that soil organisms are sicko "and you *know* how I despise the heat," and two weeks later everyone in Beverly Hills is wearing "World Cryonics Team—We Play For Keeps" T-shirts, and the Alcor staffers are driving company Maseratis and brunching at Spago.

Okay, reality check: Alcor now has 218 Suspension Members, which is 18 more than we had on January 1, which was 50 more than we had on the *previous* January one, which yields a growth rate of 33% per year and a headache. Now, if we project these calculations forward one year we might come to expect 266 members by *next* January 1. Projecting for another year yields 355 by New Year's Day, 1993.

If we project like this 68 years into the future, we notice that by January 1 of 2059 we'll have signed up everybody on Earth four times. Hence, we can indeed conclude that somewhen along that timeline, cryonics finally took off.

But when?

For lack of a better gauge of Success, and in reluctance to pile my chips on the Big Fix, I've chosen a mostly-arbitrary milestone beyond which (*I* think) we can no longer refer to ourselves as pioneers of a fledgling movement. That milestone: when Alcor has ten thousand (10,000) Suspension Members.

Incidentally, employing the growth figures mentioned above, and assuming that the Big Fix stands us up, this is scheduled to happen on July 25 of the year 2004.

I hereby declare July 25 a national holiday, Freeze Day, and enjoin all readers to seize the passion and adamantly call in sick on that day. (Until it gains a bit more acceptance, that is.)

Meet me at Spago.

'Til Then

Until then, we've got some work to do. Maintaining a growth rate of 33% per year will not be easy, and may in fact not happen at all. If you flip through the pile of *Cryonics* magazines at your elbow and pull out the June, 1990 issue, you'll notice two insightful articles about membership growth, by Thomas Donaldson and Hugh Hixon. With these articles being so recent, it would be difficult and mostly inaccurate to "check" any of their projections. However, reiteration of these projections with added data may be in order, especially in lieu of the huge membership influx immediately prior to the turn of the year.

We're at a particularly healthy moment in Alcor's growth right now. The growth curve over the past couple of years has been *accelerating*. In other words, the percent by which we've been growing each year is itself increasing. Consider that in the interval between January 1, 1986 and January 1, 1987, Alcor increased its Suspension Membership 23 percent. By the beginning of 1988, it had only increased its membership a further 16 percent. By 1989, down to 14 percent, with 114 Suspension Members.

Although this isn't encouraging, it's not really the downward trend that it appears to be. Rather, it appears that 1986 was a particularly good year, followed by a couple of years of 15 percent growth—nothing to scoff at, actually.

But then things really start looking up. By January 1 of 1990, the membership had increased **32 percent**, to 150 Suspension members. A fluke? Not likely. Over the next year, membership increased again by 33 percent, beating the previous year's growth. A two-year surge? Possibly, but it isn't over yet. By the end of this year we're quite likely to have well over 300 Suspension Members. That's an increase of at least 50 percent. Thus, the change in membership is positive, and the change *in the change* in membership is positive. Net result: Alcor growth is *accelerating*.

But it can't last. In fact, I strongly suspect that 1992 will be a year of sharp *de*celeration in membership growth. But that's not as bad as it sounds. If we go into 1992 with 300 members and then cut our growth rate in half (decelerate by 50%), we'll still finish the year with 375 members. That's an increase in membership greater than the *total* membership in 1986! (By the way, if we *don't* cut the growth rate in half, we'll reach Freeze Day sometime in the year 2000!)

The Present

Right now we have 219 Suspension Members, and 219 people in the sign-up process. These figures may need a little explaining.

When the suspension minimums were raised at the beginning of this year, about 130 people rushed to beat the deadline with a sign-up initiation check. Of these 130 people, few or none have yet been approved as members. This is because the paperwork, the planning, and *the funding* take time. The growth so far this year has mainly consisted of people who were in

the mill before the rush began.

But already that's changing. The sign-up worksheets from these new folks have begun returning, and some have executed their paperwork already. Within the next few months, the membership count will expand dramatically and the In-Process count will dwindle to a more constant and manageable trickle. Then I expect that we'll see the growth rate return to a reasonable—though admirable—20 to 30 percent a year.

The similarity in figures—219 and 219—is amazing, but the similarity in location is even more so. In fact, if you look at the two accompanying maps quickly, you might easily mistake them for one another. (See page 12.)

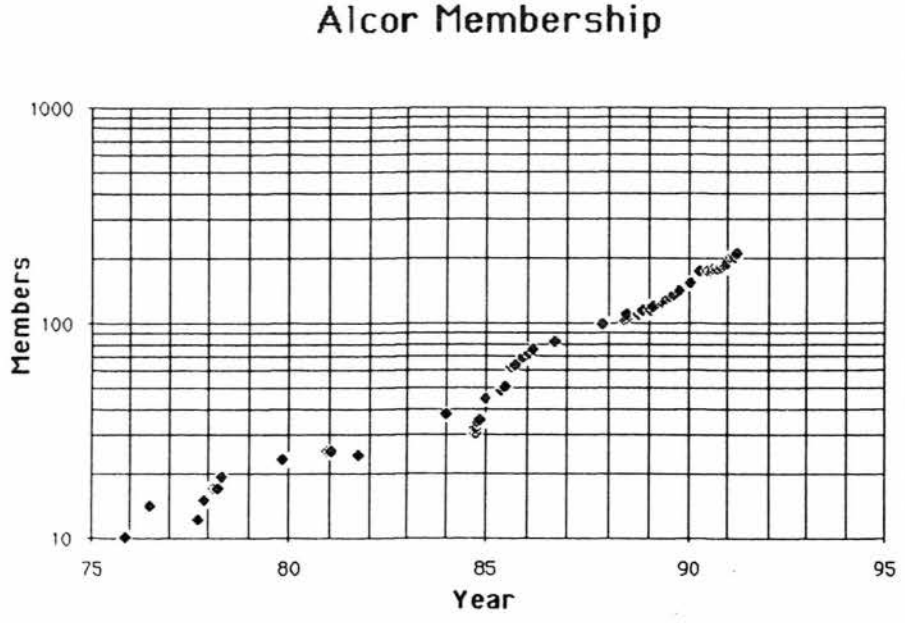
These maps drive home an important point: while press and media publicity represent a large portion of our membership increase, *the bulk of our growth is still from word of mouth.* Is it any wonder that New Hampshire, Vermont, Maine, West Virginia, Missouri, any several other states have no Suspension Members *and* no one in the sign-up process? True, these states aren't as media-oriented as, say, New York or California, but I know people in all of these states who might just be signed up right now if I were there encouraging them.

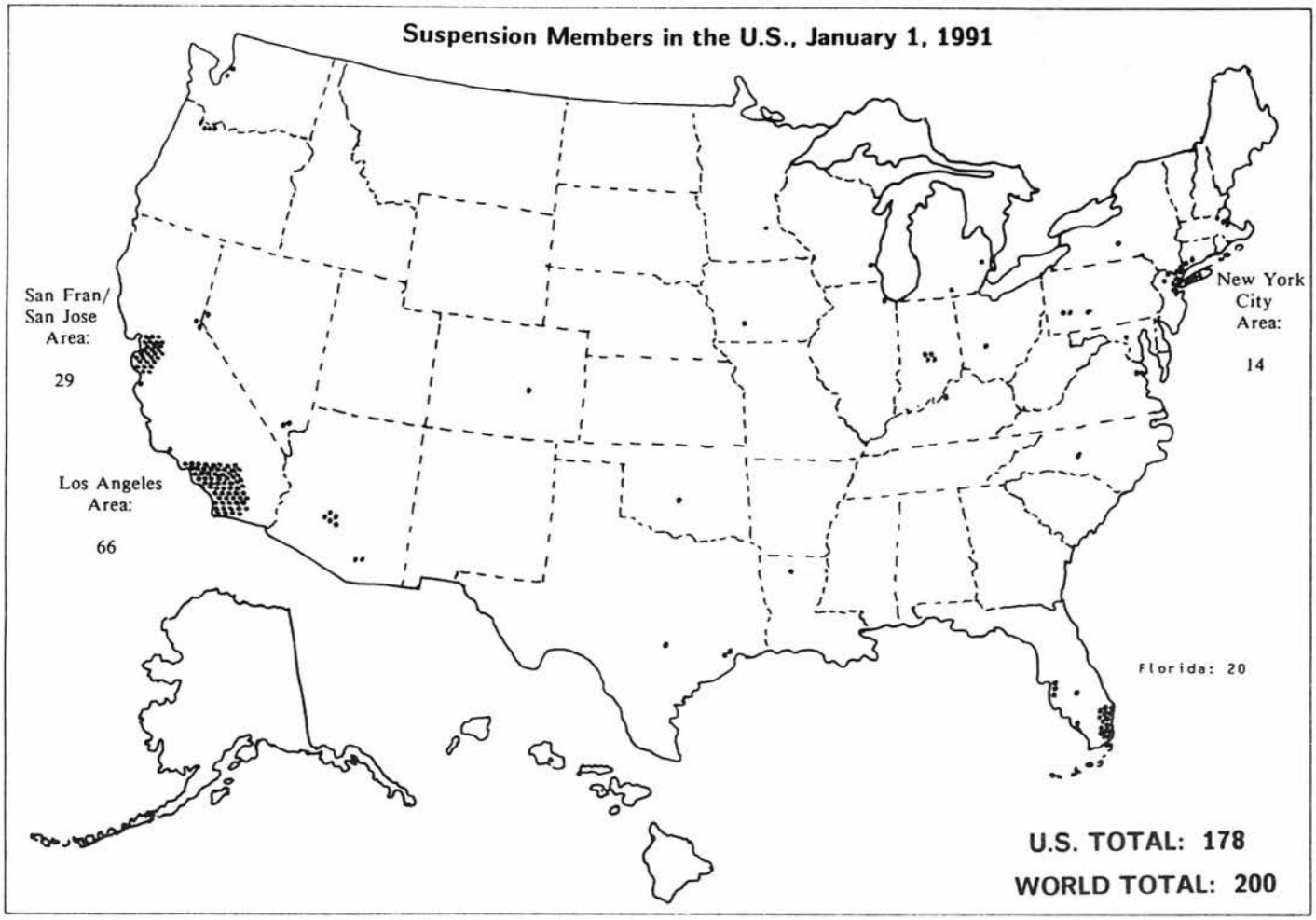
But let's not bemoan (yet) the folks who'll never hear about cryonics. Let's take these maps as proof-of-principle that this idea *can* spread, *is spreading*, and is doing so due to the membership. Spread the word! Give gift subscriptions to *Cryonics*. Bring friends to the Alcor discussion group in your area, and if there isn't one, form your own. This is the only way we'll maintain the impressive growth of this and previous years.

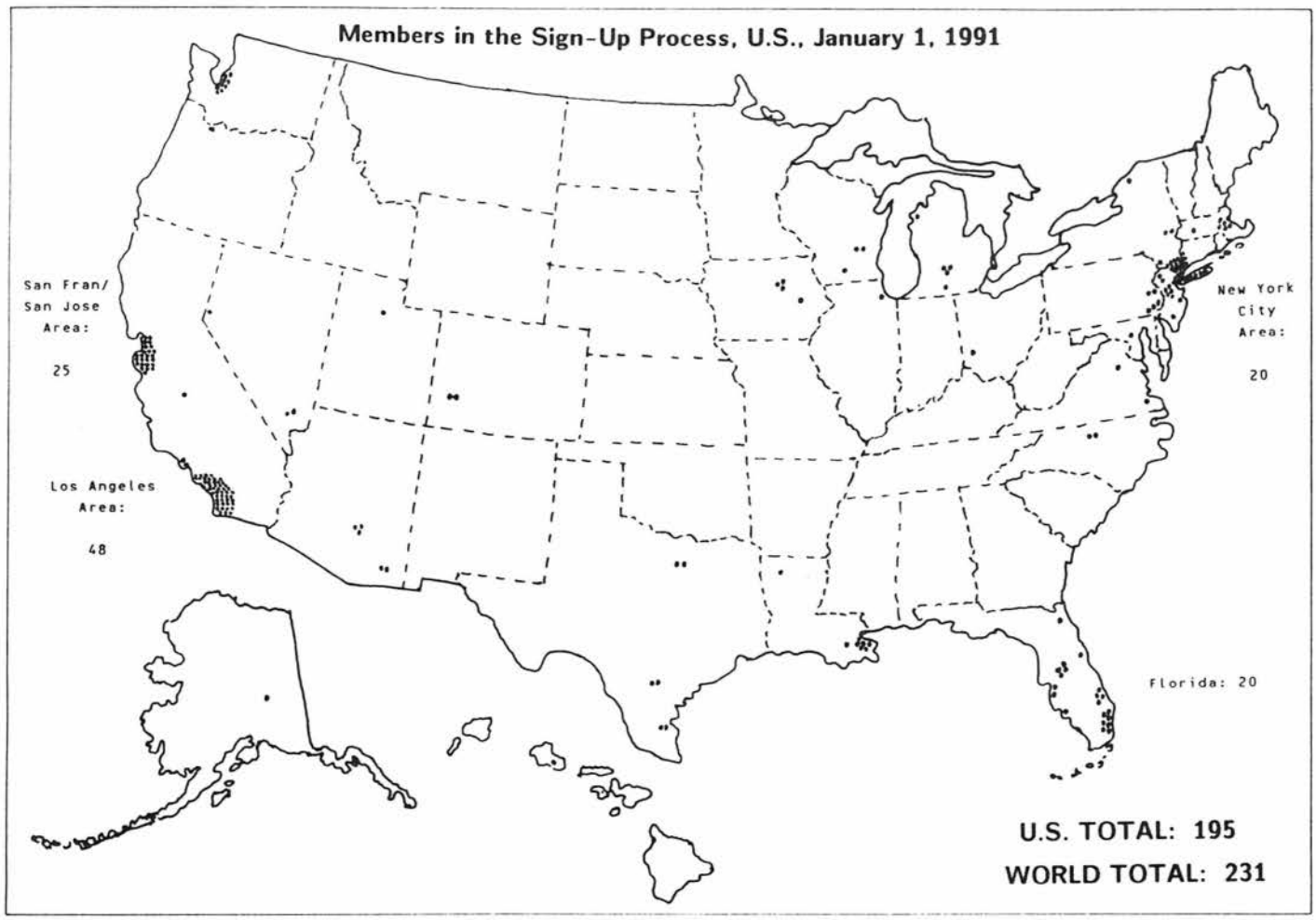
Unless we freeze Bill Cosby. . . .

The Numbers (cont'd)

These graphs are updated from the ones that accompanied articles in the June, 1990 *Cryonics* by Thomas Donaldson and Hugh Hixon on extrapolating the growth of Alcor in the future. The linear plot of Suspension Membership data gives some idea of how fast we are growing. The semilogarithmic plot of the same data is more useful for extrapolating exponential growth.




Suspension Members in the U.S., January 1, 1991
San Fran/
San Jose
Area:
29
Los Angeles
Area:
66
New York
City
Area:
14
Florida: 20
U.S. TOTAL: 178
WORLD TOTAL: 200


Members in the Sign-Up Process, U.S., January 1, 1991
San Fran/
San Jose
Area:
25
Los Angeles
Area:
48
New York
City
Area:
20
Florida: 20
U.S. TOTAL: 195
WORLD TOTAL: 231

ALCOR

LIFE EXTENSION FOUNDATION

FINANCIAL STATEMENTS

For the Twelve Months Ended December 31, 1990

A Special Supplement to CRYONICS *Magazine.*

Our financial statements for 1990 show concrete indications of Alcor's problems and accomplishments. We have achieved financial strength that is unprecedented in cryonics. In almost every area of operations there has been substantial progress. We have improved our transport capabilities with the addition of new medications, and new equipment for safe air transport of patients. Training of personnel has resulted in increased skill in every area of our operation. We have also greatly improved the safety and efficiency of cryogenic storage with the acquisition of our new four patient cryogenic dewars; we are now far and away the most efficient cryonics storage operation anywhere with whole body storage now costing less than $2.34 per day.

On the legal front, our expenditures have been high but so have the rewards; our recent victory to establish the legality of cryonics is a milestone we can be proud of. Similarly, Alcor has come into its own as a publicly perceived leader in cryonics. Media attention has been unprecedented, and overall tending towards the positive. In short it has been a year of great accomplishments.

On the downside, these numbers also cause us concern. While our revenue has been high from contributions over the past two years, this is unlikely to be sustained. Thus, we confront some hard decisions about maintaining our current level of operations.

Finally, we most urgently need to return to the program of vigorous research which caused so many to place their confidence in us in the past. With operations now on a more stable footing and the crises of the past few years receding somewhat, we need to redouble our effort, and our funding of work to develop improved, and yes, even perfected cryopreservation of the brain.

1990 has been a year of challenges well met. Let us work hard, all of us, to make 1991 a year of even greater accomplishment; one that brings us closer to the safe (and far more certain) harbor of true suspended animation.

Carlos Mondragón
President

THE BOARD OF DIRECTORS

CARLOS MONDRAGON, PRESIDENT
JERRY D. LEAF, VICE-PRESIDENT
PAUL GENTEMAN, SECRETARY
DAVID S. PIZER, TREASURER
MICHAEL G. FEDEROWICZ
HUGH L. HIXON
C. WILLIAM JAMESON
BRENDA PETERS
GLENN TUPLER

12327 DOHERTY STREET • RIVERSIDE, CALIFORNIA 92503, USA • TELEPHONE (714) 736-1703

Teri Costello
Certified Public Accountant

213-258-4193 249 N. BRAND BLVD., STE. 730, GLENDALE, CA 91203

Board of Directors
Alcor Life Extension Foundation
Riverside, California

I have compiled the accompanying balance sheet of Alcor Life Extension Foundation, a nonprofit organization, as of December 31, 1990, and the related statements of revenue, expenses and changes in fund balance and changes in financial position for the twelve months then ended, in accordance with standards established by the American Institute of Certified Public Accountants.

A compilation is limited to presenting in the form of financial statements information that is the representation of management. I have not audited or reviewed the accompanying financial statements and, accordingly, do not express an opinion or any other form of assurance on them.

Teri Costello, C.P.A.
Certified Public Accountant

February 27, 1991

ALCOR LIFE EXTENSION FOUNDATION

12327 Doherty St., Riverside, CA 92503

BALANCE SHEET
as of December 31, 1990

ASSETS

Unrestricted Assets		
Cash Accounts	$ 78,244.43	
Receivables & Advances Due	123,755.29	
Investment - DJ House	471,128.78	
Total Unrestricted Assets		673,128.50
Restricted Assets		
Research Fund	426.45	
Patient Care Fund	308,823.15	
Investment - DJ House	196,852.22	
Total Restricted Assets		506,101.82
Fixed Assets Less Depreciation		218,068.71
TOTAL ASSETS		**$ 1,397,299.03**

LIABILITIES/FUND BALANCES

Liabilities		
Payroll Taxes Payable	850.57	
Accrued Expenses	10,696.23	
Leases Payable	17,362.50	
Mortgage - House	158,623.37	
Total Liabilities		187,532.67
Fund Balances		
Prior Year Accumulation	932,255.52	
Current Year Increase	277,510.84	
Total Fund Balances		1,209,766.36
TOTAL LIABILITIES & FUND BALANCES		**$ 1,397,299.03**

See Accompanying Balance Sheet For Individual Account Detail

See Accountant's Compilation Report
and Notes to Financial Statement

ALCOR LIFE EXTENSION FOUNDATION

12327 Doherty St., Riverside, CA 92503

STATEMENT OF REVENUE, EXPENSES, AND CHANGES IN FUND BALANCE

For the Year Ended December 31, 1990

REVENUES

Restricted Donations	$ 264,125.00	
Unrestricted Donations	640,430.96	
Program Income	13,571.29	
Dues & Other Income	89,670.79	
TOTAL REVENUES		1,007,798.04

EXPENSES

Administrative Expenses	237,190.61	
Legal Expenses	132,683.52	
Jones Endowment Expenses	225,963.63	
Research Expenses	7,779.53	
Emergency Response Expenses	6,475.29	
Patient Care Expenses	77,113.93	
Program Expenses	43,080.69	
TOTAL EXPENSES		730,287.20
EXCESS OF REVENUES OVER EXPENSES		**277,510.84**
Fund Balance, Beginning of Year		**932,255.52**
Fund Balance, End of Year		**1,209,766.36**

See Accompanying Statement of Revenue & Expenses For Individual Account Detail

See Accountant's Compilation Report and Notes to Financial Statement

ALCOR LIFE EXTENSION FOUNDATION
12327 Doherty St., Riverside, CA 92503

STATEMENT OF CHANGES IN FINANCIAL POSITION

For the Year Ended December 31, 1990

Financial resources were provided by		
Excess of revenues over expenses	$	277,510.84
Add - expenses not requiring current outlay of working capital - depreciation		13,598.00
Symbex partnership loss		1,225.00
Working capital provided by operations		292,333.84
Leases payable acquired		22,330.20
Total resources provided		314,664.04
Financial resources were used for		
Acquisition of property, plant and equipment		123,446.76
Reduction of long-term debt (mortgage & leases payable)		5,535.24
Total resources used		128,982.00
Increase in working capital		**185,682.04**
Changes in working capital were represented by		
Increase (decrease) in current assets -		
Cash		175,532.04
Accounts receivable		9,380.70
Prepaid Interest		5,694.08
Other		788.44
(Increase) decrease in current liabilities -		
Payroll taxes payable and accrued expenses		(5,713.22)
Increase in working capital		**185,682.04**

See Accountant's Compilation Report
and Notes to Financial Statement

ALCOR LIFE EXTENSION FOUNDATION
12327 DOHERTY STREET
RIVERSIDE, CA 92503

BALANCE SHEET
as of December 31, 1990

ASSETS		
UNRESTRICTED ASSETS		
CASH - OPER CHKG ACCT	13,991.79	
PETTY CASH	250.00	
ACCOUNTS RECEIVABLE	13,910.70	
EMPLOYEE ADVANCES	1,614.85	
DUE FROM OTHERS	3,664.69	
INVESTMENT - PERRIS BLDG	2,018.75	
PROPERTY & EQUIP - ADMIN	48,665.73	
ACCUM DEPR - EQUIP -ADMIN	(18,134.00)	
TOTAL UNRESTRICTED ASSETS	65,982.51	
JONES ENDOWMENT FUND		
J HANCOCK CASH MGMT TRUST	39,318.04	
J HANCOCK US GVT SEC	24,684.60	
DUE FROM 1ST PACIFIC BANK	96,852.22	
INVESTMENT DJ HOUSE	471,128.78	
TOTAL JONES ENDOWMENT FND	631,983.64	
TOTAL UNRESTRICTED ASSETS & JONES ENDOWMENT FUND		697,966.15

ALCOR LIFE EXTENSION FOUNDATION
12327 DOHERTY STREET
RIVERSIDE, CA, 92503

BALANCE SHEET
as of December 31, 1990

RESTRICTED ASSETS			
RESEARCH FUND			
SAVINGS - BENHAM	426.45		
TOTAL RESEARCH FUND	426.45		
PATIENT CARE FUND			
SAVINGS - PACIFIC HORIZON	3,941.44		
CERT OF DEP - WELLS FARGO	100,000.00		
SAVINGS - BENHAM	171,763.71		
INVESTMENT IN SYMBEX	33,118.00		
INVESTMENT DJ HOUSE	196,852.22		
PROPERTY & EQUIP-RESEARCH	189,820.63		
ACCUM DEPR-EQUIP-RESEARCH	(20,219.99)		
L.H. IMPROVEMENTS-PATIENT	19,655.34		
ACCUM DEPREC-L.H.-PATIENT	(1,719.00)		
TOTAL PATIENT CARE FUND	693,212.35		
TOTAL RESTRICTED ASSETS		693,638.80	
OTHER ASSETS			
PREPAID INTEREST	5,694.08		
TOTAL ASSETS			1,397,299.03

Unaudited
See Accountants' Compilation Report
and Notes to Financial Statements

ALCOR LIFE EXTENSION FOUNDATION
12327 DOHERTY STREET
RIVERSIDE, CA, 92503

BALANCE SHEET
as of December 31, 1990

LIABILITIES/FUND BALANCES			
CURRENT LIABILITIES			
PAYROLL TAXES PAYABLE	850.57		
ACCRUED EXPENSES	10,696.23		
LEASE PAYABLE - BELL	2,990.40		
LEASE PAYABLE - CITICORP	2,671.80		
TOTAL CURRENT LIABILITIES		17,209.00	
NON CURRENT LIABILITIES			
LEASE PAYABLE - BELL	3,239.60		
LEASE PAYABLE - CITICORP	8,460.70		
TOTAL NON CUR LIABILITIES		11,700.30	
OTHER LIABILITIES			
MORTGAGE - HOUSE	158,623.37		
TOTAL OTHER LIABILITIES		158,623.37	
TOTAL LIABILITIES		187,532.67	
FUND BALANCES			
PRIOR YEAR ACCUMULATION	932,255.52		
CURRENT YEAR INCREASE	277,510.84		
TOTAL FUND BALANCES		1,209,766.36	
TOTAL LIABILITIES & FUND BALANCES			1,397,299.03

ALCOR LIFE EXTENSION FOUNDATION
12327 DOHERTY STREET
RIVERSIDE, CA 92503

STATEMENT OF REVENUE & EXPENSES
For the 12 months ended December 31, 1990

REVENUES			
RESTRICTED DONATIONS			
LEGAL DEFENSE	225.00		
TKD DONATIONS	27,276.00		
MISCELLANEOUS DIRECTED	14,267.75		
PATIENT CARE	221,000.00		
RESEARCH	728.75		
STAFFING DONATIONS	627.50		
TOTAL RESTRICTED DONATIONS		264,125.00	
UNRESTRICTED DONATIONS			
R. JONES ENDOWMENT	627,558.11		
UNRESTRICTED DONATIONS	12,872.85		
TOTAL UNRESTRICTED DONATIONS		640,430.96	
TOTAL DONATIONS		904,555.96	
PROGRAM INCOME			
LITERATURE SALES	6,399.16		
SUBSCRIPTION SALES	7,172.13		
TOTAL PROGRAM INCOME		13,571.29	
OTHER INCOME			
INTEREST INC - JONES	5,986.16		
INTEREST INC - PATIENT	16,830.59		
MEMBERSHIP DUES	34,597.75		
MEMBERSHIP INITIATION FEE	28,667.00		
COMPANION ANIMAL REVENUE	5,425.00		
MISCELLANEOUS INCOME	2,626.52		
INVESTMENTS GAIN/LOSS	(4,462.23)		
TOTAL OTHER INCOME		89,670.79	
TOTAL REVENUES			1,007,798.04

x

Unaudited
See Accountants' Compilation Report
and Notes to Financial Statements

ALCOR LIFE EXTENSION FOUNDATION
12327 DOHERTY STREET
RIVERSIDE, CA 92503

STATEMENT OF REVENUE & EXPENSES
For the 12 months ended December 31, 1990

EXPENSES		
EXPENSES - ADMINISTRATIVE		
ADVERTISING	150.00	
AUTO EXPENSES	337.21	
BANK CHARGES	413.15	
COMPUTER EXPENSES	293.00	
CREDIT CARD DISCOUNTS	100.00	
DEPRECIATION	6,557.00	
DUES & SUBSCRIPTIONS	146.20	
INSURANCE	4,240.19	
INTEREST EXPENSE	1,585.77	
MISCELLANEOUS	2,831.29	
OFFICE EQUIP - RENTALS	335.12	
OFFICE EXPENSES	10,775.29	
OUTSIDE SERVICES	3,620.20	
PAYROLL SERVICE	969.50	
PROFESSIONAL FEES	13,877.65	
PROMOTION	1,790.14	
POSTAGE	10,450.73	
REFUNDS	549.28	
RENT	14,032.60	
REPAIRS & MAINT - EQUIP	4,327.49	
REPAIRS & MAINT -FACILITY	4,770.40	
SALARIES	110,925.04	
SHIPPING	3,556.78	
SIGN-UP EXPENSES	5,442.81	
SUBSCRIPTS & MEMBERSHIPS	158.35	
TAXES - PAYROLL	9,704.83	
TAXES & LICENSES - OTHER	1,423.13	
TELEPHONE	17,028.78	
TRAVEL	2,749.41	
UTILITIES	4,049.27	
TOTAL ADMIN EXPENSES		237,190.61

ALCOR LIFE EXTENSION FOUNDATION
12327 DOHERTY STREET
RIVERSIDE, CA 92503

STATEMENT OF REVENUE & EXPENSES
For the 12 months ended December 31, 1990

LEGAL EXPENSES		
LEGAL - GENERAL	66,224.14	
LEGAL - BUILDING	1,187.50	
LEGAL - D. KENT & RELATED	42,659.09	
LEGAL - THOMAS DONALDSON	22,612.79	
TOTAL LEGAL EXPENSES		132,683.52
JONES ENDOWMENT EXPENSES		
HOUSE EXPENSES	29,798.15	
LEGAL EXPENSES	196,165.48	
TOTAL JONES EXPENSES		225,963.63
RESEARCH EXPENSES		
COMPANION ANIMAL SUS/EXP	741.83	
OTHER RESEARCH EXPENSES	5,358.92	
REPAIRS & MAINTENANCE	1,678.78	
TOTAL RESEARCH EXPENSES		7,779.53
EMERGENCY RESPONSE EXPNS		
AMBULANCE OPERATING COST	301.71	
EMERGENCY RESPONSE SYSTEM	6,173.58	
TOTAL EMERG RESPNS EXPNSE		6,475.29

Unaudited
See Accountants' Compilation Report
and Notes to Financial Statements

ALCOR LIFE EXTENSION FOUNDATION
12327 DOHERTY STREET
RIVERSIDE, CA 92503

STATEMENT OF REVENUE & EXPENSES
For the 12 months ended December 31, 1990

PATIENT CARE EXPENSES			
SUSPENS EXP A1242	15,154.33		
SUSPENS EXP A1049	13,787.33		
SUSPENS EXP A1239	14,743.57		
SUSPENS EXP A1268	534.82		
DEPRECIATION	7,041.00		
LIQUID NITROGEN	14,294.95		
MISCELLANEOUS EXPENSES	924.88		
OUTSIDE SERVICES	2,556.28		
PATIENT CARE BAY - R&M	204.92		
SUPPLIES - MEDICAL	6,153.57		
SUPPLIES - OTHER	1,718.28		
TOTAL PATIENT CARE EXPNSE		77,113.93	
PROGRAM EXPENSES			
EDUCATIONAL LITERATURE	28,860.87		
EDUC PROGRAMS/EVENTS	3,546.53		
MAGAZINE EXPENSES	10,673.29		
TOTAL PROGRAM EXPENSES		43,080.69	
TOTAL EXPENSES			730,287.20
NET INCOME			277,510.84

ALCOR LIFE EXTENSION FOUNDATION
NOTES TO FINANCIAL STATEMENTS
February 27, 1991

NOTE A - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The financial statements have been prepared on the accrual basis of accounting in accordance with the recommendations of the American Institute of Certified Public Accountants. The significant accounting policies followed are described below:

Investments

Donated investments are reflected as contributions at their market values at date of receipt. Bequest of Dick Jones' residence on June 20, 1989, was recorded at a fair market value of $650,000 per an outside, independent appraisal. A new roof was added to the house in 1989, at a cost of $17,981. The balance sheet reflects $196,852.22 of the total cost of $667,981.00 as restricted, in keeping with management's intention to use all assets received for the purpose for which they were contributed. An Agreement of Sale dated November 13, 1990 has been entered into by Alcor with Christopher and Gail Ashworth for the sale of the residence. The sale is to close on November 13, 1991, or upon the close of sale of buyers home, whichever comes first. Pending close of sale, buyers are to make all payments due with respect to the first mortgage and real estate taxes due on the Jones' residence on or after December 1, 1990. (See NOTE E.)

Investment in Symbex consists of the capital account balance in a real estate limited partnership as of December 31, 1990. (See NOTE F, RELATED PARTY TRANSACTIONS).

Fixed Assets

Leasehold Improvements and Property & Equipment are depreciated over their estimated useful lives using the straight-line method. The following lives are used:

Leasehold Improvements	40 Years
Property & Equipment - Admin	5 Years
Property & Equipment - Research	20 Years

Restricted Funds

Within current funds, funds restricted by outside sources or by the Board of Directors are so indicated and are segregated from the operating fund. Those funds may be used only in accordance with the purposes established for them as contrasted with the operating fund over which the Directors retain full control to use for the general operation of the organization.

ALCOR LIFE EXTENSION FOUNDATION
NOTES TO FINANCIAL STATEMENTS
February 27, 1991

NOTE B - NATURE OF THE ORGANIZATION

Alcor Life Extension Foundation is a nonprofit California corporation, organized in 1972 to perform research and public education. The organization is recognized as a charitable entity under Section 501(c)3 of the Internal Revenue Code.

The organization's research program concentrates on improving methods of cryonic suspension. Suspension members understand that cryonics offers no guarantees of success and that as present or future suspension patients, they are subjects of a long-term research program.

The Board of Directors and management employees of the organization acknowledge that, to the best of their ability, all assets received have been used for the purpose for which they were contributed, or have been accumulated to allow management to conduct the operations of the organization as effectively and efficiently as possible.

NOTE C - PROGRAM SERVICES

In addition to its research endeavors, Alcor provides an extensive package of information, free of charge, to the general public upon request. This package includes an 84-page booklet, and a catalog of other educational books, papers and materials available from Alcor at cost.

The organization reprints dozens of papers and articles which range in subject matter from highly technical and scientific to sociological and philosophical, all pertinent to issues of health and life extension, and maintains a unique library of books and periodicals relevant to its members' interests in all aspects of life extension.

Alcor publishes an award winning monthly magazine which has over 700 subscribers, including several major libraries. It is the only publication of its kind, providing scientific, sociological and economic news bearing on life extension.

The Alcor Speaker's Bureau provides informative presentations to schools, other nonprofit organizations, companies and government agencies about Alcor's programs and the current technical and scientific bases for predicting the health care and medicine of the future.

ALCOR LIFE EXTENSION FOUNDATION
NOTES TO FINANCIAL STATEMENTS
February 27, 1991

NOTE D - LEASE COMMITMENTS

Capital lease obligations, secured by office equipment

	1991 Maturity
Capital lease obligation, monthly payments of 249.20. Matures January, 1993.	2,990.40
Capital lease obligation, monthly payments of 222.65. Matures February, 1995.	2,671.80

NOTE E - LONG-TERM DEBT

Long-term debt consists of the mortgage secured by the Dick Jones residence bequeathed to Alcor on June 20, 1989. (See NOTE A: Investments)

NOTE F - RELATED PARTY TRANSACTIONS

Alcor is a limited partner in Symbex Property Group, from which Alcor leases its operating facility for $463 per month.

NOTE G - EXTRAORDINARY ITEMS

Legal Expenses regarding the Jones' endowment on the statement of revenue and expenses, represents an unusual and nonrecurring expense incurred and paid in 1990 settling a dispute over a charitable bequest.

NOTE H - UNCERTAINTIES

The amount of $96,852.22 in Due from 1st Pacific Bank represents monies deposited with the First Pacific Bank & Trust of Nauru in May of 1988. A judgment has been entered against the principal of that institution. Upon collection of that judgement, it is expected that approximately 50% of this receivable will be recovered.

Reducing Ischemic Damage in Cryonic Suspension Patients by Premedication

Mike Darwin

> ***Caution***
>
> Do not undertake any program of vitamin supplimentation, including this one, without first consulting with your personal physician.

The Problem of Ischemic Injury

Those of us who have been on Alcor Transports know well the agony of watching a patient experience one or even two or three or four hours of deep shock (incomplete ischemia), and often, added minutes of complete ischemia (cardiac arrest) while the nurse or physician take their sweet time about pronouncing legal death, or the coroner is called for a release number.

There is no doubt that these periods of ischemia injure the patient. Alcor's own experience has documented that the longer the ischemic interval the patient experiences, the greater the edema (swelling due to fluid accumulation) in the brain and other body organs as a result of injury to the capillaries. Other indicators of injury such as the release of tissue-specific enzymes (a sensitive indicator of cell destruction or damage) also correlate well with pre-deanimation ischemia.

Ischemic injury also causes greatly reduced blood flow to the brain upon the reinstitution of circulation. In the rabbit, blood flow to the brain is virtually at zero during subsequent CPR if the ischemic interval has been more than seven minutes in duration before CPR was started(1).

However, it is important to realize that the complete ischemia a patient experiences *after* heartbeat and breathing cease, but before legal death is pronounced is only part of the picture. Often the patient has been in deep shock for hours before legal death occurred. Shock is just another word for incomplete ischemia. Shock is also very damaging.

Since we are currently constrained by law to wait until the patient has experienced cardiac and respiratory arrest, there is little we can do to prevent the patient from experiencing the periods of partial and complete ischemia that are part and parcel of deanimation. For the time being at least, we are constrained to stand by and wait.

Intervening

But not to stand by idly. A growing body of research indicates that there are simple, powerful, and legal steps which the patient and/or his/her family can take to minimize the damage that will result from pre-transport ischemia. And, just as important, these are interventions which even those of us who are *not* yet imminently terminal can probably benefit from as well.

Free radicals are a major cause of ischemic injury. Free radicals are highly reactive bits of matter which combine in destructive ways with the molecules that make up our cells and tissues. Often the initial chemical reaction a free radical causes results in a chain of secondary reactions which cause far greater damage. Free radicals have been implicated as causative or contributory to a wide range of human diseases including cancer, cataracts, smoking-related diseases, heart disease, arthritis, and even the aging process itself.

Perhaps in no disease do free radicals have a clearer or more central role than they do in the pathology of ischemic injury. Much of the damage that results from shock or complete ischemia results from secondary free radical injury.

That's the bad news. The good news is that relatively simple interventions in the form of nutritional supplements can greatly reduce this damage. Supplementation of the diet with vitamin E can completely protect mammals against the injury resulting from short periods of cerebral ischemia (2) and/or greatly reduce the damage from prolonged periods of ischemia (3,4,5) or subarachnoid hemorrhrage(6). The literature is also rich with papers documenting the protective effects of vitamin E (or analogs) on other organ systems following prolonged periods of ischemia such as the heart (7) the lung (8) and the limbs (9). An excellent review paper which should be reasonably accessible to the layman is *Brain Injury After Ischemia and Trauma. The Role of Vitamin E*, S. Yoshida, *Ann N.Y, Acad. Sci.*, **570**, 219-36 (1989).

Nutritional Prophylaxis

After a careful review of the literature we have developed a preliminary pre-treatment protocol for terminally ill cryonic suspension patients. This protocol can be implemented weeks or months prior to deanimation and can be carried out under the supervision of the attending physician. All of the agents in the protocol are available over the counter (i.e., without a prescription) in health food stores, grocery stores, or pharamacies in the United States.

Ther objective of the protocol is to provide free radical protection to the brain and other body organs during the deanimation process and the ischemic interval that occurs between the time heartbeat and breathing cease and cryonics procedures

effective at reversing ischemia begin.

The keystone of this program is oral vitamin E supplementation. Early in the illness when food intake is normal or near normal, ordinary vitamin E in either oil form or (preferably) dry form as d-alpha tocopherol succinate should be taken in the amount of 40O I.U. to 800 I.U. per day in divided doses with the fattiest two meals of the day. As the illness progresses, this dose can be increased to up to 5,000 I.U. per day in two divided doses. In order to facilitate absorption of the vitamin E and provide omega-3 fatty acids, a dose of 1000 mg of flaxseed oil should be taken with each dose of vitamin E. The flaxseed oil should contain as a minimum 570 mg of omega-3 alpha linolenic acid, 160 mg omega-6 linoleic acid, and 180 mg oleic acid. Use only flaxseed oil stored under refrigeration and with vitamin E and beta carotene as preservatives (one such product is *Spectrum Naturals* Flaxseed Oil Capsules).

Antioxidant nutrient supplementation offers the possibility of substantial protection against ischemic injury for terminally ill cryonic suspension patients as well as for healthy individuals.

When nutritional status deteriorates (food intake becomes erratic or impossible) or if absorbition of fats and fat-soluble compounds (like vitamin E) is or becomes problematic (perhaps due to cystic fibrosis, biliary atresia, AIDS, or liver or bowel cancer), vitamin E supplementation should be in the form of *micellized vitamin E.* Two such products are currently on the market. One is called Mycelized Vitamin E and is manufactured by Metagenics of San Clemente, CA. The other is Liqui-E manufactured by Twinlab of Ronkonkomo, N.Y. We have evaluated both products and feel that the Metagenics Mycel-E is the better of the two, although the Liqui-E is more pleasant tasting. Micellized vitamin E (Mycel-E) is absorbed 480% more than standard vitamin E oil preparations (9) and should be used when there is any doubt about absorption. Keep in mind that even in healthy individuals some researchers believe that only about 25% of a given oral dose is actually absorbed (10,11).

Vitamin E supplementation should be continued as long as possible.

It is important to point out that supplementation with vitamin E (particularly the higher doses) should be cleared with the treating physician. In diseases such as cancer there is often a risk of bleeding as a result of tumor erosion of mucous membranes in the gut, lung, esophagus or elsewhere. Also, in liver disease (primary or secondary) the risk of bleeding is greatly increased. Vitamin E may increase or precipitate such bleeding since it has anticoagulent activity. In cases where bleeding is already present, lower doses, in the 200 IU to 400 IU range are probably all that will be tolerable. If the treating physician is supportive of the patient's wishes and Vitamin E potentiated bleeding is determined to be a risk, Vitamin K may be prescribed to counter this. Vitamin K is cheap, readily available, and has no side effects. The usual dose is 1 mg per day. Vitamin K in this dose is a prescription item, although 200 mcg. tablets are available at health food stores without a prescription.

Another antioxidant nutrient which is essential for Vitamin E to do its work optimally is selenium. We are suggesting 400 *micro*grams per day of selenium taken in two divided doses. Selenium taken at this dosage for short periods of time (i.e., weeks to months) has no known serious adverse side effects.

Vitamin C may also be taken. However, its utility will likely be limited due to the inability of the patient to maintain adequate fluid intake in the final days of the illness. Adequate fluid intake is critical to safe use of high-dose vitamin C since kidney and bladder stone formation or the precipitation of irritating vitamin C crystals in the urinary tract is a very real possibility in dehydrated patients. It is suggested that vitamic C be consumed in an amount of three grams per day, preferably as sodium ascorbate (unless sodium intake is restricted) in three divided doses. Vitamin C intake must be carefully evaluated in light of gastrointestinal status and should be withdrawn at any sign of GI discomfort. Similarly, Vitamin C administration should cease when the urine output drops below one liter per day, when fluid intake ceases, or if urinary tract irritation develops.

Finally, it is suggested that 50 mg of beta carotene be taken as well. Much like vitamin E, beta carotene is a fat-soluble antioxidant with no known side effects. The beta carotene should be taken as a single dose at same time as the vitamin E dose, and with the fattiest meal of the day.

Other Alternatives

If the treating physician is especially supportive of the patient's wishes, there are a variety of other therapeutic modalities which can be considered on a case by case basis. The use of dihydroergotoxine mesylate (Hydergine)(12), phenytonin (Dilantin)(13) and several other FDA-approved medications as cerebroprotectives during ischemia is suggested by the literature. Dosing schedules for these drugs can be discussed on a physician to physician basis (i.e., Alcor's medical director and the treating physician) when the situation warrants it.

Everyone Can Benefit

Terminally ill members aren't the only ones who can benefit from antioxidant nutrient supplementation. While the very high doses suggested for use with deanimating members in this article are not appropriate for daily use by healthy people, even very modest doses of Vitamin E have shown powerful protective effects against brain injury from cerebral hemorrhage (14), spinal cord trauma (15) and cerebral ischemia (16). Consider the work of Upjohn Senior Research Scientist Edward D. Hall, Ph.D. Dr. Hall has found that very modest increases in dietary Vitamin E intake provide profound protection. The following is a quote taken from a letter by Dr. Hall to the Editor of *Free Radical Biology and Medicine*, 4, 135-36 (1988):

Approximately a year ago (Fall, 1986) we noted the rather sudden occurence of a problem in our cats which we had been using from a purpose-bred supplier. After more than a year of using their cats successfully, we found that we were no longer able to replicate the typical ischemic pathophysiology in our central nervous system (CNS) trauma and subarachnoid hemmorrhage (SAH) models (ie., control experiments). Since the lack of response of these animals to our traumatic or hemorrhagic insults was reminiscent of our vitamin E series, we became suspicious that possibly the more recently ob-

tained animals had been inadvertantly treated with antioxidants. We contacted the supplier and explained our problems and suspicion. They were reasonably cooperative and tracked down the fact that their cat food supplier had several months before naively increased the vitamin E content of their product from 26-30 I.U. per pound to 60-70 I.U. per pound. Through careful examination of the cats in which we began seeing the mysterious protection, we were able to deduce that they had been given the vitamin E supplemented food for approximately 16 weeks before we received them.

In that we were able to document reasonably precisely the extent and duration of Vitamin E supplementation, we have published a recent paper showing that this approximately twofold increase in dietary vitamin E for 16 weeks completely attenuated the normal acute SAH-induced cerebral hypoperfusion (14). In the same experiments, the usual post-SAH rise intracranial pressure was also significantly reduced in comparison to an earlier set of experiments.

In addition to the protection seen in the SAH studies, we also observed a significant reduction in progressive cerebral hypoperfusion following a five minute period of near complete global brain ischemia. Moreover, in still another project in our laboratory, we discovered that two-fold vitamin E supplemented cats were significantly more resistant to the behavioral and neurochemical (brain dopamine depletion) effects of the Parkinsonian neurotoxin MPTP.

While much work needs to be carried out to define the optimal level and necessary duration of vitamin E dosing to obtain a cerebroprotective effect, everyone in our Unit associated with these studies has begun their own program of vitamin E supplementation. Our results would suggest that the 3-5 fold vitamin E supplementation advocated by Diplock (17) might confer protection against both acute and chronic cerebral tissue damage.

The work of these investigators indicates that modest supplementation with 200 to 400 I.U. of vitamin E per day should provide substantial protection to the healthy individual with little or no risk of side effects. Aside from the benefits outlined here, vitamin E supplementation in the 200 to 400 I.U, per day range is likely to have so many potential benefits it would take another article (and perhaps several) just to catalog them all. Suffice it to say that purchasing and *religiously* taking a vitamin E supplement may be one of the best investments of time and money you can make; particularly if you have the misfortune of deanimating with little warning, or suffer a head injury or a stroke.

Conclusion

Antioxidant nutrient supplementation offers the possibility of substantial protection against ischemic injury for terminally ill cryonic suspension patients as well as for healthy individuals. The protocol of ischemia prophylaxis for terminally ill suspension members described in this article should be undertaken with the prior knowledge of Alcor and only under the supervision and guidance of the patient's treating physician.

References

(1) Lee, S.K., et al., *Effect of Cardiac Arrest Time On Cortical Cerebral Blood Flow During Standard External Cardiopulmonary Resuscitation in Rabbits, Resuscitation,* **(17)2**, 105-17 (1989).

(2)Hara, H., Kato, H., Kogure, K., *Protective Effect of Alpha-tocopherol on Ischemic Neuronal Damage in the Gerbil Hippocampus, Brain Res.*: 1990, 10(2):335-8.

(3) Amagasa, M., Mizoi, K., Ogawa, A., Yoshimoto, T., *Actions of Brain Protecting Substances Against Both Oxygen and Glucose Deprivation in Guinea Pig Hippocampal Neurons Studied In Vitro. Brain Res.*, 1989, 504(1):87-93.

(4) Fujimoto, S., Mizio, K., Yoshimoto, T., Suzuki, J., *The Protective Effect of Vitamin E on Cerebral Ischemia. Sur. Neurol.* 1984 22(5): 449-54.

(5) Busto, R. Yoshida, S., Ginsberg, M.D., Alonso, O., Smith, D.W., Goldberg, W.J., *Regional Blood Flow in Compression Induced Brain edema in Rats: Effect of Dietary Vitamin E. Ann. Neurol.* 1984, 15(5):441-8.

(6) Travis, M.A. and Hall, E.D., *The effects of chronic two-fold dietary vitamin E supplimentation on subarachnoid hemorrhage-induced brain hypoperfusion, Brain res.*, 418:366-379 (1987).

(7) Mickle, D.A.G., et al., *Myocardial Salvage With Trolox and Ascorbic Acid for an Actue Evolving Infarction. Ann. Thorac. Surg.* 1989, 43: 553-557.

(8) Wolf, H.R., Seeger, H.W., *Experimental and Clinical Results in Shock Lung Treatment with Vitamin E. Ann. N.Y. Acad. Sci.* 1982, 393:392-410.

(9) Ikezawa, T., *An Experimental Study of Tissue Injury Associated With Reperfusion in Ischemic Limbs. Nippon Geka Gakkai Zasshi.* 1989 90(10): 1999-805.

(10) Jennings, J.W., *Vitamins in Endocrine Metabolism*, Charles Thomas, Springfield, IL, pp. 39-58 (1970).

(11) Klatskin, G., et al., *The Chemical Determination of Tocopherols in Feces and the Fecal Excretion of Tocopherol in Man. J. Lab. Clin. Med.*, 39: 802-814, 1952.

(12) Kelleher, J., et al., *The Absorption of Tocopherol in Man, Br. J. Nutr.*, 24: 1033-1047, 1950.

(13) Izumiyama, K., Kogure, K., *Effect of Dihydroergotoxine mesylate (Hydergine) on Delayed Neuronal Death in the Gerbil Hippocampus. Acta Neurol. Scand.*, 1988: 78: 214-220.

(14) Aldrete, J.A., et al., *Effect of Pretreatment With Thiopental and Phenytonin on Post-ischemic Brain Damage in Rabbits. Critical Care Medicine*, 7(10): 466-70, 1979.

(15) Anderson, D.K. and Means, E.D., *Free radical induced lipid peroxidation in spinal cord: FeCL2 induction and protection with antioxidants, Neurochem. Pathol.*, 1:249-264 (1983).

(16) Hall, E.D., *Mechanisms of post-traumatic, post-hemorrhagic, and post-ischemic CNS hypoperfusion.* Presentation at the 4th World Congress on the Microcirculation, Tokyo, Japan, July, 1987.

(17) Diplock, A.T., *Dietary supplimentation with anti-oxidants. Is there a case for exceeding the recommended dietary allowance?, Free Rad. Biol. Med.*, 3:199-201 1987.

Great Mambo Chicken And The Transhuman Condition

by Ed Regis. Addison Wesley, 1990, $18.95.

Review by Thomas Donaldson

Of course I had heard a good deal about this book before I even looked in it. The consensus, such as it was, about Regis and his book (which I now baptize "GMCTC" for short) seemed to be that he had discussed, fairly, all the far out ideas of this period. And Keith Henson did indeed appear and reappear constantly throughout the book, in one role or another. Some people were even suggesting that we put it on our cryonics reading list.

Well. Now that I've read it I have something to say about that. It was *not* a book friendly to cryonics. It is not even a book friendly to new ideas. Its main tone for cryonics, Lagrangian colonies, private space travel, the anthropic cosmological principle ... is always "Gee, guys, look at all these weirdos!" Instead of an exposition of ideas he offers only a parade of clowns. The entire book aims to put down everyone it touches.

I don't mean to say that he is anywhere incorrect. His technique is far more sly and wounding. No, the way to put down cryonics (together with all those other ideas) isn't to say anything false at all, but instead to describe, whenever possible, the most foolish ideas and acts of their adherents. And every set of ideas, anywhere, will have proponents committing foolish acts, somewhere. Especially if we look for them.

John Stuart Mill wrote once that an idea could never be truly refuted by refutation of its weakest form and proponent, but only by refutation of its strongest and best. Regis must have been listening, ready to make use of Mill in his own way. For instance, we do not hear of any serious arguments for privatization of space flight. Instead we get Truax sending Evel Knievel over a canyon. We do not get any serious discussion of cryonics. Instead we get Keith Henson and the Far Edge Party (and Committee to plan it). Or Moravec desperately wanting to be a robot, up/downloading *in only 50 years*. And so on and on.

The closest Regis comes to discussion is a label: "end of the century hubris." The Greeks used the word "hubris" to describe someone who offended the Gods by trying to equal them. It was not a term of praise. Those afflicted with hubris inevitably came to bad ends. What is an example of such "end of the century hubris"? Why, Tsiolkovsky, who actually imagined space travel in the 19th century! What a ridiculous weirdo Tsiolkovsky was!

In fact, GMCTC seems to me one of the most acid attacks on cryonics yet written, and the concept of actually *recommending* this book a potential disaster. Who wants to join a Parade of Clowns? The book is an example of prolonged and systematic use of sly putdowns against uncomfortable ideas. He's saying only a complete weirdo would think *that*. I can't say it's a *new* technique; we've all experienced it before. An entire book devoted to the technique, though, has some novelty value if nothing else. Of course it's hard for us to see, so he's taken many of us in with his technique. *We* don't think of ourselves as Clowns. Descriptions of us: the frazzled hair, the painted face, the red bulbous nose, seem entirely accurate, and the quotations too. Where is the clown in this fine portrait he draws?

His repeated repetition of hubris, hubris, hubris may actually tell us something important about why so few people accept cryonics. For Regis (or the Greeks) hubris is fundamentally *wrong*. We are not supposed to have those ambitions or think those thoughts, which belong only to the Gods. His "hubris" includes much more than just thoughts about death; rearranging the Solar System is equally out of the question. I don't know, right now, how to deal with this feeling. My best current suggestion is to confront it directly: to ask *why* should these thoughts be hubris? If it's not hubris to strive for cure of any single disease, then why should hubris arise if we strive for anything deeper? Certainly we may not now see the consequences of the changes we want. If we aim to achieve immortality we must also aim to understand it. Given those two linked aims, how could we come to harm?

Of all people Edward Regis would be the last to want a systematic discussion of hubris, whether cryonicists have hubris, and what results our supposed hubris may bring. Without writing another book on the subject, I will say that Tsiolkovsky showed great vision, which is to see what is possible and aim for it. Sure, we must always put up with the imperfection of reality: The spacecraft are never quite so good as we imagine them, nor will our "immortality" ever quite be immortality in the strict logical sense. But to see and strive for great aims comes from what is best in us as human beings. "Weirdos," of course, are so because they don't conform, which goes with the vision and striving.

As for the Gods and the Universe, they will always keep their immensity no matter what we do. And if, in the end, we *can* control the entire Universe, that control will only come because we have found many deeper and farther Universes which dwarf us as much as our current Universe does now.

Not An Apology, But An Explanation:

A Response to Criticisms of a Critical Review

John La Valley

In the August, '90 issue of *Cryonics* there appeared an article, written by myself, which harshly and swiftly criticized the book *Are You A Transhuman?*, by FM 2030. In subsequent issues were an apology from the editor, Mike Darwin, and letters from Dave Pizer, Steve Bridge, and Max More criticizing the manner and specifics (or lack of specifics) in which I presented my review. I believe that some of their remarks are unjustified. Please allow me to answer them here.

Though I have met him but once, I believe Mr. Pizer to be a very gentle and kind person. The television commercials he made for his seat cover business in Arizona impressed me with those qualities as the commercials were presented in a warm and humorous manner. When I met him at an Alcor meeting, his conversation and composure confirmed my estimate of him.

With that in mind, Mr. Pizer's objection, "If you can't say something nice about someone, don't say anything at all," is understandable.

I respectfully disagree. There are certain times when one must say things about another that aren't nice. Better, perhaps, if you can't say something honest about someone, then say nothing.

Steve Bridge and Max More both have raised other objections to my article. I do not mean to ignore Mr. Bridge, but his comments were covered in greater detail by Mr. More, so I will deal with them as read by Mr. More.

More's objections were, in essence as follows:

1. My use of profane words in print. (Bridge and Pizer shared this objection.)

2. My seemingly offhand comparison of *Transhuman* with *Mein Kampf* (and, by extension, of FM-2030 and Hitler).

3. That I make no mention of the positive aspects of 2030's book, such as his approval of cryonics, technology, or optimism.

4. My lack of depth in detailing why I objected to certain parts of the book.

5. The fact that *Cryonics* editor, Mike Darwin, allowed the article to be printed in its straight and un-bowdlerized form.

The last point was also raised by Bridge and Pizer, so I'll deal with it and the first item at length later in this article.

My comparing *Transhuman* to *Mein Kampf* was not as unwarranted as More asserts. I admit, however, that I should have clarified just why I compared them.

This is why. While the two books are vastly different in form, scope and specific intention (not to mention size), they have, in my opinion, three overpowering similarities. First, both show an inordinate obsession with symbolism, on the part of the authors, to the point where the symbols seem more important than the reality they represent. One need only read 2030's arguments for changes to the everyday language to observe this. Second, both books express the author's view of what is wrong with the world and what should be done to change it. Lastly, they both contain a plethora of ideas which, empowered and put into action, could have devastating results.

In fact, one of them did. My comparison did not "undermine the gravity" of the evils of the Third Reich and the Holocaust, but was a warning—an outcry to not let it happen again. To be sure, 2030's ideas are unlikely to cause any real harm. The political and social conditions in this country and the world are not conducive to such radical movements.

But even this is not certain. There is, in America, a growing social climate of collectivism which is slowly acquiring the sanction of law. The ruling making bartenders and party hosts legally responsible for the behavior of drunks in many states provides just one example. In a society where it is becoming required to be one another's keeper, how much would it take for an inspired, charismatic speaker with a blueprint for actually doing it to win popular support?

It is difficult to criticize a written work without implying some criticism of the author as well, especially when the work is a piece of non-fiction. That is certainly true in this case and I stand behind it. More describes 2030 as a "deeply humane man, concerned with the improvement and transformation of the human condition." Is he really? Is the man who recommends the forced alteration of predatory animal diets, while ignoring the obvious ecological consequences, humane? Is one who advocates the *forced* changing of cryonics patients in suspension to fit his Brave New World concerned with *improving* the human condition? No, I say unequivocally, he is not!

More believes 2030 to be opposed to violence. I'm sure that 2030 is, in fact, opposed to the more obvious forms of violence such as murder, war, rape, and so on. But were some of his ideas realized, 2030 would cause violence of a different sort. Hitler murdered people by gunfire and gas. 2030 would murder by altering the minds of others without their knowledge and consent.

Even if 2030 were correct—that is to say, if all of his ideas were for the betterment of humanity, individuals must still be allowed to make their own conscious and informed choices as to whether or not to conform. We *must* be free to be wrong. If not, there is only tyranny and slavery. No sir. That's not the future that myself and others are trying to live for.

In all fairness, I must say that I do not believe FM-2030 is a villain at heart. The concern he expresses for animals and the future of mankind is genuine. His heart is in the right place.

But his mind, at times, is not. And that, folks, is the crux of the biscuit. In order to be truly benign, one must have at least some objective understanding of the way the world actually works, both in terms of natural laws and understanding human motivations—the drives and abilities that define our individual character and compel us to action. One must not only have this understanding, one must have the courage to use it and allow the world to work.

More's third and fourth objections to my article were that I did nothing to cover

the positive aspects of 2030's book, and that I failed to explain, in depth, reasons for my responses to some of 2030's specifics. These I'll discuss together because they have something in common—they struck home squarely. I am guilty as charged on both counts.

FM 2030 certainly does speak strongly in favor of cryonics, longevity, high technology, space travel, and optimism in general. His disparagement of honorific titles and national boundaries goes to extremes, in my opinion, but there are rational bases for both.

I wrote the review just after reading the book and being overwhelmed by what I thought (and still think) was a gross imbalance between its positive and negative aspects. I therefore concentrated on the bad at the expense of the good. I offer this as a reason for my omission, but not as an excuse.

My report also drew considerable fire for not going in depth in my specific criticisms. Direct hit here too. As I wrote my responses, I felt that they were self-evident to the extent that I did explain them (and to an extent, I still do. When the emperor is naked, it should be pretty obvious). If this is so, it remains that deeper explanations are due out of common respect for the intelligence of the reader and a respect for the possibility, however remote, that the author of the work in question may be right.

For the sake of brevity in this article, I will not attempt to cover all the items of contention in my earlier one. If readers wish me to do so, please let me know via a letter to the editor of *Cryonics* or send a letter to me at the address I'll provide. If there is sufficient interest I'll respond in later issues.

It is in these last two of More's objections that I concede the error of my ways. They give me much to think about.

There is something else, however. Before I submitted my review to *Cryonics*, I handed a copy to Mr. More and asked his opinion (this was at the International Space Development Conference in Anaheim). I don't recall precisely what he said, but it was a short statement to the effect that he did not entirely agree. I was partly involved in one of the many fascinating discussions which took place in the Alcor suite so I neglected to ask him for more information, which in itself is my fault.

But the tone of his letter to the editor of the October *Cryonics* indicates that he felt as strongly about my review as I felt about the book I was reviewing! More is not a shy or timid man by any means. He is intelligent and well-spoken. Knowing this, I cannot help but wonder why he didn't tell me what his disagreements were before I sent the article in. I would not have changed the review's vitriolic manner or deleted my expletive (which I'm getting to, soon) but I would have taken the time to write a deeper and more evenhanded paper. Perhaps Mr. More finds that the rewards for being critical are greater when there is an audience to appreciate it.

The Case for Profanity

If the reader is absolutely certain that there is no legitimate place for profanity in language—spoken or printed, then this argument will fall on deaf ears. If one will, for a few moments, entertain the possibility, then please allow my attempt at persuasion.

When steam engines were first built, the boilers which provided the steam pressure to drive them often exploded due to extreme pressures in the boiler chamber. The results were a combination of destroyed or derailed trains, sunken ships, and many terrible deaths. With the addition of relief valves to boiler systems, accidents dropped sharply.

So it is with humans. The occasional, physically inert release of anger, not just privately, but publicly as well, serves to reduce the chance of a truly dangerous incident. It also serves to remind the individual and those around him that there is something causing the anger.

It is here that the analogy ends. Because while the regular popping of the steam valve comforts the engineer with the knowledge that the valve is working properly and the boiler is safe, regular and frequent public use of profane words only serves to alienate the speaker from others. It also strips the words of their value as an emotional release.

But is there any reason for it then?

Some anthropologists suspect that the observed behavior, in great apes, of throwing feces is one of the apes' expressions of irritation. Some visitors to zoos have had first-hand evidence of this as they became the targets of an old gorilla's predigested missiles.

In sanitary human environs, however, there isn't any excrement handy, so we invented words to substitute for it. One of the most frequently used is, in fact, a monosyllable meaning "excrement." It is sometimes prefixed with a word describing animals, such as horses, cattle, dogs, and the occasional bat.

There is, I believe, a legitimate use of profanity in writing. In fiction it is fairly obvious. My first science fiction story to be published has a scene in it wherein a pilot of a surface-to-orbit craft sees a large flying creature get sucked into one of the plane's ramjet engines. As engineers will tell you, this can be exciting to watch. The pilot's words, before he dies, are not "Oh, darn."

In nonfiction writing such as letters and essays, the case is not so clear, I'll admit. In my opinion, the obscenity used should match the obscenity of whatever the writer is reacting to. It does not render the reviewer's opinion any greater degree of truth, but it does convey to the reader, in short order, the degree to which the writer is affected by what he is discussing.

The statement, by 2030, which drew my apocalyptic response, was in essence this: Economic competition is bad because there is "no best anything." This seriously undermines the notion not only of free competition in the marketplace of ideas, but in the marketplace of products of those ideas as well. These free marketplaces are, to me, one of the central pillars of civilization. I thought that 2030's statement was the most bilious in the whole book.

So I threw dung at it. I do not apologize for this as I believe that it was appropriate. Perhaps there would have been less reaction if I'd explained. Perhaps not.

Sometimes a writer will replace key letters in an objectionable word with hyphens. The words "p----d" and "bull---t" appear in Bridge's and More's letters, respectively. In this manner one can convey to the reader the precise word and its meaning while still being able to say "I didn't actually write anything nasty."

Although writing expletives that way is common practice, it is, in my opinion, unprofessional. It is like throwing feces while trying to pretend not to. One should not have to write "under one's breath" when addressing an enlightened readership.

If it will put the reader's mind at some ease, please understand that I do not use vulgar words gratuitously when I write or speak. As I've expressed above, it robs the words of value.

If my argument fails to persuade, there is one more thing I ask one to consider: Just how important is it to stridently react to the isolated verbal profanity?

In my travels I've seen things that truly frighten me. There is ignorance,

sloth, unreasoning fear, collectivism, tyranny, stupidity, illiteracy, hatred of science, and religious fanaticism, all on rampant increase in this country. These are the big guns we're up against, folks. To the cryonics community especially, these are great dangers.

In light of all this, I wonder what sort of personality is so deeply lanced by something so small as an expletive as to become equally vulgar in reacting to it.

And here is the equal vulgarity I'm referring to. All of the letters responding to my article contained statements criticizing the editor, Mike Darwin, for not at least removing the offending remark(s) from my letter before printing it.

I have never heard a supporter of cryonics agree with censorship. Indeed, I have heard much of the opposite sentiment expressed at Alcor meetings. Now, when Mr. Darwin dared to exercise his prerogative to not censor the article, he was chastened with puritan self-righteousness. Is freedom of the press okay, but not in our neighborhood?

In the remarks I've just made is, of course, an implicit criticism of Mr. Darwin himself for apologizing for the above mentioned decision. I have the highest regard for Mr. Darwin as he has stood up to a hail of public criticism. He is no stranger to controversy, as we all know. I suspect that he may have apologized to preserve solidarity in the ranks of cryonics supporters.

On the other hand, he probably does believe it to have been wrong to publish the paper in its raw form. I go on record here as being in disagreement with him, but I respect the integrity of his decision.

If there remain readers who are strongly offended by my use of a profane word in my earlier article or my subsequent defense of it in this one, I have a suggestion. Send a SASE and a small note reminding me of its purpose, to the address below:

John LaValley
19548 E. Cypress #49
Covina, CA 91724

I'll put it on file in my records and cover any increase in postage (there's bound to be at least one). The next time I submit something to cryonics with any offending remark in it (unlikely, but remotely possible), I'll return an appropriate warning. At which point, of course, you'll need to send another envelope for the file.

Of course, it would be a lot easier to simply boycott my writing, but please don't punish the magazine or its editors for keeping the marketplace of ideas open.

Thank you for your attention,
John LaValley

Proposal For A Lower-Cost Freezing Option

Mike Perry

Recently there has been some rather heated debate in the pages of *Cryonics* over whether the cost of the neuro (head-only) option should be increased. Thus I am aware that any proposal for a *decrease* in suspension cost, if it involves neuro, is likely to stir up this controversy again. It is not my intention or desire to cause any further bad feeling over this, but still I think we should rationally explore any possible alternatives for lower cost suspension. After all it is the cost of cryonic suspension that often inhibits people from signing up and also helps fuel criticism, particularly among uninformed, prejudiced people who see us as offering a bizarre form of entombment "for a substantial price."

The rationale for the proposal I would like to make is mainly to be found on pages 35-36 of the August, 1990 *Cryonics*, in Mike Darwin's article "The Cost of Cryonics." Two estimates are given for the longterm cost of storing neuropatients, (1) in an XLC-1520 container, as is now being done, and (2) in a Bigfoot dewar, which ought to be possible soon. The estimates come out to $15,076 and $6,600 (actually, $6,608), respectively. The comment is made that "using Bigfoot would result in a 56% reduction in costs for storing neuropatients." This of course affects only the cost of longterm storage and not other factors contributing to the cost of a neurosuspension. However the dollar reduction from this one change would be $8,468. In a Bigfoot dewar loaded to capacity with four whole-body patients, on the other hand, I understand there would be space in the center to store five neuropatients. This sort of storage option ought to be feasible soon; we now have seven whole body patients and are constructing aluminum boxes so that four of them can be packed into one Bigfoot.

So, my proposal is to charge $8,000 *less* for a neuropatient stored in a Bigfoot dewar, compared to the cost for storage in the XLC-1520. At our current rates this would amount to $33,000 rather than $41,000. This form of storage will (currently at least) involve some tradeoff since vault protection will no longer be available, so that charging less might be considered a moral obligation anyway, until vault protection becomes available for Bigfoots. The quality and procedures of the suspension would not be affected, of course. One suggestion I've had is that this low-cost option be made available for financial hardship cases only, in view of the other difficulties associated with lowering prices. Anyway, I hope it is given due consideration.

Alcor U.K. Facility In Jeopardy

Due to changes in government regulations in Britain affecting his business, Alan Sinclair, the underwriter of the Alcor U.K. facility, may well be forced to lease or liquidate the building wherein the cryonics facility is housed. Currently there is about $100,000 of outstanding debt owed on this building. The building was appraised at £205,000 (about $410,000 U.S.) on September 18th, 1990. Thus, the remaining balance to secure free and clear ownership is less than 1/4th of the total current value.

In order to help redress this situation, Alcor is willing to allow members to prepay towards their suspensions by the purchase of building shares. In other words, Alcor is willing to accept building shares in the Alcor U.K. facility as a suspension prepayment. Alternatively, individuals may wish to contact Mr. Sinclair directly for information about his situation and how they might be able to participate.

The Alcor U.K. facility building is brand new and it houses a state-of-the-art cryonics facility: the only one in Europe, or anywhere at all outside of the U.S.!

We are very distressed at the thought that this facility might close after the countless hundreds of hours of labor and tens of thousands of pounds invested in equipping it and preparing the U.K. staff to use it.

Anyone in the U.S. or Canada interested in more information about how they can help in this situation should contact Carlos Mondragón or Mike Darwin at (800) 367-2228. Those in the U.K. or Europe should contact Alan Sinclair at:

Alan Sinclair
"The Thatched Cottage"
Wannock
Nr. Polegate
EAST SUSSEX BN26 5NX
ENGLAND
Phone: 03212-8150
Fax: 03212-6050

If you can help in any way, please do not delay!

Long-Sought Blood Substitute Moves A Step Closer

With so many exciting developments going on in the biotechnology arena, the news that a blood substitute was a little closer to clinical approval wouldn't normally merit coverage in *Cryonics*. But this one is different.

This is so because a major stumbling block to animal research at Alcor is the availability of blood. In order to do the large animal work we need to undertake we have to use a bleeder animal: This effectively doubles our costs for animals (which are already *very* high). There are also "mismatches" which occur from time to time that can cost us a costly experiment. The availability of a cost effective and reliable blood substitute would be a big help here as well.

On 25 February the FDA approved Biopure Corporation of Boston, MA to begin its first clinical trials of a blood substitute that contains hemoglobin from cows. For many years researchers have wanted to use hemoglobin in its free form (outside of red cells) for carrying oxygen in blood substitutes. The problem has always been that the hemoglobin is rapidly cleared from the circulation by the kidneys. This is unfortunate because free hemoglobin makes a wonderful oxygen carrier; it is much more efficient at delivering oxygen and removing carbon dioxide from the tissues than are intact red blood cells.

Free hemoglobin has another highly desirable property with direct application to cryonics research: its ability to carry oxygen into tissues that are swollen or have otherwise compromised circulation, areas where red cells would be unable to travel due to narrowing of the capillaries or "stickiness" of the capillaries or red cells due to chemicals released as a result of tissue injury.

Biopure claims to have solved this problem by linking the hemoglobin into long changes or "polymerizing" it, much the way plastics are made. These long chains of hemoglobin cannot leak out of the capillaries and, even more importantly, they cannot be filtered out by the kidney—so they stay where they belong—in the blood circulation doing the job they are supposed to do.

The new product is called *Hemopure* and will tested under the auspices of the likely licensee, Upjohn, Co. of Kalamazoo, MI. Phase I clinical trials are already underway at Bronson Hospital in Kalamazoo and, if all goes well, Phase II trials (involving real use of the product) will be started in a few months.

Leaving aside the benefits to cryonics of such a product, there is also the very substantial benefit that will result to trauma victims, surgical patients, and those with rare blood types. Obviously one major advantage is that Hemopure is virtually free of the disease transmission risks normally associated with blood transfusions.

Suspensions In Michigan?

On 22 December, 1990 Freia Hindal, a 97-year-old Norwegian woman died of pneumonia in Oslo, Norway. Her son, Svein Hindal had read Ettinger's *The Prospect of Immortality* in 1964 and decided that he wanted his mother placed into cryonic suspension.

Initially Mr. Hindal tried to persuade the hospital to carry out suspension procedures; not surprisingly they refused and thought him possibly mad. Over the next two days Mr. Hindal managed to contact local medical and mortuary personnel (including former Norwegian Trygve Bauge who had recently had his gradfather placed into suspension from Norway) more sympathetic to his request. After four days at approximately 2C Mrs. Hindal was transferred to a local mortuary facility where she was cooled to -20C. After approximately four days at -20C Mrs. Hindal was further cooled to -70C using dry ice. Two months later she was transported from Norway to the facilities of the Cryonics Institute in Detroit, Michigan.

The arrival of Mrs. Hindal in Detroit brings the total of CI patients to three, with another two possibly on the way. According to Mr. Bauge, who provided much of the information for this article, CI is

negotiating with a European family for long-term care of one of their loved ones.

It is also being reported that a long-time CI member in his early 60's is very near deanimation from lung cancer and will soon be placed into suspension by CI. Disclosure of the identity of the individual is not possible due to a wish by the family for privacy.

The Cryonics Institute facility

Alcor Patient In Jeopardy

Mike Perry and Mike Darwin

The sister of a patient placed into cryonic suspension by Alcor during May of 1990 has filed suit against her brother-in-law, the patient's husband, in Santa Barbara, petitioning the court to terminate her sister's cryonic suspension and give her a "Christian burial." The petition was filed in Superior Court, Santa Barbara, California, Feb. 13, 1991. Here we quote this petition in full, except that the case number citations and names are changed to honor the defendant's wish for privacy.

SUPERIOR COURT OF THE STATE OF CALIFORNIA, FOR THE COUNTY OF SANTA BARBARA

VALERY MARION, Plaintiff, vs. HARRISON B. ACKERMAN, Defendant.

Case No. 000000

Petition for order directing interment of remains. [Health and Safety Code Section 7105]

Plaintiff alleges as follows:

1. Plaintiff is the sister of CAROLYN LUCY ACKERMAN, Deceased.

2. Said CAROLYN LUCY ACKERMAN died on May 9, 1990 at Santa Barbara, California. At the time of her death, Decedent was a resident of Santa Barbara County.

3. Defendant HARRISON B. ACKERMAN is the surviving spouse of said Decedent and, pursuant to California Health and Safety Code Section 7100, is the person with the right to control the disposition of the remains of said Decedent.

4. Since the date of death of said Decedent, on May 9, 1990, Defendant ACKERMAN has failed, refused and neglected to inter the remains of said Decedent in a manner recognized by the laws of the State of California, and in the manner directed by said Defendant.

5. Plaintiff is informed and believes and thereon alleges that Defendant ACKERMAN has caused the remains of said Decedent to be cryonically suspended and delivered into the possession of the ALCOR FOUNDATION in Riverside County, California, in violation of Health and Safety Code Section 7054. Plaintiff is informed and believes and alleges thereon that the remains of said Decedent were removed from the County of Santa Barbara without a Burial Permit, Removal Permit or Permit for Disposition of Human Remains, in violation of Health and Safety Code Section 7055.

6. Prior to the death of said Decedent, said Decedent directed that her remains be buried, specifically at the Santa Barbara Cemetery, where the remains of her parents are buried.

7. At all times, Defendant was aware of said directions given by Decedent prior to her death.

8. Prior to her death, and on or about March 21, 1986, said Decedent executed a Will which contains the following provision in its third paragraph: "I direct that I be given a Christian Burial. I do not wish to be cremated or frozen following my death." A copy of said Will is attached hereto as Exhibit "A" and incorporated herein by this reference as though set out in full. The original of said Will, has not, as of the date of filing this Petition, been located. A Petition has been filed in the Santa Barbara Superior Court, under case number XXXXXX, to probate said Will as a lost Will. Said proceedings are pending in the Santa Barbara Superior Court. Defendant ACKERMAN has objected to the probate of said Will.

9. Defendant ACKERMAN has omitted to perform his duty to inter the remains of said Decedent within a reasonable time, in violation of Section 7103.

10. Pursuant to Health and Safety Code Section 7103, Plaintiff is entitled to treble the expenses incurred by her in bringing this section to enforce the duty of defendant ACKERMAN to inter the remains of said Decedent.

WHEREFORE, Plaintiff prays:

1. That the Court make an Order directing and requiring Defendant ACKERMAN to forthwith inter the remains of said Decedent by burial at the Santa Barbara Cemetery in accordance with the expressed wishes of said Decedent;

2. That Plaintiff be awarded all expenses, including court costs and attorney's fees, incurred by her in bringing this action to require Defendant ACKERMAN to perform his legal duty to inter the remains of said Decedent; and

3. For such other and further relief and orders as the Court deems just and proper.

Date: 9/4/1990 VALERY MARION, Petitioner

Date: 2/11/91 JOHN G. FLINT, Attorney for Petitioner

It is unfortunate that Mrs. Ackerman left instructions in writing that she be buried and not frozen at her clinical death. However, there is good reason, in this case, to doubt that this was really her wish at the time of her death, although we must limit comment here in view of the pending litigation. The Will referred to, however, is also highly questionable. No copy of the original exists. Most provisions are invalid because of changes in Mrs. Ackerman's estate plan subsequent to filing the Will. We understand she made no attempt to execute a new Will allowing for these changes, and she destroyed (she thought) every copy of the old one. (The one photocopy that survived was obtained from an attorney, after her deanimation, by her sister.)

The Will left a substantial portion of Mrs. Ackerman's estate to her sister; subsequently she transferred almost all of this property to her husband's name by executing a joint tenancy with rights of survivorship; another clear indication of changed intent. In general, people we have talked to who are familiar with the legal issues in this case rate Mrs. Ackerman's chances at reasonably good for staying in suspension, though this outcome is by no means certain.

There is an interesting irony in this, that relates to terminology. Jesus Christ, in whose honor the term "Christian burial" (along with everything else "Christian") was coined, encouraged raising the dead (Matthew 10:8) not burying them (Matthew 8:22; Luke 9:60), at least for his own followers. If cryonics is valid, the kind of action contemplated above is not "Christian" but a pure and simple act of killing someone.

It will be noted that the plaintiff alleges that her sister's cryonic suspension was illegal because no disposition permit was obtained from the California Department of Health Services. Currently Alcor is involved in a lawsuit with the Department of Health Services to obtain the right to obtain such a permit, along with the right to practice cryonics in the State of California. Recently Alcor won a sweeping victory legalizing cryonics and allowing the necessary permits, but the DHS filed a notice of appeal. Pending the outcome of this action, Alcor and other cryonics organizations in California are being allowed to practice without harassment or imputations of illegality, regardless of the normal requirements for permits.

This patient's suspension was initiated by her husband and it must be emphasized here that she was not an Alcor member at the time of her deanimation (although both she and her husband were in the early stages of signing up and both had visited Alcor's facilities). It should also be noted that Alcor is not a party to this action and hopefully will not become so. We had no knowledge of the existence of the Will in question and initiated the suspension under the authority of the patient's next-of-kin, in this case her husband, against whom the current litigation is directed.

This case should further underscore the importance of making preparations for cryonic suspension *personally* and in advance of need. We understand that one of the arguments the sister's attorneys attempted to make while deposing the patient's physicians was that she was *not competent* and was unduly influenced by her husband. This is particularly ludicrous in view of the fact that the patient was not only ambulatory but was shopping and carrying out her household duties right up to the time she developed sudden lung problems and deanimated.

It is unlikely this litigation would even have been brought, and almost certain it would have had no chance of success had it been, if only this patient had made the proper arrangements in advance.

New Paperwork—No Foolin'!

Mike Darwin

By the time you read this, 1 April will have probably come and gone. But just in case a miracle occurs and you do get this on 1 April, we want you to know that this is not a dirty trick: The new Alcor paperwork is ready.

This project has taken months of time and effort on the part of many, many people. Chief amongst them has been Steve Bridge, Frank Rothacker, myself, and Carlos Mondragón. A lion's share of the credit (or blame) must go to Steve Bridge who pulled it all together at the end, just as he has done during several major revisions before. We also want to thank Frank Rothacker for his insightful comments (which caused a truly agonizing last-minute near complete re-write). We're quite confident Frank won't be happy with the results, and we want to make very clear that he is in no way responsible for what we did with his many useful suggestions; but we want to thank him anyway!

Now, as to the meat of the matter: Two documents were radically overhauled and two brand-new ones were created. First the simplest of the two: The Consent. The **Consent** has increased in length from 3 to 8 pages and now tries to comprehensively address all of the possible downsides to cryonic suspension that we know of. Execution of a new **Consent** will be required for all existing Alcor members, but when this requirement will be put into effect has not yet been determined.

The **Cryonic Suspension Agreement** was also radically overhauled using a lot of feedback accumulated over the years in terms of dissatisfaction with it by Members. The new **Agreement** is much better organized, breaks out the choices and the fee schedule into separate attachments and addenda and allows for the creation of a personal suspension endowment to supplementally fund the Member's suspension. This endowment can be used to hold resources over the minimum and thus better protect the Member's suspension against adverse circumstances such as high costs for recovery or transport, litigation, inflation, high resuscitation costs, and so on. Another alternative (for which we provide a sample model document) is the creation of a Wisconsin Trust wherein the Member can establish an open-ended trust in the State of Wisconsin to provide ancillary or back-up funding. Members establishing independent trusts can do whatever they want with them, including choice of Trustee and beneficiaries (this choice has always been available, but few Alcor members have used it in the past).

The new Agreement also lays out the contingencies under which Alcor intends to attempt revival and allows for the attachment to the Agreement of a non-binding "contingent" **Statement of Revival Preferences and Desires.** We do not currently have a model document for this, but hope to have one reasonably soon.

There is now a Table of Contents as well as a Definitions section, both of which should make use of the document easier and help reduce ambiguity. The new **Agreement** also provides substantial protections for the Member that were not in the previous **Agreement.** A major protective feature added is enumeration of the terms under which the funds the Member provides for his or her suspension will be managed and used. Untoward contingencies and how they will be dealt with are also better addressed.

Members will not be required to re-execute the **Agreement** until sometime after the final appeal(s) in the Department of Health Services case are over. However, we strongly urge you to consider executing the contract on your own *before* it is required. Why? Because this **Agreement** is much better than the previous one, with substantially more flexibility and protection offered the Member. Any Suspension Member who wishes to execute a new **Cryonic Suspension Agreement** should call or write Alcor and we'll send you one.

The **Authorization of Anatomical Donation** was also modified, dropping the equivocal language about the use of the Uniform Anatomical Gift Act and mention of the old Attorney General's Opinion which stated that cryonics did not, in the AG's opinion, qualify under the UAGA. This change substantially improves our ability to interface with medical personnel in the event of an emergency. **We cannot reccomend too strongly that Suspension Members execute the new version of this document as soon as possible.** Like the **Agreement** it will not be required until after the appeals process is over in the DHS case.

All in all we are very happy with the new paperwork, and we think you will be too. Again, thanks to the the many people who helped.

ALCOR GIFT ITEMS

We've noticed at Alcor functions in the past that when individuals have had Alcor T-shirts made up on their own, there is always a clamor of voices asking "Where did you get that, I want one!" Well, now you can own an Alcor T-shirt of your very own, and what's more you can also buy sweatshirts, tie-tacks, bumper stickers, coffee mugs... you name it! These attractive promotional items are very nicely made (handcrafted by Dave Pizer—just kidding, although Dave is to be credited with design and production) and serve a number of good purposes:

First they'll make you look better!

Second, they'll show everyone how smart you are since you not only decided on cryonics, but on the best cryonics organization as well: Alcor!

Third, they'll spread the word, and that means a bigger, stronger Alcor.

Fourth, all profits go to the Alcor Research Fund to support Alcor suspension research. And this is the best reason of all, 'cause it might well save your life.

So, if you're getting ready for Spring, here's a chance to add a special new twist to your wardrobe.

Alcor T-Shirts. This light gray, attractive, shrink resistant, cotton/polyester blend shirt features the Alcor Phoenix logo and the words *Alcor Life Extension Foundation, Riverside, California.* A large logo/letter combination is printed on the back of the shirt and small logo/letter combination is printed over the left breast. Please indicate Small, Medium, Large, or Extra Large. $12.00.

Alcor Sweatshirts. Identical in color and design to the **Alcor T-shirts.** The sweatshirts are made of heavy cotton/polyester fabric. These are especially nice for cooler weather and sporting wear. Please indicate Small, Medium, Large, or Extra Large. $17.00.

Alcor Mugs. Coffee, tea or immortality? These heavy-duty, large capacity white mugs feature the Alcor Phoenix logo with the aphorism "If you can't beat 'em, outlive 'em" emblazoned on them. $6.00

Alcor Bumper Stickers. Tell the world you're a cryonicist! Each bumper sticker features the Alcor Phoenix logo and the words Alcor Life Extension Foundation, Riverside, California on a white background. Durable vinyl that won't fade or peel. $2.00

Alcor Patches. These colorful Phoenix- logo patches (4-1/4" x 3-3/4") are long lasting Swiss Embroidery and can sewed onto jackets, shirts, hats and other apparel. Each patch bears the word "Alcor" above the Phoenix and the words "Life Extension Foundation" below it. $5.00.

Alcor Lapel Pins. Attractive cloisonne pins bearing the Alcor name and logo. $5.00

Tie Clasp. Same as above but with chain style tie clasp. $5.00

Hat Pin/Broach/Stick-Pin. Same as above but with stick-pin fastener. $5.00

Planning A Visit? Please Let Us Know!

An almost daily activity at Alcor these days is taking people through the facility on tours. We're happy to do this and we encourage visitors to come through our facilities; in fact we are the only cryonics organization that does. However, we want to emphasize the importance of calling before coming. This is especially important for the increasing number of local members who "just want to drop by with a friend or two to bring through."

Much as we wish it were different, it is not possible to be ready to take people through the facility on a moment's notice. Often we are in the midst of work under deadline and all available personnel are busy. It is a major inconvenience to have to drop everything and take guests through—and it interferes with productivity!

Sometimes we're just "not presentable." It's no secret that the facility is crowded and far too small for our current operation. That means that sometimes messy work spills into areas where vistors would have to go. Sometimes this is work on confidential materials such as suspension records or Member records; we often do this kind of work after business hours in the evening. Sometimes we just look grungy. We don't think staffers with sweaty T-shirts and grease up to their elbows make a good impression as tour guides. (Chances are you wouldn't invite new acquaintances into your home on cleaning day or into your bedroom when you just got up!) Just dropping in at 9:30 PM at night with a visitor (as recently happened) can find us personally and professionally unprepared.

The point of this reminder is, please give us call. If you find yourself in the area and would like to drop by with a guest or visitor, don't hesitate to ring us up and ask—even on short notice. If there is any way we can accomodate you, we will. But please, always call before dropping in!

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 $10.00 per line per month (lines are approximately 90 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.*

FREE. LifeOwners Letter. Insurance savings. C. Hartman; 514 NW; Stuart, IA 50250. Phone/FAX (515) 523-1116. 75500,535. hghv51a. Many strong companies. Long-time cryonicist.

MARY NAPLES, CLU and BOB GILMORE – CRYONICS INSURANCE SPECIALISTS. New York Life Insurance Company; 4600 Bohannon Drive, Suite 100; Menlo Park, CA 94025. (800) 621-6677.

EXTROPY: Vaccine for Future Shock. #6 available, $3 per copy. Futurist philosophy, avoiding the heat death of the universe, neurocomputation, reviews of futurist and transhuman books, and much more. EXTROPY; c/o Max More; P.O. Box 77243, Los Angeles, CA 90007-0243.

CANADIAN CRYONICS NEWS from the Cryonics Society of Canada; Box 788, Station A; Toronto, ONT M5W 1G3; Canada. News and views about cryonics in Canada and elsewhere. $10/year (4 issues).

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, MAY 5** meeting will be held at the home of:
Linda Abrams
856 N Harper
Los Angeles, CA

Directions: Harper street is parallel to and between Fairfax and La Cienega in the West Hollywood area. 856 N Harper is between Melrose Ave. and Santa Monica Blvd. on the corner of Harper and Willoughby. Take Fairfax or La Cienega north from I-10 or Santa Monica east from I-405 or west from the Hollywood freeway.

The *Alcor Cryonics Supper Club (Southern California)* is discontinued until further notice.

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. Meeting locations can be obtained by calling the chapter's Secretary, Carol Shaw, at (408) 730-5224.

The **SUN, APRIL 14** meeting will be held at the home of:
Ralph Merkle and Carol Shaw
1134 Pimento Ave.
Sunnyvale, CA

An *Introduction to Cryonics* will be given at 7 PM.

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, MAY 12** meeting will be held at the home of:
Roger Gregory and Naomi Reynolds
2040 Columbia St.
Palo Alto, CA

DIRECTIONS: Take the 280 north to Page Mill Road, and take Page Mill east toward Stanford. Go down to the bottom of the hill to Hoover St. (5th light). Turn left on Hoover to California St. and make another left. Go two blocks to Columbia and turn right. The house is in the second block, on the left. Tel: (415) 493-7582.

There 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 *New York Cryonics Discussion Group of Alcor* 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: **April 19*, May 19, June 16, July 21.**

* The April 19 (Friday) meeting will take place at SUNY Stonybrook, during the science fiction conference there.

The *Long Island Cryonics Discussion Group of Alcor* meets on the first Saturday of every month, at the home of Gerry Arthus. The address is: 10 Jefferson Blvd.; Port Jefferson Station, L.I., telephone (516) 474-2949.

Meeting dates: **April 6, May 4, June 1, July 6.**

There is a cryonics discussion group in the **Boston area** meeting every second Sunday at 3:00 PM. For information. contact: Eric Klien at (508) 663-5480 (work) or (508) 250-0820 (home).

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.

Other Events Of Interest

There will be an Alcor party on Saturday, April 20 at 7 PM at the home of Marce and Walt Johnson, 8081 Yorktown Ave., Huntington Beach, CA. This will be an informal social event for members and those in the process of becoming members. You are urged to bring guests. Refreshments will be served.

The 1991 **International Space Development Conference** will be held in San Antonio, Texas from 22-27 May. Brenda Peters is looking for people who are planning to attend the conference or who live in the San Antonio area to help provide an Alcor presence. Contact Brenda through Alcor or directly at (212) 353-2942.

CHANGE! There will be an Alcor fund-raising dinner on Saturday, September 28 at 7 PM at the LAX Marriott Hotel, 5855 W. Century Blvd., Los Angeles. The goal is to raise money to continue Alcor's research to improve cryonic suspension services. Reports will be given on recent advances in cryonic suspension, ongoing research in cryonics, and plans for future research. Reservations are $100/plate, check or money order to Alcor at 12327 Doherty St., Riverside, CA 92503; or by credit card to 1-800-367-2228. This dinner was previously scheduled for June 15.

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).