

THE VENTURIST

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News Notes

WILLIAMS REPORTEDLY TO STAY IN SUSPENSION

The last issue carried a report of the cryonic suspension of baseball legend Ted Williams, who died (deanimated) July 5. Williams' oldest daughter, Bobby-Jo Williams

Ferrell, was opposed to the cryopreservation and instead insisted that her father be cremated according to directives given in his 1996 will. Two other children, John Henry and Claudia Williams, produced a second document dated November 2000 and signed by the two and Williams himself in which the three of them express wishes for "bio-stasis" or cryonic suspension. Finally, on December 20 the oldest daughter reportedly agreed to allow the cryonic suspension. The daughter will also have an equal share, with the two other children, in a trust totaling some \$645,000, something from which she was originally excluded. Nonetheless, she was reportedly "very disappointed" and dropped her demands for cremation only for lack of funds to pursue the case in court. In any case, cryonicists, myself included, who hold out hope for Williams' eventual reanimation, are understandably relieved.

References: For online news reports see: <http://news.google.com/news?hl=en-&q=t+d+williams>.

eral public as a rustic resort and vacation spot. Guests may choose from among fifteen cabins along Big Bug Creek which runs through the property, or they can rent a room in the lodge, which is a spacious building housing, among other things, a recreational facility and a conference room able to accommodate over a hundred visitors. Plans call for eventual construction of a community especially for cryonicists; meanwhile the site will interface with the existing cryonics establishment as far as possible. "Ventureville" is the tentative name for the cryonics aspect of the project, which is to develop into the full-blown community as time and resources permit.

Returning to the present, the two important events, both cryonics-related, were



John Grigg (left) listens as Alcor CEO Dr. Jerry Lemler addresses the gathering at the Grand Opening, Oct. 27.

CONTENTS

| | |
|--|----|
| News Notes..... | 1 |
| Williams Reportedly to Stay in Suspension..... | 1 |
| News from Creekside/Ventureville..... | 1 |
| Recent Cryonic Suspensions..... | 2 |
| Venturist Annual Meeting..... | 3 |
| Alcor Conference..... | 3 |
| First Cloned Baby?..... | 3 |
| Banotech versus Nanotech..... | 4 |
| One Small Comment..... | 5 |
| Honest to God (book review)..... | 5 |
| Reason-Based Religion, Venturism, and Transcendence..... | 6 |
| To Be Immortal, ch. 6..... | 10 |
| Cryonics Organizations..... | 12 |

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*Letters intended for publication
should be clearly marked as such.*

NEWS FROM CREEKSIDE/ VENTUREVILLE

The last (fall) quarter saw two important public events at the Creekside Preserve, the name recently chosen for David Pizer's real estate project at Mayer, Arizona. The Preserve is now open for business to the gen-

(1) the Grand Opening on October 27, and (2) Alcor's annual Cryofeast, hosted at the Creekside Preserve December 15.

At the Grand Opening there were several hikes to acquaint attendees with various features of interest, including a small observatory perched on an outcropping. (This boasts a Schmidt-Cassegrain reflector telescope with a 12-inch mirror, a respectable amateur astronomer's tool.) Dinner—a nice meal prepared by Dave Pizer's wife Trudy—was followed by a brief address by Alcor's CEO Dr. Jerry Lemler. Alcor's plans include, among other things, the equivalent of a "Ronald McDonald" house, where dying persons can be accompanied by their families. One possibility would be to house this facility at the Mayer site itself, so that it would become part of Ventureville (and would also be available for use by other cryonics organizations besides Alcor).

The second public event was Alcor's annual Cryofeast, held December 15, which, as it happened, was nine days after the resort actually opened for business and handled its first regular customers (December 6). Among other activities was a tree-planting ceremony, giving attendees the chance to help create a small fruit orchard out in front of the lodge, by the highway. After this guests were served a sumptuous meal, mainly thanks to Trudy again. Discussions ranged over many subjects including how to win certain betting games in Las Vegas, conversion to a hydrogen-based economy, and again, Dr. Lemler's ideas for the "Ronald McDonald" house.

More on these two events, including photos, should appear in Alcor's publication, *Cryonics*.

Another event of note was a gathering of the local (Mayer) Chamber of Commerce on the evening of December 10. The meeting was held in the main conference room of the lodge. I'll let John Grigg, who is Dave's manager-in-training at the Creekside Preserve, summarize the event (I'm quoting from Grigg's 11 Dec. Cryonet posting, #20592.)

"Last night the Mayer Chamber of Commerce had a mixer at in our main lodge building great room. We had expected only about forty people but three times that number showed up! Marilyn, the sweet representative from the Chamber, gave the opening remarks to thank her volunteers and then she turned things over to David.

"He shared his love for the place and

described all it had to offer. Quite a bit of humor was included about some of the ups and downs we had in getting to this point. Dave definitely won over his audience with his remarks. At a certain point he put his hand on my shoulder and introduced me to the people of Mayer as his manager-in-training. I felt very proud at that moment and had a lump in my throat. Dave also gave a great deal of credit to his wife and the gentleman whose company did a good job building the lodge.

"After his talk he and I divided up the crowd and took them on tours of the place. I led quite an exodus to the cabins below and received numerous compliments about what they saw.

"I am not a natural 'schmooser' but I will learn in time. I did my best to make people feel welcome as I got to know those attending. I was fortunate to have Jerry Searcy, an Alcor volunteer and friend of ours to help out in this matter. One of the best contacts I made was with the marketing representative from Arcosanti. This is an experimental community not far from us which sponsors various excellent concerts and lectures.

"The entire evening was a success beyond our wildest dreams. Obviously people wanted to see what we had to offer and I believe they really liked what they saw and heard. A bond is developing between us and the local people which will help as we move forward to seeing Ventureville take root."

RECENT CRYONIC SUSPENSIONS

Since the last (3rd Q) issue there have been a whopping seven cryonic suspensions, four at Cryonics Institute, three more at Alcor. CI now has 45 patients, Alcor, 55. Here is a brief rundown as to date, organization, and other particulars. Suspensions are whole-body unless otherwise noted. (The alternative is "neuro" or head-only preservation, for which there is some special terminology. "Cephalic isolation" refers to surgical removal of the head or cephalon. The rationale is that future technology should be able to replace the missing body.) All these suspensions are reported on Cryonet; organization and message number are given in parentheses. Dates refer to the time of death where known, marked with a dagger (†), and otherwise to the date the message was posted. Attribution: CI Cryonet postings

cited are by Robert Ettinger; Alcor postings are by Charles Platt except #20524 which is by Jerry Lemler. Ben Best is to be thanked for consultation regarding the Toronto (CI) case, #20402.

28 Sep† (CI; #20207). The patient, a signed up CI member of moderately advanced years, died of liver failure. Washout and perfusion were done at a local mortuary, starting within an hour of death. The patient was packed in dry ice and arrived at CI's facility in Detroit, Michigan that night.

3 Nov† (Alcor; #20399). The patient, a middle-aged, male cancer victim, died after many weeks of intensive care and a standby that had to be scaled back because of the long delay. Fortunately, when the patient finally arrested, a relative who is a doctor performed emergency procedures precisely as directed by Alcor's Director of Suspension Services, Charles Platt. Within 7 hours the patient was at Alcor, traveling by air ambulance. Due to the desire for a whole-body suspension without cephalic isolation, a protocol using a glycerol-based perfusate was used rather than a more recent procedure involving a different cryoprotectant. Surgery went well, and a terminal glycerol concentration of about 7.1 molar was reached. Perfusion of the brain seemed good, and edema was minimal. Tanya Jones happened to be visiting and contributed her extensive experience. Platt thought afterward the outcome was much better than he had expected.

4 Nov† (CI; #20402). The patient, a brave and intelligent, elderly woman with cancer, died and was perfused in Toronto, Canada. She was then packed in dry ice and shipped to CI's facility in Michigan, for further cooling and the standard, long-term storage in liquid nitrogen. Much credit was due to several members of the Cryonics Society of Canada—including members of Alcor and the American Cryonics Society, as well as CI—who served as volunteers in various capacities. These included Ben Best, Gary Tripp, Christine Gasper, and Keith Henson. David Pascal helped as well, and of course the Michigan personnel.

The glycerol-based perfusion, performed at a local funeral parlor by mortuary personnel, was a two-stage process, with an hour spent doing the head, then another hour for the body. The end stage of the head perfusion included a heavy infu-

sion of 75% by volume (10.3 molar) glycerol.

Many problems were encountered, both during the perfusion and earlier as the patient deanimated in her apartment. (She had been urged to move to Michigan near CI's headquarters, which would have greatly facilitated her suspension, but insisted on remaining in Toronto.) But overall the operation seemed a reasonable, if less than perfect, success, at least based on what we know and don't know at the technical level. Further details will be found in the online report by Ben Best at <http://www.benbest.com/cryonics/toronto.html>.

27 Nov† (Alcor; #20524; neuro). This Alcor member and his wife had recently relocated to Scottsdale so he could obtain a better suspension. Bill Faloon, a long-time cryonics advocate in south Florida where the patient had been living, deserves credit for encouraging the move. Cardiac arrest occurred at 8:20 PM Arizona time, and the patient was transported in less than an hour to the Alcor facility, where the surgical team and operating room staff were ready and waiting. The patient was a cancer victim whose right carotid artery had been obliterated by a very large tumor. Cryoprotective perfusion through the remaining vessels was rapid and thorough, however, and was completed without incident in the early hours of Thursday, November 28. Tanya Jones again assisted; she is now a veteran of 20 suspensions.

This case (and the CI case reported above) underscored the need to facilitate relocation as one's time of deanimation approaches. Alcor is now looking into possible acquisition of a permanent, local facility for terminal members and immediate family. It would not only meet basic lodging requirements but offer such ancillary services as grief management counselling.

28 Nov (CI; #20519). No additional information.

19 Dec† (Alcor; #20676; neuro). This elderly male patient experienced an unexpected cardiac arrest in a routine session of rehabilitation therapy following a hip operation that he underwent earlier this year. (He had requested full confidentiality in his sign-up documents, but had been actively involved in cryonics for well over a decade and was well known in the field.)

Nurses at the southern California rehabilitation center where the arrest occurred

had been told about the patient's desire for cryopreservation and promptly contacted Alcor headquarters in Scottsdale, Arizona. Alcor personnel, assisted by the nursing staff, packed the patient in ice and administered preliminary medications to prepare for body washout. The washout was completed at a local mortuary. The patient had chosen the neuro option, and transport of the entire body to Alcor's Arizona facility would have involved some legal complications and consequent delays. To facilitate a rapid transport and initiation of cryoprotective perfusion, cephalic isolation was carried out at the mortuary after washout and the cephalon reached Alcor's facility early the following morning.

Perfusion using a new, vitrification protocol proceeded without major incident, and the patient reached cryogenic temperatures within a few more hours. Among those deserving credit are Alcor personnel Charles Platt, Dr. Jerry and Paula Lemler, Russell Cheney, Bobby June, James and Jessica Sikes, Mathew Sullivan, Hugh Hixon, Jerry Searcy, and Mike Read. More details, including a candid discussion of the problems encountered, will be found in Charles Platt's online report at <http://three.pairlist.net/pipermail/alcornews/2002/000001.html>.

26 Dec (CI; #20715). No additional information.

VENTURIST ANNUAL MEETING

The annual meeting of the Society for Venturism was conducted by email this year as circumstances permitted, extending from 29 October to 11 November. The minutes from last year's meeting, held Dec. 1, were approved. The existing directors were unanimously reelected and offices assigned as before: David Pizer (President, Treasurer); Mark Voelker (Vice President); Mike Perry (Secretary); Trudy Pizer; Joe Hovey; Mark Plus. The floor was then opened for discussion.

Joe Hovey suggested the Venturists might be interested in purchasing and maintaining a house in Phoenix, near Alcor's facility, for use by Alcor members who have a terminal illness or who are otherwise in the process of deanimating, but are not quite ready for hospice care. The members could be accompanied by their families in their living quarters. (Alcor CEO Dr. Lemler had proposed the purchase of such

a "Ronald McDonald" house; see above.) Joe noted that, for reasons of conflict of interest, Alcor should not own the house itself, but could make funds available for its purchase.

Mike Perry then raised possibility that at some point another cryonics organization might open a "Phoenix branch" and also wish to use the house. The question would then be whether the fact that Alcor had donated money (and might continue to donate for upkeep) would allow it to legally claim special privileges. Jerry Lemler was contacted and promised to look into the matter when time permitted.

Other issues were raised, such as the need for a caretaker and the possibility of more usual rental income when the house was not needed by a deanimating cryonist. With the thought that the matter should be pursued further, the meeting adjourned.

ALCOR CONFERENCE

Alcor's Extreme Life Extension conference, held in Newport Beach, California, November 15-17, may have been the best-yet gathering of its kind. The stellar cast of speakers included AI magnate and futurist Ray Kurzweil, noted antiaging researcher and crusader Aubrey de Grey, and famed cell biologist Michael West. And the talks did not disappoint either. Alcor's Dr. Lemler and colleagues helped make the case for cryonics. More will be found in Alcor's publication, *Cryonics*, and I'll try to have some personal notes next time, with pictures.

FIRST CLONED BABY?

A Bahamas-based company, Clonaid, has announced the birth of a baby it says is a clone. The little girl, dubbed "Eve," was delivered by Caesarean section December 26, said Bridgitte Boisselier, a chemist who heads the company. Scientists are skeptical, however. The claim so far is scientifically unsupported, and Clonaid in turn has links with the Raelians, a controversial, pro-cloning religious group that believes life on earth was created by extraterrestrials. *References: see, for example, http://www.iol.co.za/index.php?click_id=79-&art_id=ct20021228113454607C4507-44&set_id=1.*



Banotech versus Nanotech

by E. G. Ross

E. G. Ross is Editor of The Objective American Daily, (TOA Daily) from which this article is reprinted.



There are people who can neither find happiness in their own lives nor permit those around them to be happy. The best you can do is get such people out of your life. —Thomas Sowell

WE HAVE all heard of nanotechnology. Nanotech is engineering on the atomic and molecular scale; putting atoms and molecules together in precise ways to do what men want them to do. For instance, scientists recently announced the creation of a tiny, light-powered engine consisting of a single polymer molecule. (See our Oct. 19, 2002 “Positive Plenum” feature.) The promise of nanotech is gargantuan. Experts envision making minuscule machines to root out plaque from arteries. Others believe they’ll be able to build incredibly small reconnaissance-battle robots and inject them by the millions into the bloodstream or brain to search out tumors and destroy them; a kind of artificial immune system. Aerospace engineers envision having quadrillions of tiny assembly robots build new, super-strong and super-light airplane wings from atoms on up. And life-extension scientists believe nanotech machines might repair age damage, leading to practical “eternal” life.

The suggestions are legion and progress is accelerating geometrically. Not all, but many of the speculations will probably come true in the next twenty years.

Okay, so you’ve heard of nanotech. But have you heard of *banotech*? I’m sure you haven’t, because banotech is my term for those people who want to ban not only nanotech, but any new, exciting technology.

There are a bunch of banotechs, all braying a slightly different call, but essentially in the same direction. Just as they object to genetic engineering, nuclear power, SUVs, supersonic planes, war machines, and a host of other modern techniques and devices for life’s improvement

and defense, so the banotechs are marshaling their forces against nanotechnology. Some of them find the step relatively easy.

Betrothed to Genetics. For example, certain cadres who hate genetic engineering are bright enough realize that the field could someday employ nanotechnology to achieve greater gene manipulation than is possible with current techniques. Nanotech could supercharge genetic engineering. Hence, in their view, nanotechnology is morally contaminated. Guilt by technological association. By this reasoning, we have an equally good case for banning the writing of the banotechs because, after all, they *could* have produced it on computers using electricity generated by “evil” nuclear or fossil fuel power plants. The point is, when you’re determined to grasp at straws any kind of grass will do.

Pollution Ploy. Others object to nanotechnology because they see it as a kind of mechanical pollution. For instance, Glenn Harlan Reynolds recently wrote on *FOXNews.com* that some organizations, “Like the ETC Group, say that nanoparticles will be ‘the next asbestos,’ though there is little evidence that this is the case.” Indeed.

Wreck the Robots! Reynolds also mentioned something we’ve criticized several times here at TOA DAILY: the rantings of Sun Microsystems head, Bill Joy. You may remember the guy. Great businessman, but oddball pessimistic futurist. He believes nanotechnology—and several other fields of investigation—should be banned from the halls of research. How come? It will, he feels, make possible computers and robots powerful enough to displace human beings as the top predators on the planet. To prevent that, he thinks the government—indeed, all governments—should stop progress across a wide swath of scientific endeavor. He *feels* that we may be creating our own evolutionary replacements; kind of a giga-brain race of mech-

men. Sure, that’s a remote possibility. Science-fiction has explored it for decades. But what’s the answer—enforced human stagnation? That has about as much chance of succeeding as Bill Clinton has of genetically engineering himself a couple of spare penises.

Wild Preservers. One can also find banotech environmentalists who dislike fresh feats of engineering on principle. Why? Because they take us “farther from The Wild”—i.e., from the caves, from which our race has spent the last hundred thousand years trying to fully exit. As one such protester told me, “Every new technology is another stab in Mother Nature’s breast.” Oh, the horror of it! Never mind that this Gaian philosopher had a high-tech boom box next to him, thumping away his favorite neo-jungle rhythms. As many such self-styled experts will tell you, consistency is the hobgoblin of little minds. (I’ve always wondered: does that imply that the path to a great mind is perpetual *inconsistency*?)

Labor Luddites. Next one finds the union banotechs. They growl that robotics and other developments resulting from the 21st century’s nanotech boom will “cost jobs.” That’s always an interesting objection. It reveals such a profound lack of confidence. All new technology costs jobs; always has. It’s the history of progress: new methods, engineering, and machinery replace less efficient, old ones. But the process also creates many *more* jobs—nearly 40 million net new jobs in the U.S. alone since the early 1980s. Those who fear this natural trend of economic expansion are confessing that they can’t (or don’t want to) learn enough to find work in the evolving era. It’s a strange complaint. Most workers—at least in the U.S.—manage to adjust just fine, year in and year out. But then, most U.S. workers are not unionized. Could there be a connection?

Honest to God

by John A. T. Robinson

reviewed by Mike Perry

Nano Soldiers. Finally, there are the banotechs who want to stop nanotechnology—not to mention several other kinds of high tech—because it could “fuel the U.S. killing machine.” Well, it’s doubtless true that nanotechnology will one day play a critical role in U.S. national defense. For instance, microscopic robots might be used to invade and destroy foreign weapons and battle management centers during a war. But why should this be particularly shocking? There’s hardly a technology out there that *doesn’t* have war potential. Heck, when you get right down to it, you could use a banotech protester as a weapon, too. How? Just a get a really big guy to swing him as a club or to throw him at someone. Does this mean we should ban banotechs because they could “fuel the U.S. killing machine”? (By the way, most of the quotations used here are taken from actual protest signs recently spotted at Oregon banotech gatherings.)

Oh, well. That’s probably enough of this. After awhile, refuting the banotechs gets as boring as shooting turtles on a log. They’re just not fast enough to provide much sport. I’ll halt here for this Saturday and wish you a great weekend. But if you perchance run into any banotechs in the near future, let ’em know what their new name is. They sometimes find it intellectually challenging to come up with their own original material.

DON’T HESITATE to pass on the preceding commentary or essay to your friends and others. We don’t mind. In fact, we urge you to do so. *Please tell others about this site. We encourage you to tag your e-mails with this line: “Want an independent voice for positive, rational living? Read The Objective American Daily, www.ObjectiveAmerican.com.”*

The preceding article appeared in The Objective American Daily, Saturday, November 2, 2002, under the title ECONOMICS: Banotech vs. Nanotech (WR: Leap of Faith; PP: Dead Bear?) The article may be found at <http://www.objectiveamerican.com/archiveshow.cfm?id=1231>.

ONE SMALL COMMENT: The reference to “shooting turtles” made me wince—I don’t like that sort of thing—but the main points seem valid enough. —Ed.

The 1960s were a time of intellectual ferment a questioning of many societal norms and memes, especially in West. The Christian religion which had so long dominated there and in some other places did not escape scrutiny. John Robinson, onetime Anglican bishop of Woolwich, England and later Dean of Trinity College, Cambridge, wrote a short volume in 1962 that challenges the Christian religious perspective and calls for a realignment to a modern scientific worldview. Following Paul Tillich, *Honest to God* rejects the traditional notion of God as a being in favor of an impersonal “ground of our being.” The difference between this position and atheism, a quoted passage from Tillich assures us, is that for the true atheist “life has no depth.” Whoever “knows about depth” in fact “knows about God.” Robinson goes on to argue that a reverent and meaningful outlook on life is possible—and in fact highly desirable—in which belief in the supernatural (Robinson’s equivalent term is “supranatural”) is abandoned in favor of a more or less intense focus on this world and its problems and possibilities. Ideas of others such as Dietrich Bonhoeffer and Rudolf Bultmann additionally furbish this viewpoint.

One then aims for a “Christianity without religion” in which the really important elements of the ancient faith are salvaged, adapted, and perpetuated in a modern setting. Another thing that is clearly salvaged, and with which I take issue, is the terminology which, while it may have new interpretations, is carried over more or less whole cloth, too often without much explanation or comment. Robinson speaks repeatedly of the “resurrection” of Jesus, for example, but is never clear as to what he means by it. Many other questions are left unanswered. It appears that “Christianity” is now to become a variant of secular humanism, but this is not stated, or certainly not too clearly.

There are, nonetheless, some interesting hints. Tillich himself suggests alternative terminology for those uncomfortable with the new understanding of “God.” This is duly reported and, by implication, en-

dorsed. In place of “God,” “Kingdom of God,” and “Divine Providence,” Tillich proposes, respectively, “the depth of history,” “the ground and aim of our social life,” and “what you take seriously in your moral and political activities.” (It is worth noting how the new concept of God is rather flexible and restatable in various forms.)

Another interesting secularization is suggested in Robinson’s discussion of prayer. Early on he (refreshingly, in my view) admits he is not the praying type, and notes this is true of quite a few others who profess or attempt adherence to his religion. “[T]heir prayer is in the practice of their trade,” he notes after much discussion, quoting from Ecclesiasticus (Sirach). “My own experience,” he then offers, “is that I am really praying for people, agonizing with God for them, precisely as I meet them and really give my soul to them.” “Prayer,” then, has a new, generalized meaning, not necessarily requiring anything supernatural at the other end.

Overall, one sees in this book what could have started a conversion of Christianity, or a major portion of it, to a secular, humanistic creed. It did not materialize, and indeed, today the pendulum seems to have swung the other direction, to a more literal and supernaturalist affirmation of the Christian faith. This trend, one thinks, must surely be temporary. Scientific advances brought about the state of affairs that produced the book under review and other “liberal” religious thinking, and, I should think, further advances will eventually carry the day against all supernatural beliefs. But these advances must be in the area of quality of life, and must be truly revolutionary: the elimination of aging and diseases and the immortalization of the human species, with options to advance beyond present levels in many ways. It is probably only then that the human population as a whole will be able to abandon its ancient mythologies, including such associated terminology as “God” itself, and place its full trust in simple reason.

Reason-Based Religion, Venturism, and Transcendence

by Mike Perry

Religion is a controversial subject that is often disparaged by intelligent people, who in turn are skeptical of claims of the supernatural or paranormal. Religion, they say, involves belief in some sort of otherworldly agent, most commonly a supreme being or God, whose existence cannot be conceded. They look forward, they think, to a time when all religion will be forgotten, superseded entirely by science and reason.

Here I will make the case that religion can be understood in a different and strictly rational sense that does not invoke beliefs in the supernatural or divine revelation. So understood, it has a vital role to play in life today, to convey a sense of purpose, meaning, and value that otherwise is lacking or inadequate. Future scientific advances, while not guaranteeing support, do not necessarily threaten such a reason-based religion, and may in fact strongly support it. In particular, Venturism, a philosophy of life that endorses cryonics as a possible means of physically overcoming death, provides a suitable foundation for a reason-based religion, one which can be of service to humanity as it hopefully advances to something greater than human. It should be emphasized here that advancement to a more-than-human level, including elimination of diseases and the aging process, with options to personally develop into a greater being, is a central and sacred goal of the Venturist movement.

Before proceeding further it would be well to consider what we really mean by religion, and in particular, how it is possible that a religion could be based on reason alone rather than incorporating elements of untested faith or a belief in the

supernatural. Some background is relevant.

Memory, reason, and language are basic to being human, and are so far developed in us as to distinguish our species from other known life forms. With them people become superlative problem solvers, both individually and collectively. Yet, as in the case of many other great gifts, there is a downside. Two very important parts of solving a problem are (1) recognizing and identifying the problem, and (2) caring enough about solving the problem to devote the requisite effort. Caring will inevitably induce stress, and we humans may stress a great deal over a difficult problem, in proportion to how important we think it is to find a satisfactory resolution. Some of the most difficult problems are also the kind we perceive as the most important, problems connected with basic survival needs and with the overall meaning and value of our existence. Religion, philosophy, and science are enterprises that have arisen, in roughly that order, to address the more difficult problems of life.

Early hopes for solving hard problems rested on beliefs in the miraculous. Evidence of the miraculous was not hard to find; one had only to look around and compare the phenomena of nature with the far more modest effects of human ingenuity. Weather; seasons; fire; the rising and setting of the sun, moon, and stars; life in its great variety and complexity; sickness and recovery; death and renewal—all suggested the workings of organized powers on a scale beyond human comprehension. It was frightening, yet also exhilarating, and it offered a basis of consolation and hope, since one could imagine somehow establishing a rapport with the great powers,

who might then be disposed to work toward one's benefit.

In this way, we can imagine, primitive religions may have first gotten started, to be later refined. A "religion" was, in this case, a body of beliefs, attitudes, and practices centering about what was considered to be sacred and conveying a sense of the purpose, meaning, and value of life, at a deep level. Tangible, worldly benefits such as abundant harvests or good health and fortune were also often sought through religious practices. But the element of meaning is, I think, more fundamental, as it has also been to later developments in the various religious traditions.

While religions tended to emphasize belief in superhuman powers and miracles (as the dominant ones still do), another field of thought eventually came into being, philosophy, that centers on the use of reason, and is very general in scope. Philosophy studies the meaning and justification of beliefs about the most general, or universal, features of things. It is not typically carried out by experiment and careful observation, but by carefully formulating a problem, offering a solution, giving supporting arguments, and engaging in dialogue about the subject. Existence, goodness, knowledge, truth, beauty—and the value, meaning, and purpose of life, are the sort of topics considered. With philosophy we can rationally approach the important issues raised by religions, such as whether gods or other supernatural beings exist, and whether beliefs could have positive value even if untrue. Philosophy also studies the issue of truth more generally, and how to arrive at a correct view of reality. In this way philosophy fosters the develop-

ment of science, in which experiments, careful observation, and reasoned arguments and inferences lead to a comprehensive understanding of reality. The understanding in turn can be tested through the methods of science, so that errors can be corrected and deeper understanding acquired.

Science and its helpmate, technology, have transformed our life in the past few centuries, conferring ways of dealing with problems that before were unknown. Today, for example, many diseases can be cured where before one attempted to deal with them in other ways, which might involve religion (praying to gods for help) or philosophy (learning to accept the problem as part of life rather than expecting to eliminate it). A second function of science is to offer explanations of phenomena that were once thought to require the assistance of sentient powers. The origin of living species, for example, is now accounted for by Darwin's evolutionary theory which requires no divine designer.

Still, even now we are confronted with some very hard and important problems that science is unable to deal with, and thus philosophy and religion are still widely invoked and respected. We may reasonably ask if this will always be so. In the case of philosophy, the answer seems clearly affirmative. Science is concerned with truth and truth alone, while philosophy also considers matters of taste (beauty for instance). Moreover, science is continually advancing, something which seems destined continue indefinitely, and philosophy is the mother of science, calling attention to uncharted areas of human knowledge that might become scientific fields in their own right. Physics, for example, got its start as "natural philosophy" but now has found a more systematic and mathematical development that has elevated it to the level of a hard science.

Philosophy, then, seems assured of a place in the future, but what about religion? Is religion going to survive, and should it survive? The answers one favors will, of course, depend on one's worldview, expectations, and hopes for the future. Here I will argue from the standpoint of scientific, materialistic immortalism. (I do, in fact, think this point of view is highly defensible based both on scientific evidence and on considerations of what ought to be and to happen. It is also the prevailing viewpoint

in Venturism and something I favor personally, though of course it is not absolutely "proved" correct, any more than any scientific principle or theory can be established with absolute certainty.)

According to the immortalist viewpoint, science and technology can reasonably be expected to progress until biological limitations on life are overcome and people are essentially immortal. Meanwhile, no evidence will be found of supernatural or mystical forces or powers, that is to say, elements of reality that cannot be reasonably accounted for by scientific theory. Ancient, untrue beliefs in these putative aspects of reality must be increasingly called into question and are unlikely to survive, nor should they. Religions that depend on such beliefs must undergo substantial changes if they are to survive, and I think they will only survive, and should only survive, by becoming fully reason-based and dependent on the same, materialistic conception of reality one finds in the sciences. We must then ask if it is possible for a religion to be purely or substantially reason-based, and even if so, is it desirable, that is to say, is it worthwhile to have a religion at all?

To approach these matters we return to our suggested definition of a religion: a body of beliefs, attitudes, and practices centering about what is considered to be sacred and conveying a deep sense of the purpose, meaning, and value of life. For a reason-based religion we must have a concept of the sacred that can be taken seriously yet depends only on elements that are accessible by reason, that is, we must exclude divine revelation and any attendant beliefs or claims not open to scientific inquiry. (Another point to note is that a "belief" must have the status of a working hypothesis rather than a dogma demanding unquestioning certainty.)

There are, in fact, religions that substantially meet these requirements, among the oldest and most successful being Theravada Buddhism, in which release from life's burdens is sought through virtuous conduct and self-denial. (The "self" is considered an illusion and actually nonexistent. More generally Buddhist doctrine asserts the "impermanence of all things.") The more committed adherents practice asceticism and celibacy, their highest aim being the state of nirvana, an extinction of all of craving. We might say that, for the

devotee, life itself, by being rightly lived, becomes something sacred, hence meaningful at a deep level, though there is no appeal to gods or other mystical entities.

Though Theravada Buddhism can be described as godless, it is interesting to note that this does not apply to all reason-based religions. In Deism, for example, it is held that God, a supreme, sentient being, created the universe and watches over it. God, however, is revealed and known through the "book of nature," that is to say, purely by scientific observation and deduction rather than, for example, a "revealed" scripture.

The case of Deism in turn is interesting inasmuch as its claims are, to a limited extent, testable scientifically. Thus, around 1800 an "argument from design" was invoked by Deists to support the hypothesis of a God. Living things in particular seemed to have required a grand, intelligent Artificer, else how did such complex structures as eyes, grasping appendages, and brains come into being? Common sense and science too seemed to support this position. Unfortunately, however, subsequent developments in science have not offered strong support. Instead alternative hypotheses, such as Darwin's principle of evolution, seem able to account for even such complex effects as life and its machinery without requiring intelligent design. This, then, shows how science, as it develops, need not continue to support the claims of a reason-based religion, though certainly such support is not ruled out. But Deism, which also held that the dead would eventually be restored to life through the goodness of God, declined from the popularity it enjoyed two centuries ago and has few adherents today.

Some reason-based religions of more recent origin are humanistic; humankind is accorded a kind of sacred status and benefiting it becomes the ideal. Material comforts and other advantages of society and civilization are recognized as among the important benefits, to contrast with the more ascetic focus of Buddhism. Comte's Religion of Humanity (mid-1800s) and modern Unitarianism are notable examples.

Reason-based religions offer the possibility of approaching and appreciating the sacred within the confines of philosophy. "Religion" as a whole would then become that branch of philosophy concerned with what it is about life that can be

considered inspirational and meaningful at a deep level. In any case we must ask how reason-based religions have fared in the marketplace of ideas alongside their more mystical and less rational cousins. The answer is not particularly well, and the cause does not seem hard to see. The reason-based approach has not, up to now, been able to offer a satisfying answer to the great questions of life, which center around the problem of death and the wish for transcendence.

People want something more than this present existence, with its predictable termination after a few decades of declining health. They are not satisfied with impermanence. They would instead prefer a life beyond the grave, or not dying in the first place. Here is where reason-based religions have so far proved deficient. (Deism is an exception since it did offer hope of an afterlife. But Deism itself has suffered under scientific scrutiny, as we noted, so that it, too, has only had limited success against religions based on claims of divine revelation.) Science and technology have not offered much in the way of overcoming the problem of death, nor in fostering hopes of an afterlife. Hopes of transcendence have continued to require some form of mysticism, at least for the vast majority who entertain them.

Continuing progress in science and technology, however, begins to suggest a different picture that challenges the traditional view of the immutability of aging and the inevitability of death. Aging is being systematically studied and has yielded some secrets. Calorie restriction will extend life in certain circumstances, as will telomerase in others. The progress thus far is suggestive of greater things to come.

Once again, it is arguable and, I think, likely that substantial improvements in the human condition will be possible relatively soon. Aging and now-terminal illnesses should all be cured. Along with these fundamental advances should come increased wealth and prosperity, and other gains such as greater knowledge and, more importantly, increased intelligence—provided, of course, that the opportunities offered by the new technologies are managed rightly and wisely. It is hard to imagine how far this could go or where it may lead, but the prospects seem exciting, putting it mildly.

Today, however, we are still faced with the same biological limits our fore-

bears were forced to accept. Must we do the same as they, resign ourselves to a predictable death without a struggle? *No*, say a few voices—those of us who advocate cryonics. Cryonics is the practice of cooling persons who have just clinically died and storing them indefinitely at a low, sub-freezing temperature, in hopes that technology will advance eventually to the point that they can be restored to consciousness and good health. (Bear in mind that clinical death is not necessarily true death since, for example, resuscitations often occur after cessation of breathing and heartbeat.) Such hopes are controversial and the evidence that they can be realized is circumstantial, inasmuch as no large organism or body organ has yet been restored to a functioning state after cryopreservation. Yet the prospects of eventual success are not zero.

Evidence favoring cryonics comes from the fact that some cells and tissues have resumed functioning after cooling to liquid nitrogen temperature (-196°C or -320°F) and rewarming, and from the high degree of structural preservation seen in cryopreserved tissue, including the brain. Advances in nanotechnology, the controlled manipulation of matter at the atomic scale, suggest that eventually it should be possible to make repairs to freeze-damaged tissue at the level of individual cells. Fairly extensive damage might thus be reversed, much as a library could be pieced together after its books were torn to fragments, provided one had all or most of the fragments to work with. Or alternatively, the texts might have been redundant, with each book present originally in several copies, so that damaged portions could be inferred and reconstructed even if much of the original is missing or indecipherable. In the brain the “text”—identity-critical information such as memories—is, in fact, redundantly encoded, further suggesting that successful repairs will be possible.

Cryonics, with its unproven nature, remains a long shot in the eyes of many who have studied the practice, but is endorsed by some prominent scientists, among them encryption expert and nanotechnologist Ralph Merkle, artificial intelligence pioneer Marvin Minsky, and biotechnologist Michael West. Several organizations offer the service, all based in the U.S. About a thousand are signed up for the procedure, and about a hundred are currently cryopreserved. Many of the arrangements are for

“neuro” or head-only preservation which is cheaper than the comparable whole body option and has some other advantages. The thinking here is that future, cloning-related technology should be able to rebuild the rest of the body from information in the DNA. This rationale, however, is controversial even among cryonicists; not all organizations offer the neuro option and many cryonicists prefer and are signed up for whole-body.

Cryonics is not cheap; costs vary widely, depending on the organization and the procedure selected, but are at least several times that of conventional burial, even for the head-only variety. (The procedures themselves are more costly than the cosmetic preparation of a traditional burial, and, even more importantly, enough funding must be set aside for indefinite maintenance of the patient from the interest income.) The cost, however, can usually be met through life insurance, so that the often-aided claim that cryonics is “only for the rich” is unfounded. But the uncertainty (so far) as to whether cryonics will work must still be taken as a serious challenge. Yet cryonics is significant because it poses a real challenge itself to the ages-old dictum that clinical death is irreversible, that real death (irreversible loss of consciousness) is inevitable. (It should be noted that a warm-temperature alternative to cryonics in which the tissues are chemically fixed and preserved also offers the possibility of eventual reanimation but has not seen much use, despite the lower cost and ease of maintenance compared to cryopreservation.) Cryonics in fact offers a possible technological route to immortality. It is not itself a religion, of course, but is best seen as a medical procedure. But a small movement, Venturism, has arisen, in which cryonics in effect becomes the centerpiece of a reason-based religion.

Venturism is concerned with (1) what is of ultimate significance, (2) what ought to be, both from the standpoint of definition and of implementation, and (3) the physical immortalization of the individual. Individual life is held sacred, and death is a detriment that can and should be defeated scientifically. Through immortalization, and expected, subsequent development, the individual will achieve transcendence and options far beyond the present human level.

The deep questions of life are addressed in Venturism with the firm position

that it is up to us humans, and the more-than-humans we will likely develop into, to solve these problems scientifically. An attitude of cautious optimism prevails; it is felt that somehow even the most difficult problems will be satisfactorily resolved, though very considerable effort may be required, even at the more-than-human level. This is not a feeling of dogmatic certainty—Venturists do not insist on dogmas—but a level of confidence that justifies the working hypothesis that all problems are to be handled through reason.

The Venturist ethic is based on enlightened self-interest, extrapolated over infinite time. The hope for and reliance on immortalization creates a perspective that, it is felt, elevates self-interest to an unimpeachable ideal and fully reconciles altruism and egoism. Each individual will need an extraordinary code of conduct to safely interact with neighbors over eternity and realize maximum benefit. Though many details cannot now be known, it seems clear that success will require extraordinary benevolence. Venturists thus advocate respect and love for others, practicing the Golden Rule, and willingness to defend others against danger.

A requirement for membership in the Venturist organization is to have arrangements in place for cryonic suspension (cryopreservation). This, and a wholehearted and goodhearted desire to take part in the organization, are essentially the only requirements. (Thus a Venturist could, in fact, be a theist or possess other beliefs going beyond the very limited formal requirements of Venturism.) The Venturist organization (officially known as the Society for Venturism, a 501(c)3 nonprofit incorporated in 1986) takes its interest in immortalization as a solemn moral commitment. In particular this means assisting members with their cryopreservation, to the extent that help is needed and resources are available. In addition the Venturists are committed to seeing that those who are preserved for eventual reanimation are, in fact, reanimated in due course, if and when this should become possible.

Another consequence of the stance on immortalization is that Venturists support the development and responsible use of life-extending and life-enhancing technologies. Today some call for the suppression of such technologies because their use would supposedly interfere with our “hu-

manity.” It would be preferable, they think, for us to grow old and die in the time-honored fashion, and otherwise remain at the level that evolution has assigned us, apparently forever. Venturists, of course, are most strongly opposed to any attempt to impose mortality and other limitations in this principled fashion, and recognize that becoming more than human is a worthy goal to consider.

There are, needless to say, some challenging difficulties with Venturism as a religion. The membership policy itself has been called into question. Persons, for example, might be excluded from membership based on financial difficulties; people who are poor and disabled may not be able to afford cryonics arrangements even with life insurance. One possibility would be to slightly broaden the admission standards to include any form of biostasis arrangements, in particular, the less expensive chemopreservation. So far, however, persons desiring this form of preservation have been so rare that the matter has not been addressed. In any case, the Venturists’ concern for the individual does not stop with its own membership but extends, as far as resources allow, to others less fortunate who also have similar needs; rescue missions are not ruled out.

Other difficulties are more philosophical. The scientific stance of Venturism forbids it from making guarantees. One must live with uncertainty, even when immortality is taken seriously; there is no absolutely assured salvation, even if there is ground for hope. More specifically, cryonics might not work; where would that leave Venturism? Finally and relatedly, there is the serious problem of those who have died without special preservation. They are lost—decayed or cremated—and cannot be resuscitated in any usual, straightforward sense. Are they gone forever, so that their lives were entirely lived in vain and so much wasted effort?

Such difficulties are formidable, but have been addressed at length, in one possible fashion, in my book, *Forever for All*. There a philosophical system called Yuai is developed that provides for other, eventual means of restoring past individuals to life scientifically. Cryonics, when available, is still defended as a better route for attempting immortality. The Venturist organization incorporates an Order of Universal Immortalism (OUI) which is de-

voted to Yuai.

Not every Venturist is able to accept the premises of Yuai, including the existence of multiple universes and the validity of pattern survival (the position that original persons may survive in copies or replicas). More generally, no one is denying that there are many philosophical problems in Venturism that call for careful thought. But Venturism is a significant, possibly unique, attempt to develop a rational religion around the idea of scientific immortalism.

This brings up the question, hinted at earlier, of whether any such attempt is worthwhile. Do we need a rational religion? I submit that not only do we need it now, but as the future unfolds, a future of fantastic possibilities, the need will grow.

It is only through religion that the deepest issues of life, such as why we live life in the first place and what sort of aims, goals, and values ought we to have in the process, can be faced with the seriousness they deserve. Science may provide the means to accomplish things that were formerly impossible, but science by itself cannot determine what we ought to do with our capabilities. If suitable progress is made, we may be able to create an immortal community, but having the ability will not by itself supply the motive. Supplying this motive will in turn, I think, pose a formidable challenge.

Up to now we have, in a sense, been lucky. Natural selection has determined our motivational psychology and we have not had to think so much about it ourselves. In particular, the demands of reproduction: selecting mates and bearing and raising offspring, have occupied much of our time. Technology, with its promise of biological immortality, will very likely change all that. The making of offspring will surely decline in importance, and likely approach the vanishing point, while the favored means of doing so will also radically change. This is all the more reason we will need to rethink our position on life and its meaning, and why we will need a religion, one that fits comfortably with science and thus, supersedes the ancient traditions. If a religion is conceived as a rational enterprise, it can be developed within the safe confines of philosophy and, I think, will suitably serve our purpose. Present-day Venturism provides at least a serviceable starting point.



To Be Immortal

Writings of Evan Cooper

Edited and Arranged in Book Form

by R. Michael Perry

Chapter 6: Answering the Critics



Evan Cooper from *Macleans*, Apr. 2, 1966.

Background: We continue with the serialization of To Be Immortal, writings of cryonics pioneer Evan Cooper who in 1963 started the Life Extension Society or LES to promote the freezing idea. This chapter deals with two scientific critics of cryonics, technological forecaster Robert Prehoda and cryobiologist Armand Karow. Both thought cryonics unlikely to work, but could give no ironclad arguments why it would not. Their scientific criticism has been echoed in the decades since, while the cryonics cause has been championed by others with scientific backgrounds.

The Problem of Freezing Now

If freezing eventually results in the extension of life for those properly frozen, will we as a civilization and as individuals be held responsible by future ages for monumental unconcern over the disappearance of millions of people? LES policy and advocacy has been to freeze or prepare for freezing the dying for whom there is no hope remaining, and those who have just died. This assumes, of course, that the person in question desires to be frozen. The reasons for advocating freezing can be briefly reiterated as follows. Although the validity of the freezing hypothesis hasn't been proven out in clinical practice it probably will be in time. If the person isn't frozen when death comes he is most certainly gone for good. However, if he is perfused and frozen, even by our present-day means, he stands some chance of being repaired and reanimated in the future. To read the future and say that it *can't* be done is grossly unscientific as far as we can see. However, this isn't the way some other people look at it apparently. The problem came up in an article by Robert Prehoda, "Human Hibernation" (*Pageant*, April

1966), where he stated: "Almost all reduced metabolism experts regard the proposal to freeze the dying or dead at the present time as totally unfeasible because they do not believe that cellular damage caused by current freezing techniques could ever be corrected." We should like to ask these gentlemen some questions, such as: *If you wished to try for a return to active life in the future, how would you dispose of your body at death? Freezing? Pickling? Dicing? Burial? Cremation?*

We brook so at anyone saying that a person presently frozen could never be reanimated for several reasons. So often the experts have been too conservative in what they thought science could do. Wasn't it Lord Rutherford, once the world's greatest expert on the atom, who said that it could not be split and its energy released? We have a whole history of this type of pessimism as well as of those who were more optimistic. Second, the future encompasses a staggering amount of time. There is no known reason why the presently frozen cannot be held indefinitely until the necessary problems are solved. In the more extended future they could be stored in natural cryogenic areas such as space or on the moons of Jupiter (e.g.) at no cost for as long as necessary. Cost might not even be a consideration in the long run. Lastly, it is the history of science that there is more than one way to skin a cat provided you have the cat to work with. It is even conceivable that "massive cellular damage" would not need to be repaired. New cells could be substituted and the identity of the individual retained. The possibilities are endless and to discourage an individual from trying for a future life seems from this vantage point immoral.

Possible or Impossible?

If a person were frozen now is reanimation possible in the more distant future? Do the experts think it is possible or impossible?

The history of science repeatedly reminds us that much more has been discovered and solved than men generally expected. Most of us have heard of a long list of predictions which were declared impossible and yet eventually came to pass; such as, atomic energy, the airplane, the rocket, the iron ship, radio, etc. One less well known prediction was that of the 19th Century scientific optimist Auguste Comte. He reasoned that since science could not reach and sample the material of stars, their composition could never be determined. Of course, in a few years men with the spectroscope found precisely which elements were in the sun, our closest star, and also found new elements as yet unknown on Earth.

In particular instances the history of science proves nothing. But it should teach us to be very wary of underestimating the possibilities of science and to be exceptionally careful of saying that problems amenable to the techniques of science can never be solved. It seems most reasonable to claim that reanimating a frozen person, even if damaged, is within the domain of science. We are initially pessimistic that a person could be reanimated for we seldom stretch our imaginations sufficiently to conceive how presently insurmountable problems might be solved in the more distant future. We tend to confuse the present with the future. We restrict the future by imputing to it our present limitations. Even in theory we tend to forget how deep in time the future could be. With an unlimited amount of time obstacles that seem almost

insurmountable can eventually be overcome.

Let us expand our imaginations for a moment and explore how the presently frozen human brain might be reanimated. One possibility is that it may be much less a problem than we expect. If Prof. Suda's experiment is valid—perfusing and then freezing for half a year a cat's brain, with successful reanimation—it would indicate that something of the same can be done for the human. It might then be extravagant to claim, as Mr. Prehoda does, that most of the cells would be damaged beyond any conceptual means of future repair. True, the cat's brain is smaller and less complex. True, Prof. Suda's experiment has not been duplicated, as yet. However, other freezing experiments indicate that such an experiment should be possible. As Bronowski and C. P. Snow write, trust is an integral part of science. It doesn't mean that Suda's results should not be checked. They should. But it might be more practical for progress to trust that Suda has done a reasonably accurate experiment until we learn otherwise.

A second possibility is to grant a large amount of damage and imagine what could be done repairwise. In centuries to come and provided enough is known about life I see no reason why brain cells could not be repaired at the molecular level and reconnected. Granted this is a long way in the future. I don't wish to stretch my imagination out of joint, but it is conceivable that there would be machines with IQs higher than we dare think of, and sophistication so great that they could patiently rebuild cells atom by atom at the speed of light.

A third possibility, if the cell walls were broken or for whatever reason, could be to remove or copy and transplant the molecularly structured memory into a new cell. This idea is related to Prof. Elof Carlson's prediction that King Tut (or some other ancient Egyptian) could be recreated from his particular genetic code which should be preserved in his dried tissues. King Tut's memories would have been lost. But it is interesting that even a bodily recreation can now be considered as a future project for science. This could hardly have been dreamed of in the decades and centuries previous to ours. With the increasing sophistication of science, who knows, perhaps it might not be such a ridiculous idea to perfuse the body with some cryophylactic agent and store it in Antarctica, although science certainly seems to indicate that cryogenic temperatures in addition would be better. If the Egyptian has such luck as to have a dupli-

cate of his body recreated in some future century, then by cryogenic storage others may find themselves completely whole, living, and the same in some future century.

Concerning when to start the freezing process there is no dispute from this writer that it would be preferable to begin or at least have everything ready when the person is still alive. What is possible in fact may be another thing. Also we should always remember the extreme relativity of death. In some instances a person in previously excellent condition who has just died might be perfused and frozen immediately and be in better shape for reanimation than an aged and disease racked person whose perfusion and freezing were carefully prepared for in advance of death.

We all know the perfect method of freezing is not at hand. But we do believe that a person attempting to see the future will be well advised to prepare for the best freezing available now. As improvements come he will be ready to take advantage of them. So, even if it were true that by "present" freezing methods the person could not come back, he would still be in line for discoveries which might occur before his death.

Concerning the leading reduced metabolism experts (cryobiologists) Mr. Prehoda is plain enough. I simply stand in amazement that over half of the 36 men on a list he compiled were so conservative or pessimistic about future possibilities. Perhaps they should be polled from time to time to see if there is a change of opinion, given that "not one of them" (of the half who were asked) "thinks that there is even a remote chance of reanimating people" (even in the distant future) "frozen under present cryobiological techniques."

It may be too early to see whether the "freezing cult" or movement is stimulating funds into research. After all we are as yet rather few in numbers and very few have been frozen. Generally speaking, funds are only spent in research when interest has been generated. The large sums spent for war research, space included, and medicine revolve ultimately on public interest. It is doubtful that the freezing program would be exempt from this pattern.

More important, however, we have an obligation to the presently living and dying. If our assessment of science and the future is correct they have some chance of entering the future. We are obligated to help them as much as possible and not sacrifice them to the future when helping them here and now might possibly enhance their chances.

Answering Another Critic

Armand Karow, Jr. is a well-known cryobiologist who, along with Prehoda, has written at some length against the freezing possibility. Pickling "in the manner used to preserve frogs for the use of biology classes" is an alternative, he contends, with "the same order of probability for reanimation in the future." If you will pardon my saying so, I'm pickled to death at his suggestion, but really he must be pulling our leg.

Surely he wouldn't say that if Suda pickled one brain and perfused and froze a second one, he would get a better brain wave from the pickled brain after six months? What does he think of Suda's experiment? Does it seem to indicate that there was a serious problem of denatured proteins, as he claims would follow for freezing? I don't mean there won't be problems. But wouldn't he fairly admit that Suda's work indicates that freezing the brain holds more promise than pickling?

I think he passed up, perhaps graciously, a better alternative than pickling. That is *dicing*. He rightly and repeatedly worries about the difficulty of perfusing, and later warming after freezing, the large tissue masses. Dicing is the answer. No problem perfusing, no problem freezing, no problem warming, but there may be a slight jigsaw problem for the future. However, if this appears risky, let us return to freezing the whole body or at least the whole brain as Suda did with the cat.

There is one argument that I blush to think he would use in his critique, yet he does. That is: "The layman must simply take the scientist's word that this is true" If the layman always took what the expert said as gospel truth through the ages, I fear we might have neither our present civilization nor perhaps science herself. Let us look at protein chemistry and any other such supposedly arcane subjects citing experiments or giving reasons that show reanimation cannot come to pass.

The *cost* of cryogenic storage is probably not relevant to our original debate. However, the additional side problems he raises are more than welcome. Fundamentally we wish to know if reanimation in the future, using tomorrow's techniques superimposed on today's freezing methods, is possible.

True, we have to use sufficient funds to initiate cryogenic storage of humans. But it is a fair bet that automated economies of abundance can carry the load easily in the future.

I do sympathize with Dr. Karow's need for research funds. But as Ettinger has said of Prehoda,² he has the cart before the

horse. Human cryogenic storage won't take away research funds, rather it will stimulate funds through the interest it generates.

Some Final Thoughts

In neglecting to freeze the dead and dying there is no overt killing but something similar nonetheless: eliminating the chance of a future life—in this case—by apathy, ignorance, lack of faith in scientific progress, and a basic unconcern with individual life. It appears highly likely that society, the vast majority of individuals, and even the scientific subcultures are still infected with this monumental unconcern for the life of the individual. This is the status quo: a belief that the race would be better off with death. They cannot imagine the development of dynamic individuals with time. If they could so imagine and become concerned they would bend every reasonable effort to freeze the dying even if it isn't known for certain that the cryogenically suspended can ever be reanimated. Reanimation remains a good scientific bet for those properly preserved, given enough time.

We wonder, in fact, if scientists—and others who know of the freezing theory—don't have a moral obligation to make the best effort possible in supporting and spreading the idea. If 1% of the world's population dies per year this seems to mean that as many as 30 million go to their deaths unnecessarily. Shouldn't they at least be presented with the information that there may eventually be a longer, even richer, life for themselves if they will have their bodies frozen at death?

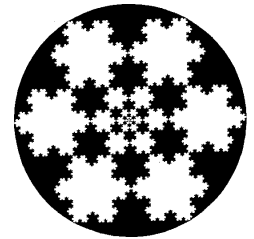
It goes without saying that none of this could conceivably be final. Let us follow the scientific evidence and always be willing to change. But let us not—because of a pathetic conservatism or a failure of nerve and imagination—let that minority of optimistic individuals, who might avail themselves of freezing, slide to oblivion because we cared not enough of individual human life to support the idea and to inform others.

1. A. Karow, *Freeze-Wait-Reanimate* 263 (1966).
2. Mundth et. al, *Cryobiology* Sep.-Oct. 1965.

To be continued.



**SOCIETY FOR VENTURISM
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CRYONICS ORGANIZATIONS OFFERING SUSPENSION SERVICES TO THE PUBLIC

(Venturist full Members must be signed up for cryonic suspension. To the best of our knowledge, the following are reputable cryonics organizations and would be considered satisfactory. Organizations are listed alphabetically.)

Alcor Life Extension Foundation, 7895 East Acoma Drive, Suite 110, Scottsdale, AZ 85260; 480-905-1906; fax: 480-922-9027(fax); info@alcor.org; <http://www.alcor.org>; emergencies only: 800-367-2228.

American Cryonics Society, 1901 Old Middlefield Way, Suite 17, Mountain View, CA 94043; 800-523-2001; 415-254-2001; fax: 415-967-4444; cryonics@jps.net; <http://www.jps.net/>.

Cryonics Institute, 24355 Sorrentino Court, Clinton Township, MI 48035; 810-791-5961; fax: 810-792-7062; cryonics@cryonics.org; <http://www.cryonics.org/>.

Trans Time, Incorporated, 3029 Teagarden Street, San Leandro, CA 94577; 510-297-5577; fax: 510-297-5579.