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Extreme Life Extension: Investing in Cryonics for the Long, Long Term

Tiffany Romain

This article explores American conceptualizations of finance, the future, the limits of biological time, and the possibilities of biotechnoscience through an investigation of the social world of cryonics—the freezing of the dead with the hope of future revival. I describe some of the cosmologies of life, death, time, and the management of the future that circulate within cryonics communities, and I draw out relationships between cryonics practices and discourses and more common forms of personal future management prevalent within American neoliberal capitalism. I also illustrate similarities and differences between cryonics and more mainstream biomedical technologies. In doing so, I argue that cryonics is one American manifestation of anxieties about aging, time, and the future. I investigate the impact of biotechnologies on self-making and biosociality, and argue that crafting of selves can be deeply entwined with practices of investment or hope in the future of biomedicine and technology.

Key Words: biosociality; cryonics; cryopreservation; future; investment; temporality

Cryonics is the practice of freezing and storing dead bodies with the hope that future medicine and technology will restore these bodies to life. The premise of cryonics is simple: As biomedicine continues its march ever forward, the criteria for determining death are likely to shift. At some point in the future, those who are pronounced dead and immediately frozen will not be considered dead at all, but merely ensconced in suspended animation awaiting revival. Cryonics, it is believed, could provide a sort of time travel

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to a future in which humankind knows cures for most diseases (and for the damage caused by freezing) and has control over processes of aging and, perhaps, death itself. In the most modest descriptions of cryonics by its practitioners, the service offers a chance at extending life in the future. In the most hopeful descriptions, cryonics offers the possibility of immortality.

The practice of cryonics was directly lifted from science fiction when Robert Ettinger proposed in his 1962 manifesto, *The Prospect of Immortality* (1964), that people engage in great “freezer programs.” In 1966 and 1967, the first two people were frozen. Since then, cryonics practitioners have struggled to place cryonics firmly within the realms of mainstream biomedicine and respected scientific research communities. Their efforts, however, have met with little success.

The roughly 1800 people who make up the cryonics community—those who refer to themselves as “cryonicists”—tell us something about how Americans conceptualize finance, the future, the limits of biological time, and the possibilities of biotechnoscience. Anthropologists and science studies scholars have drawn attention to the ways in which much biomedical research in the United States and elsewhere, particularly in the areas of regenerative medicine and genetics, is driven increasingly by speculative investment in future therapies and cures, many currently only theoretical (Franklin 2003; Hogle 2003). Some have investigated the mechanisms through which speculative investment shapes the biotechnoscientific future (Brown 2003; Brown and Michael 2003). Other scholars have focused on the confluence of biotechnology, global economies, and the flow of ideas about the future of life (Cooper 2006; Rose 2006; Sunder Rajan 2006).

Cryonics offers a view of other forms of speculative investment and future projection of biotechnoscience. Unlike the sites of biomedical research mentioned previously, cryonics is not a profit-making innovation for others’ consumption, and it is unlikely to generate profits anytime soon. Rather, it is a biomedically mediated form of investing in the self, more akin to but significantly different from cosmetic surgery and autologous forms of tissue banking. The future is, by definition, an unknown entity. Nonetheless, most Americans engage in practices of speculating about, protecting against, and planning for the future in a variety of ways. Many of these practices require economic investment—saving in retirement plans; planning vacations; buying health insurance, car insurance, life insurance, and homeowners’ insurance; investing in stocks and bonds; and launching businesses. In examining the specific social world of cryonics, I explore relationships between economic reasoning, biomedicine, technology, and imagination, tracing how some Americans project themselves into the future and future possibilities through acts of investment, particularly ones that are animated

by the promises of biotechnoscience. As I explore in this article, cryonics, while no doubt a rather extreme form of investment in fending off disease, aging, and death, shares many similarities with more conventional, albeit emerging, biomedical services.

Cryonics is a particularly American social practice, created and taken up by a particular type of American: primarily a small faction of white, male, atheist, Libertarian, middle- and upper-middle-income, computer/engineering “geeks” who believe passionately in the free market and its ability to support technological progress. In this article, I investigate the relations between the discourses and practices of cryonics and its underpinnings in the values associated with neoliberal capitalism. I take seriously the premise that cryonics is an investment in the possibility of an extended future and a potential insurance policy against death. I show how cryonics is conceived of as an attempt to gain sovereignty over the limits of biological time, achieved through both monetary investment and the banking of biological objects understood to be actual selves. Cryonics demonstrates a unique way in which time, capital, and biotechnoscience can come together in the name of future life. An examination of the extreme example of cryonics reveals how speculative economic reasoning is applied to lives and bodies in the United States. I argue that cryonics is one response to American anxieties about time, the impending decline of the human body, and its culmination in death that draws on logics of biomedicine, technological progress, and investment forms. I describe some of the many unique aspects of cryonics and some of its similarities to venture capitalism, mainstream biomedical practice, and other sites where investment in the self and biotechnoscience come together, chiefly in other forms of tissue banking.

First, I describe some of the most basic premises of cryonics, particularly the formulations of life, death, and personhood that the community has devised. The relabeling of death as an obstacle rather than an end point, I argue, allows for cryonics to be understood as a form of investment that transports a person from the present into the future. Next, I describe the cryonics community, outlining the unique conditions that make possible the formation of cryonics imaginaries. Third, I describe these social imaginaries of cryonics, those predicated on the possibility of a far reaching future of life in the long, long-term and which contest present temporal limitations of biological life. These imaginaries, unique to cryonics, allow for particular socio-temporal scales and raise paradoxes of present and future tense thinking, born in the bridging of fact and fiction, reality and possibility. Yet, I argue, the dual temporality raised by cryonics is illustrative of how all kinds of investment in the future necessitate living at once in the material world of the present and within imaginaries of the future. Finally, I compare cryonics to other speculative ventures in biomedicine.

This article is based on interviews, participant observation, and archival research conducted primarily between 2001 and 2004. Very few people are immersed fulltime in any of the cryonics organizations. Instead, the cryonics community is made up of those who pay membership dues to a cryonics service organization. However, other types of participation in the community are also important. Cryonicists can participate in online discussion groups, attend conferences and meetings, volunteer on “cryosuspension teams,” work in areas that support cryonics research, and participate in regional community social events such as book groups, movie outings, discussion salons, and parties. Membership in this institution, as described by my informants, can vary from a hobby, a hope, a goal, an adventure, a passion, to one’s life work. In this sense, the institution of cryonics is a rather fragmented, grassroots one. My fieldwork consisted of living and working at Alcor Life Extension Foundation in Scottsdale, Arizona, visiting the Cryonics Institute, participating in cryosuspension trainings, attending conferences and social events, interviewing cryonicists from all parts of the country, following online cryonics discussions, and reading backlogs of cryonics magazines, newsletters, case files, and the science fiction literature that the community cites.

RELABELING DEATH

Cryonics is an American practice. It was conceived of and implemented in the United States, and in 2009, at least 90 percent of participants worldwide live in the United States. At time of writing (2009), six cryonics companies operate in some form worldwide, although two of them, Alcor Life Extension Foundation in Scottsdale, Arizona¹ and the Cryonics Institute in Clinton Township, Michigan, hold the lion’s share of cryonics membership. KrioRus, which opened in 2006 outside of Moscow, is the only active non-American cryonics company. Cryonics emerged in the 1960s during a period of great optimism in America about unprecedented advancement in medicine, computing, and space exploration. Today, the social imaginaries of cryonics are also deeply tied to the promise of advancements in nanotechnology, regenerative medicine, artificial intelligence, neuroscience, and biomedicine more broadly.

Consumers of cryonics services sign a contract with a cryonics company, pay annual membership dues,² and arrange for the eventual lump-sum payment that will cover the costs of preserving and storing the consumer, a cost ranging from \$28,000 to \$150,000 depending on the company and whether a client is storing only his or her head or entire body. To pay this sum, most consumers buy a life insurance policy with a cryonics company as a

beneficiary, which, as the cryonics providers like to emphasize, is affordable for most middle-class Americans. Some cryonicists are extremely wealthy and a few are poor, but most are middle- to upper-middle income. Choosing to sign up for cryonics is not about whether one can afford the luxury but whether one believes, however so slightly, in the possibility that cryonics could work, and whether the idea of being revived in the future is desirable. Table 1, which is circulated on cryonics websites, in conversation, and in cryonics lectures, illustrates the “why not?” approach to investing in cryonics. “Cryonicists”—both those who run cryonics organizations and members of them, two groups that overlap and are at times indistinguishable—are quite forthcoming about there being only a very slim chance, a mere possibility, that life could be resumed in the future, and yet they believe the economic investment is worth that chance.

The cryonics community has created a specific lexicon that tries to normalize the possibility that death can be “defeated” and that refigures a lifetime as spanning the long, long-term. For instance, the entire cryonics community refers to a stored body or head as a “patient.” Sometimes, these patients’ photographs line the walls of a cryonics facility to remind staff that these are not simply bodies in storage but friends and family members with whom they could be reunited one day in the future. In the past decade, cryonics companies began referring to what they do as “vitrification” or “cryopreservation” of bodies or heads, borrowing terms, concepts, and techniques from research cryobiology, but many of the older terms—“freezing,” “cryogenic internment,” “biostasis,” “cryostasis,” “cryonic suspension,” “cryosuspension,” or simply, “suspension”—still linger. The term “cryonicist,” referring to an affiliation with the cryonics community, also refers to a moral, ethical, and political anti-deathist position. Some of the most zealous cryonicists also effectively redefine death as something that is reversible by calling it “the end of the first life cycle” or “deanimation.”

At first glance, cryonics appears to be far from routine biomedicine: non-medically trained people perform operations on dead bodies, store them in warehouses, and hope that future scientists will give them new life. However, cryonics is firmly situated within biomedical configurations of

TABLE 1
Why to Choose Cryonics

	<i>You are suspended</i>	<i>You are not suspended</i>
Cryonics Works	You live	You are dead
Cryonics Doesn't Work	You are dead	You are dead

death. Medical science is increasingly able to manage death and to redefine life's end points (see Arney and Bergen 1984; Franklin and Lock 2003; Kaufman 2000; Lock 2002; Muller and Koenig 1988; Timmermans 1999; Youngner, Arnold, and Schapiro 1999), and the moments at which a doctor makes "the call" can be slippery, as evident by the creation of the Uniform Determination of Death Act. In their own particular remaking of life and death, cryonicists understand that none of us—lay people, doctors, scientists, philosophers, clergy—know when death is or at what point it is too late to retrieve a person from progression toward death. An Alcor Life Extension Foundation handbook describes it this way:

Tomorrow's medicine may well be able to recover patients after hours of absent circulation and breathing at moderate temperatures. Although cultural conditioning may make such a feat seem incredible (raising the "dead," and so on), it would not involve any magic whatsoever. All it would imply is that most past and current pronouncements of death have been premature as a result of limited medical technologies. (Lemler 2001:26)

In their own examination of "death," cryonicists narrow down biomedical categories into even more precise terms. In a Frequently Asked Questions list posted on the Internet in the early 1990s, cryonicists divide death into three distinct categories: "clinical death," "legal death," both found in biomedicine, and "information-theoretical death," a cryonics-specific term (Freeman 1996; see also Merkle 1994). "Information theoretical death" describes the point after which human identity and consciousness can no longer be salvaged from a body as the body decays in the minutes, hours, and days after "clinical" or "legal" death. In other words, "information theoretical death" is the point at which death is no longer reversible. By building on biomedical terminology, cryonicists play out a logic implied in increasingly specific biomedical definitions of death that the point of death can be forever, if incrementally, extended (Callahan 2000; Elliott 2003). The FAQ authors and the cryonicists they speak for define death in their own terms. Cryonics is predicated on the hope that bodies are being frozen before the occurrence of "information theoretical death."

Cryonicists also place great currency in the term "legal death," the point at which a doctor pronounces death and a death certificate is signed, and the point at which laws protecting living persons no longer apply. After legal death, the body is no longer under medical supervision and the state has few claims on this body. Having named a fellow cryonicist "next of kin," the body can be turned over to that person—and thus to a cryonics company—to be "disposed of" in the form of preservation and storage.

Cryonicists understand “legal death” simply as a legal pronouncement that releases the (possibly life containing) body from the purview of the state the moment at which it is set free. These terms describe and reinforce a particular cosmological understanding that death doesn’t have to be inevitable and that lives can be freed from the authority of the state, ironically through the state’s own regulatory practices.

Cryonics is rooted in US political principles in which the state endows individuals with power to act in their own best interest. Cryonicists, unusually cognizant of the complex mechanics of biopolitics, make attempts to limit any government control over their bodies, even after death. Almost all cryonicists wear med-alert bracelets to communicate their desire to be cryopreserved to potential coroners or doctors. In a very unique twist on this concept, one cryonicist designed a tattoo for this same purpose (see Figure 1). Part of the tattoo reads as follows:

Unconscious, seriously injured or clinically dead, call. I have legally arranged to donate my body. Contact now, as every second literally counts in synapse preservation! Thank you. [...] A plea directly from me. . . . Please do not conduct an autopsy on me for any reason. I hereby release all legal responsibility to any people/companies/others involved in my death, accidental, intentional, or otherwise. [...] Please respect my last wishes to personal [...] sovereignty by not conducting an autopsy on me for any reason, whatsoever.

Cryonicists strategically use loopholes within the state regulation of bodies and lives to secure and sanctify their project. For instance, Alcor accepts



FIGURE 1 Tattoo for a coroner. Photograph by Bobby June.

“anatomical donations,” cryonics companies sometimes act as funerary services, and many cryonicists carry cards in their wallets claiming “religious” objections to autopsy. Steeped in Libertarian imaginaries, this technology and movement offer cryonicists a chance to claim sovereignty, to take control of their own bodies, reclaiming them in the face of government, and in the face of nature. In other words, cryonics is an exercise in what Foucault called the “right of the social body to ensure, maintain, or develop its life” (Foucault 1988b:136).

As one informant put it, cryonics is an “outright rebellion against death.” The redefinition of death is what allows cryonicists to describe their practice as an investment in their own future, one that might result in being revived. Cryonics, like all forms of capital investment, is dependent on imaginaries of and hopes for certain future outcomes. However, unlike investments in IRAs, insurance policies, or college educations that promise future financial security, cryonics is an investment that offers the potential return of life unencumbered by the failings of human biology that currently define the human experience. The return that investing in cryonics may offer is not financial security, but, in essence, time.

THE CONDITIONS OF POSSIBILITY FOR CRYONICS IMAGINARIES

In the fall of 2002, at the Extreme Life Extension conference hosted by the cryonics company Alcor Life Extension Foundation, the conference hall was abuzz with excitement. A couple hundred people sat in the large hall, listening attentively to lectures, anxious to learn more about speculative technological developments that would radically extend human lifespans. Many of these people spent coffee breaks networking with like-minded people. About 50 people in the hall, those who stood or sat in the back, were members of the press, some taking notes, others stepping out for coffee, and others pulling charismatic speakers and attendees aside for on-camera interviews, capturing sound bites such as the well-rehearsed, “Cryonics is the second worst thing that can happen to you, death being the first.”

The speakers for the event were the members of the cryonics community who hold advanced degrees and conduct research in the relevant fields of nanotechnology, artificial intelligence, gerontology, cryobiology, emergency medicine, and stem cell research. Each of the speakers made bold predictions about the future, claiming that humankind is on the brink of an evolutionary change, which some called the “techno-rapture” or the “Singularity.” In the near future, they told us, humans could cease to age and lifespans would last centuries, if not millennia. Most of these

speculators, including radical gerontologist Aubrey de Grey, claimed that the youngest people in the room would probably not face death for a very, *very* long time. Those who are older, well, those people might die before these revolutions in nanomedicine, regenerative therapies, and intelligent machinery could be realized. For those people, the best bet for radically extended lifespans is cryonics. The speakers urged everyone in the room to make arrangements with a cryonics organization to have their bodies (or heads) cryopreserved at death so that they could be revived in the future, after the problems of disease and aging had been solved, a time after a “cure for death” had been found. They told us to view cryonics as an insurance policy: cryonics is there just in case you should “die.”³

At the Extreme Life Extension conference, Alcor representatives addressed the usual questions people raise about cryonics. They spoke of various legal issues that limit and/or protect cryonics, described how Alcor manages funds, described basic procedures, and related Alcor’s membership statistics (at that time about 500 members and 45 members in storage). Some speakers shared some of cryonics’ history, explicitly aligning cryonics with Enlightenment traditions of science, rationality, and progress. Nanotechnology scientist Ralph Merkle claimed Benjamin Franklin as the “godfather of cryonics,” as virtually all cryonics advocates do, because in one of his writings Franklin had expressed a wish to witness the future development of the United States of America by embalming himself in a casket of wine in such a way that he could emerge from time to time and experience life (see, for instance, Drexler 1986:130; Gruman 1977). Claims were made such as “Death is an outrage! Let’s do something about it,” and scientists including Michael West responded by describing the work that they are doing to defeat it.

While at the podium, the speakers aimed to balance radical predictions of “extreme life extension” with scientific evidence, although several broke into political asides condemning the regulation of stem cell research and the FDA’s control of potential anti-aging medications. During breaks, cryonicists—both attendees and speakers—spotted one another by the med-alert bracelet they wore with Alcor Life Extension Foundation’s name and emergency contact phone number, and they spoke together more boldly, using the word “immortality” to describe their goal, and discussed the rampant “deathism” that plagues human societies.

When I interviewed him, Jerry Lemler, former president of Alcor, claimed that a “typical cryonicist” is highly educated, white, American, male, well-read, employed in a computer or technical field, “not very social,” often single, has few or no children, is atheistic or agnostic, and is not wealthy but financially stable. Lemler also told me that cryonicists tend to have very strong Libertarian political views, believing in the rights of the

individual and the power of the free market, although Lemler himself is a self-proclaimed “bleeding heart Liberal.” Less than 25 percent of Alcor’s members were women, and only a small fraction of these women joined purely out of their own interest; most female Alcor members were the wives, partners, daughters, or mothers of a man who joined first. Lemler also said that cryonicists are highly adventurous, although he added, “You may not see that in their *current* lives. In fact, we have the bookish types, if you will, as I just described. You wouldn’t think that they’d be willing to take a chance on this particular adventure.” In fact, cryonicists often discuss how re-formulating one’s notions of life and death in such a way that cryonics makes sense—rejecting the most fundamental and universal aspect of human life, death—is considered an “adventure” in and of itself.

Like any group, the cryonics community is by no means uniform in demography, thought, or opinion. The majority of cryonicists I met were, indeed, software or mechanical engineers. But I also encountered venture capitalists, traders, homemakers, a shaman, a journalist, a university professor, cryobiologists, an insurance broker, artificial intelligence designers, a musician, men, women, children, people of color, people in perfect health, and people who were terminally ill. Nevertheless, a sort of Weberian “ideal type” (Weber 2001[1930]) of the typical cryonicist has emerged, and this is how cryonicists recognize themselves and one another. In the spring of 2001, I attended a meeting and potluck of cryonics members in the San Francisco Bay Area. After several topics were discussed in a very orderly fashion—introductions of new members, a recent suspension, and a report on Alcor’s recent board meeting—several men got into a heated technical debate. One member proposed that an existing technology that monitors heart rate and body temperature could be tweaked for usage by cryonicists. Several men got into a friendly but rather aggressive argument about how best to write a computer program that would interface the device and Alcor’s communication systems.⁴ In an effort to bring the quite passionate technical discussion to a close, one member made a public aside to me, the anthropologist, loud enough for the benefit of everyone in the room. He said, “You know that a typical cryonicist is a male computer programmer, don’t you?” Everyone laughed. Another member shouted out, “And a Libertarian!” Everyone laughed harder. Everyone appeared to enjoy the joke, which seemed to reaffirm the group’s identity and to promote a kind of solidarity among them. Not all members need to fit this ideal type perfectly, but some dominant characteristics that the majority of the people in the room embodied define which types of people, passions, and behaviors belonged and which did not.

Beyond membership at the practical level, this group shares moral, ethical, and political ideas about a biomedically produced, radically extended

life in the future. I find it useful to employ the term “biosociality” to describe this group (Rabinow 1992). Biosociality takes into account the impact of biotechnoscience indices while also allowing for enquiry into their productive capacities. While Rabinow and others have used his term to describe identities configured by particular biomedically defined conditions such as genetic disease or physical disability (see Kohrman 2005; Rapp 1999; Rapp, Heath, and Taussig 2001), my application is somewhat different. I apply it to a group that collectively recasts mortality as a failing of health. The biosociality that I identify among cryonicists is co-constitutive of an emerging social world that consists of imaginaries of biomedically mediated immortal life and an identity formed in relationship to these projections. Cryonicists begin with biomedical definitions and approaches, but then jointly imagine particular sets of far-reaching possibilities through which immortal subjectivities are forged.

Members value uniqueness, “maverick” sensibilities, and a willingness to embrace “new ideas” that include not only cryonics but also fantasies of space colonization and bodily transformation. Many cryonicists also self-describe as “outsiders,” “completely independent,” or “self-reliant,” and most often and most importantly, as “individualists.” I have heard many cryonicists point out the complete irony of joining a cryonics organization but claim, always with a laugh, “You can’t freeze yourself!” Such a dispersed community, isolated by geography and by personal choice, is bound by shared magazines, books,⁵ listservs, and websites, through which imaginaries are circulated. The many imaginaries of human life post-reanimation are quite wide-ranging and include waking in the future in an optimized version of one’s current physical self (no need for glasses, restored full head of hair); waking in an 18-year-old version of oneself; minimal or radical changes in physical appearance and continual alteration of appearance and/or gender for the sake of experience; living in a fully cyborg, better-than-human body; cloning oneself and transferring memories to the clone in order to make “back-up copies”; uploading oneself into a computer and living virtually; uploading consciousness and sending out remote controlled robot proxies to unfriendly environments. The importance of individual choice is always emphasized in discussions of these possibilities, as it is also in discussions of the future of society.

Cryonics is both a consumer service and a grassroots movement, with the aim of bringing about a future in which humans are free individuals. For most cryonicists, the validity of the investment in cryonics is secured through a “What have we got to lose?” attitude, a tremendous faith in the future of both biotechnoscience and the free market, and Libertarian values including self-interest and individual freedom. And, in making an investment in cryonics services, cryonicists attempt to claim sovereignty over

their bodies and futures. Biosociality among cryonicists consists of imaginaries of the future of biotechnoscience and cosmologies of life and human potential. The imaginaries that permeate cryonics are not simply of radically extended lifespans, but are technophilic, biological materialist, American, atheistic, Libertarian, and masculine in nature.

SOCIO-TEMPORAL SCALES OF INVESTING IN THE LONG, LONG-TERM

Cryonics is a technology that enables a sort of saving, planning, and extension of people into material and corporeal objects that are accumulated and, literally, banked for future use and animation. In this way, cryonics fits neatly within neoliberal cultural frameworks in which individuals must help themselves rather than turn to the government and in which the free market is seen as efficient and progressive. Predicated on the fear of scarcity and loss, capitalism asks people to consider themselves through possessions, materials, savings, and plans. To counter the possibility of loss—loss of life—cryonics allows for (possible, further) accumulation. However, unlike the mundane putting away of money for the future, preserving parts of oneself—potential life—has the allure of exceptionalism. Cryonics is very much a capitalist form that is similar to other types of insurance and speculative investment, but it is endowed with a layer of significance that is one's own personhood and life itself. Consumers buy the privilege to imagine a utopian future and abundant life, and they orient themselves toward this future; yet this is a privilege few can afford and even fewer think—or feel entitled—to purchase. Cryonics, and the imaginings it inspires in those who purchase services, is based on the hope that death will be defeated and thus time will become irrelevant.

Among the middle- and upper-classes in post-industrialized settings where, arguably, health is optimized, biological time is increasingly rendered as a problem—time is limited by biological function. Cryonics is a uniquely American strategy for transcending the limits of time.⁶ This transcendence is accomplished through the banking of one's body—investing it—with the potential return of future life. Through cryosuspension, bodies are protected from decay while the anticipated steady progress of science, technology, and medicine can continue. The community—this biosocial grouping—therefore places great value in prospective thinking. The past, for this community, is only a referent for the future. It is something to look back on to measure human progress.

The socio-temporal scales of cryonics require simultaneously existing both in the present and in projections of the future, which is a feature of

American risk-society (Lupton 1999). Many Americans engage in the practice of imagining the future, setting goals and working toward them and protecting against undesirable futures. Unlike other Americans, however, cryonicists imagine possibilities for their lives in a very distant future, an imagined future that is distinct from the life they intend to live until they are frozen. At the same time, cryonicists must also contend with the present, mundane, day-to-day tasks of middle-class American life in a very practical sense—making an income, managing finances, paying the life insurance bill, filing paperwork—and many of these daily, present-minded tasks make imagining such futures possible for cryonicists. While highly future-oriented, cryonics requires preparation in the present, here, and now.

Some cryonicists protect their current health, keenly aware that death is lurking around every corner. However, unlike many health conscious Americans, these cryonicists exercise and eat well not only for the purpose of feeling healthy in the present or in old-age, but also to protect themselves from premature death or debilitating conditions that would render their bodies or brains less than optimal for preservation. In addition, living longer means taking advantage of the more refined procedures for whole body and neuro cryosuspension, which are improved over time. Many cryonicists also take daily vitamins and supplements associated with anti-aging; some use controversial treatments such as human growth hormone, and a few practice calorie restriction diets (the only proven life-extension treatment available).⁷ Further, a small number of cryonicists also take daily safety precautions above and beyond seat belts in order to ensure that should an accident occur, they can still be cryopreserved. For instance, in rumors circulated within the community, one man refuses to fly in an airplane because, as unlikely as an accident is, a body destroyed in a plane wreck would be impossible to preserve. In other words, for cryonicists there is a very different risk associated with bad health and accidents; that risk calls for different day-to-day risk-management strategies and different ways of participating in a risk-society.

Part of the ethos of the cryonics community is an explicit dedication to Enlightenment ideals of self-improvement. The parts of the Enlightenment that cryonicists claim as heritage are those that “celebrate and facilitate the liberation of ‘Man’ as a free and active individual, endowed with consciousness and will” (Harvey 1989:249). Cryonics is understood by its advocates as an obvious way to “liberate man” from his most oppressive enemy, death, and cryonicists see themselves as agents free of the burdens of the cultural norms that view death as a natural part of life, actively creating a new and better world for themselves. In this community, the goal of self-improvement is expressed in lifestyle choices such as a calorie restriction diet, wearing the cryonics med-alert bracelet, gaining education, realizing

class aspirations, and, ultimately, buying cryonics services in the hope of “cheating death.” Attending movie and dinner outings with other cryonists where science fiction movies and books are discussed in concert with present-day scientific and technical research are additional ways in which cryonists embrace and embody imaginaries of immortality and the future of the human species. Employing—and contesting—these lifestyle choices and imaginaries of immortal futures (and the technical practices that have emerged along with them) shape participants’ senses of self and allow people to consciously and agentively make themselves subjects; we might even call them immortal subjects.

This anti-deathist stance—this problematization of death—also challenges normative American notions of kinship, the life course, and time. As self-proclaimed non-traditionalists, cryonists understand kinship and even the lifespan as evolving categories subject to change. Most members of the cryonics community are childless, and while in many cases this may be coincidental, many choose not to have children as a matter of principle based on the importance of tending to the self through ongoing education, financial achievement, and other forms of self-improvement. In a rather Foucauldian sense of shaping of the subject and the self (Foucault 1988a), cryonists tend to adopt particular values, ethics, and goals. For many cryonists, having children is considered an unnecessary diversion of resources that can and should be devoted to the self, especially if one is to achieve immortality. Phil, one of the few cryonists I know with children, once said to me, “They’re good kids. But if their moms hadn’t wanted them, they wouldn’t exist.” He did not see much value in passing on genes or creating new generations and preferred to work toward a world in which people no longer need to procreate since the extension of human lifespans would maintain the human species. Indeed, I have heard some in the community theorize that having children is an evolutionary byproduct that could very well become vestigial as humans come closer and closer to becoming immortal. I have also heard several lay theories within the cryonics community about genetic or brain structure differences between men and women that cause men to favor life-extension philosophies and women to favor procreation and the conservative maintenance of cultural traditions.

Imagining one’s life in the long, long-term also reorients one’s goals and aspirations. For instance, several cryonists have told me that they plan to attain multiple PhDs in the future, once time is no longer a limited resource. For some cryonists, the mere possibility of reanimation has material manifestations; for instance, some cryonists have devised ways to invest money in an interest earning dynasty trust so that it could be accessed after emergence from cryonic suspension in the future (and after it had accrued significant interest), rather than bequeath money to others. In a very

different example, Allison wanted to have children but decided that she will wait until post-reanimation because she was single and in her mid-30s and thus approaching age-related infertility (medicine of the future would also reverse loss of fertility, she assumed). When I suggested that she might freeze her eggs so that she could possibly have genetically related children later in life, she responded that she has too much work to accomplish in the immediate future and would rather wait until she “came back” to experience parenthood. Like many cryonicists, the life she lived in the present was one of work and preparation, a kind of worldly asceticism, a latent Protestant lineage (Weber 2001[1930]).

During my field research, I found that for some consumers of cryonics services, the reorientation toward the future meant living largely in the framework of possibility. Several cryonicists expressed to me a desire to be better people and to live more adventurously and more fully when they come back in round two, post-reanimation. Many of the cryonicists’ homes I visited appeared as if the inhabitants had just moved in, often open spaces with sparse, functional furniture, one or more computers, a small display of photographs, a television, and, often, a large collection of books. These spaces hint at a life lived in the virtual space of the computer and in the imagined space of literature. Other cryonicists described themselves as grabbing hold of life by going on adventures, having parties, or developing deep emotional relationships. These cryonicists often aligned themselves with overlapping groups such as Futurists, Extropians, and Transhumanists,⁸ which each have certain values and lifestyles associated with them that tend to be more adventurous and action oriented than cryonics, *per se*.

Cryonics organizations are necessarily focused on both the present and the distant future, in a curious, seemingly paradoxical fashion. One evening after work at Alcor, I asked a longtime employee why Alcor did not recycle anything, not even paper.⁹ He gave a lengthy explanation of how recycling is not cost effective for Alcor nor for the recycling industry in general. He explained that separating trash by different colors of glass, different types of plastic, different types of paper would be “too much work.” I pointed out that if Alcor’s entire purpose is to look toward the future, perhaps Alcor might take steps toward maintaining a planet that can sustain life. He said that Alcor did not have the resources it needs to “seriously weigh the costs and benefits of recycling in relationship to advancing technology.” Ironically, it seemed to me, Alcor had too many pressing day-to-day concerns to think through the sustainability of human life on the planet in the next century. Instead, Alcor placed great hopes in the future progress of technology to take charge of problems such as climate change, pollution, and diminishing resources.

I interpret this Alcor employee's comments as especially indicative of the ideological futurity of cryonics. The cryonics community, in general, has an unwavering belief in the free market, the future of technology and extra-terrestrial colonization, all of which has been used to counter environmentalist regulatory efforts to protect against global warming and the destruction of environments. Many cryonicists told me that if government were greatly reduced and the free market were truly free, then the incentive to make profit by addressing people's needs should be enough to bring about a much better future. But, more than this, just as few members value having children, few who I met were convinced by community-oriented environmental slogans like, "We must consider the impact of our decisions for the next seven generations." Instead, cryonicists point out that if future technology is unable to fix the various problems that face human survival, cryonicists will simply be thawed and let die for good. Despite the tremendous hope cryonicists hold for the future of humanity, most cryonicists are primarily motivated by their personal hopes of being able to experience it.

Cryonicists' engagement with the future is no more evident than in their practice of making predictions—for instance, how global warming will be combated, the year in which a computer of equal intelligence to humans will be built, or how the future of human/machine interaction and hybridity will unfold. This practice has particular importance as it is considered strategic in building desirable futures and is a critical part of ongoing conversations within the community. This work of imagining possible futures binds the community and gives it form and focus. Following from Enlightenment ideals, they attempt to command the future through prediction, imagining a distant future and then setting a trajectory toward it in order to bring it about. Some of the more active cryonicists engage in a process of trying to dictate the unfolding of the future through their work in fields such as nanotechnology, artificial intelligence, gerontology, or cryobiology, although they do this not so much for the sake of future generations, but for the purpose of placing themselves in that future.

CONCLUSION: PROMISSORY FUTURES OF BIOTECHNOSCIENCE

There is a promissory nature in much of emerging biotechnoscience. In her analysis of advanced reproductive technologies, Charis Thompson writes,

The biomedical mode of reproduction represents a change in the temporal dimension that is relevant to assigning economic value—a shift from the primary dimension being the past and present to its being something that

unfolds over time in the future. Likewise, it signals a shift away from production, productivity, and profit and toward knowledge, technologies of life, and promise. (2005:258)

In similar ways, biotech industries such as genetic engineering, stem-cell research, and regenerative medicine are each based on promises for future innovation, the imagined unfolding of new, life-giving advancements down the road. Waldby called this the “biomedical imagination”: “the speculative, propositional fabric of medical thought, the generally disavowed dream work performed by biomedical theory and innovation” (Waldby 2006:56). Practices of imagining and speculating are integral to the process of innovation.

The speculative nature of regenerative medicine, in particular, both attracts investors with its promise of future profits *and* carries the alluring potential of extending lifespans (Cooper 2006; Hogle 2003). Brown and Michaels argued that through the imagining of possible technoscientific futures and the circulation of these imaginaries, hope is generated among broad assemblages of people. This hope is a key ingredient in mobilizing institutional support and financial resources toward making these futures come into being (Brown 2003; Brown and Michael 2003; Michael 2000). Examples such as therapeutic stem cell research, gene therapy, and the Human Genome project show that hope and hype are rallying forces in technoscientific development, regardless of whether the hopes pinned on a technology ever come to bear (Brown 2003). Hope, then, is constitutive; it garners capital for biotech companies and brings futures into the present. Simply put, “Futures are contingent, they are imagined, fought for, resisted and embraced in the present—in order to draw an imagined future into the real-time now” (Brown 2003:17).

Cryonics is different from these ventures in significant ways. First, it gets very little financial support since few see this as a sound investment for the outside investor interested in profits. The monetary support it does get through donations, investments, and inheritances is from within the cryonics community, from those who believe passionately in the cause. Second, the imaginaries linked to cryonics have yet to inspire hope on a broad scale. Third, and most important, cryonics is an investment in and of the self. Individuals invest their money with the hope of reaping returns in their own immortal life.

It is perhaps more fruitful to compare cryonics to other applications of cryopreservation. Elsewhere, I write about oocyte cryopreservation (Romain 2010). Like cryonics, the emerging practice of healthy women freezing their own, unfertilized eggs for their own future use is described by consumers as both a form of investment (in the possibility of a future family) and as insurance (against the onset of infertility due to normal

aging). In contrast to cryonics, practiced primarily by men who want to become immortal and place themselves into the future, oocyte preservation is focused on the near future and in replicating normative kinship structures. It allows women to fit within the professional workforce and its notions of time while keeping open the possibility of becoming mothers in the future. Marketed to single, professionally successful, career-minded women, it is described by its advocates as a proactive, legitimate, and logical solution to a problem of diminishing time—providing “freedom” from the “biological clock”—and offering greater opportunities for finding a partner and creating a genetically cohesive family.

Umbilical cord blood cryopreservation also holds many similarities to cryonics. Like cryonics, cord blood banking is hedging on possibilities of future innovation: “[Parents] invest in the possibility that cord blood will achieve the plasticity of embryonic stem cell, with their apparently endless, pluripotent possibilities for multiplication and recapacitation” (Waldby 2006:65). Waldby examined private cord blood preservation (in contrast to donation to publicly shared banks) as a future-oriented, self-serving investment that may or may not yield returns for the family holding the account, likening it to forms of venture capital. Waldby argued that private cord blood banking is indicative of neoliberal shifts in society and medicine, in which individuals are responsible for their own well-being, risk-management, and the management of their own futures.

Cryonics, too, with its focus on the individual and its faith in the free-market, harnesses neoliberal cultural frameworks for thinking about the future. The possible return that cryonics offers—the possibility of extending and expanding an individual’s lifespan—is not far from the promises offered by umbilical cord blood banking, which also transports precious life-containing cells to the future through cryopreservation. However, the investment in cryonics offers the possibility of something more extreme than the regenerative therapies just around the corner: cryonics offers possible immortality. This is an exciting prospect, but a high-risk investment. Who’s to say that cryonics companies will stay viable in the long-term? Are national and international political and economic structures stable enough to support such companies over centuries or even millennia? How can one know if medicine will ever advance enough to revive dead, frozen bodies? No matter how unlikely cryonics is to work, the high financial (and in many cases social) risk cryonics entails is one that some are more than willing to take. The investment in cryonics is a way of making a claim of sovereignty over one’s body and one’s future that is strategic, optimistic, and defiant. It is a claim steeped in cosmological, moral, and political imaginaries characterized by radical individualism, projections of biotechnoscientific progress, and faith in the free market.

Cryonics offers a view of how time itself can be harnessed as a commodity to market and sell, here through a symbolically powerful link to life and its preservation for the future. This form of “buying time” asks consumers to imagine abundant future life—to fantasize, dream, hope, and to project into a possible future. Through attempts to “buy time,” consumers try to manage otherwise unpredictable futures. In doing so, they create new sensibilities and assurances about who they are in the present.

Benjamin Franklin’s influence on cryonics extends far beyond his whimsical desire for embalment. His famous adage, key to American capitalism, “Remember that time is money” (Weber 2001[1930]), is central to the future investment of cryonics. During the industrial revolution, time and money were paired through the hourly wage whereby time was remarkably transformed into billable parcels (e.g., Thompson 1967). This pairing also separated time into two distinct categories—labor time and leisure time. Time became something to be accumulated for later enjoyment. Weber has elaborated on the American, Protestant, and capitalist ways that Americans “buy time” and “save time” by “managing time” better (Weber 2001[1930]). Cryonics links time and money in ways that are both similar and different. Cryonics offers the possibility that “more time” can be bought and sold in the distant, abstract, unknown future. Ultimately, cryonicists invest in the possibility that time will become irrelevant as death is eliminated in a technologically advanced, distant future. Perhaps, then, cryonics is best viewed as a new form of pension, but rather than offering money, the return of the investment is time.

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NOTES

1. Alcor moved from Southern California to Arizona, a location relatively free from natural and geological disasters, such as earthquakes and tornados, and within a political landscape characterized by de-regulation.
2. Basic annual membership fees are \$478 at Alcor Life Extension Foundation and \$120 at Cryonics Institute. All costs are as of January 2010.
3. Several other biological banking projects are referred to as “insurance policies” including the cryopreservation of human reproductive tissues and the Svalbard Global Seed Vault, which stores back-up collections of crop seeds to ensure future crop diversity.

4. This was a device to be worn by the elderly or ill to monitor heart rate and body temperature, equipped to call an emergency medical response team should readings fall out of a healthy range. Cryonicists suggested that the monitor could be worn by cryonicists and reprogrammed to email Alcor and other cryonicists automatically if the member's heart rate stopped all together, sending a "cryosuspension team" to the member's home as quickly as possible.
5. During my field research I enjoyed looking through informants' bookshelves, which were always dominated by science fiction, especially the work of Robert Heinlein, Frederick Pohl, and Vernor Vinge. Collections also usually included Ayn Rand, Richard Dawkin's *The Selfish Gene*, texts on nanotechnology, historical and biographical work, and texts that have been produced by other cryonicists.
6. See Franklin's discussion of the Geron Corporation (2003:121–122). The American or Californian promise to extend lifespans she alludes to is resonant here. Not only is California the state with the largest number of cryonicists, but Michael West, the founder of Geron, is a scientific advisor to Alcor.
7. Supplements are often purchased through Life Extension Foundation, an organization dedicated to anti-aging medicine and owned by a long-time cryonicist instrumental in cryonics advocacy and research support since the 1960s.
8. These three groups overlap in membership, interests, and goals. The Extropy Institute, now defunct, was a philosophical and activist group dedicated to overcoming human biological limits. Transhumanists embrace the improvement of humans through medicine and technology, and, perhaps, by merging with machines. The Futurists gathered to share interests in emerging technologies and ideas.
9. This was early 2004 and pre- *An Inconvenient Truth*.

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