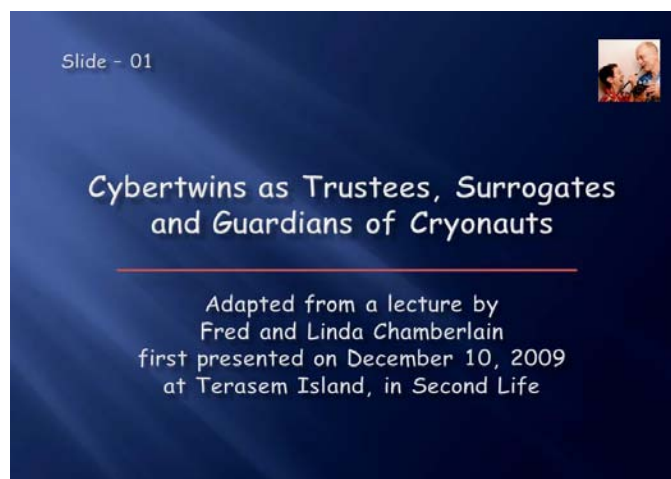


This PDF file contains the same text and slides as will be presented (or were presented), prerecorded, in Second Life on Terasem Island as part of the Turing Church Online Workshop 2, on Sunday 11 December, 2011.

Cybertwins as Trustees, Surrogates and Guardians of Cryonauts

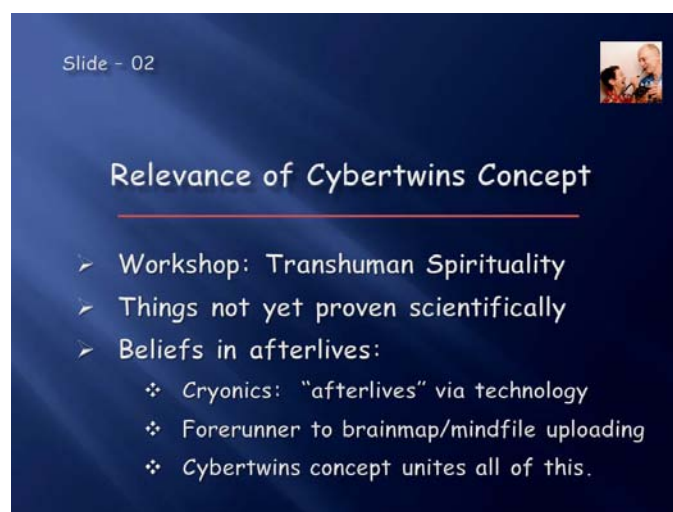
This article was adapted from a talk given by Fred and Linda Chamberlain at the 5th Annual Colloquium on the Law of Futuristic Persons on December 10, 2009, at the Terasem Island Amphitheatre in Second Life.

(Note by Editor with the article, as published in the Terasem Journal of Personal Cyberconsciousness: “Fred and Linda Chamberlain, pioneers in the cryonics movement, contemplate to whom and how their desires in cryopreservation and revival are best entrusted.”)




(Fred – Slide 01) Hi, I’m Fred Chamberlain.

(Linda – same slide) And, I’m Linda Chamberlain. As Giulio probably just mentioned, our talk is pre-recorded because we couldn’t be with you personally today.



(Fred – Slide 02) This Workshop is about transhumanist spirituality, but how does the concept of cybertwins for cryonauts fit in? Spirituality, in terms of religious belief, touches on things not yet proven scientifically, “afterlives” in particular. Cryonics was the first radical program to pursue afterlives via reanimation technology, and as such has helped kindle and reinforce other ideas such as brainmap uploading and mindfile emulation as pathways to personal cyberconsciousness. The cybertwin concept ties all of this together.

Slide - 03




Martine Rothblatt:

"Many people nowadays get their knickers twisted over the word "religion." It is just a word. It just means a system of belief, more than can be immediately scientifically proven. I think everyone is religious because everyone believes in something, has faith in something. The scientist has faith in her hypothesis, or her instruments, or she wouldn't bother. If religion means more, it means belief in something godlike. But the 21st century is more godlike for most people than was the 12th century. To believe that technology and culture is making us more all-knowing, more all-powerful, more all-good is to be religious. Godness in the making is something godlike."

(Linda – Slide 03) In a wonderful posting that Martine Rothblatt put on Google+ a few months ago she said, in part: “Many people nowadays get their knickers twisted over the word ‘religion.’ It is just a word. It just means a system of belief, more than can be immediately scientifically proven. I think everyone is religious because everyone believes in something, has faith in something. The scientist has faith in her hypothesis, or her instruments, or she wouldn't bother. If religion means more, it means belief in something godlike. But the 21st century is more godlike for most people than was the 12th century. To believe that technology and culture is making us more all-knowing, more all-powerful, more all-good is to be religious. Godness in the making is something godlike.”

Slide - 04




Tie-In with Personal Cyberconsciousness

- Religion - “belief in some afterlife”
 - ❖ Revitalization of oneself from mindfiles?
 - ❖ Surely this is an afterlife!
 - ❖ (“based on one’s digital reflections”)
- Endless life! Joyful Immortality!
 - ❖ Terasemers are Transreligious
 - ❖ Terasem - Mindfile systems - Data storage
 - ❖ Just like cryonicists suspending people in LN2

(Fred – Slide 04) Martine added, “If religion means more, it means belief in some afterlife. But surely revitalization of oneself from one's digital reflections is an afterlife.” And she said, “If you believe technology and ethics will ultimately make life joyfully immortal, then you are religious, or as we say in Terasem, transreligious.” This is more than just an “idea”, to us. Terasem has created and offers, without charge, mindfile building system access and data storage on a committed basis, for those who grasp this vision. This is just as realistic a prospect, to some of us, as placing people in liquid nitrogen with a view to someday, somehow, reanimating them as biological “continuers” of themselves.

Slide - 05




Need for Guardians in Cryostasis

- 40+ years - cryonics ups / downs
- Challenges - financial and political
- Patient safety - long periods of time
- Changes in both technology and culture

(Linda – Slide 05) Fred and I have long felt that we will need powerful and trustworthy guardians while in biostasis¹. A little personal history will help you see why we feel so strongly about this. Active involvement within the cryonics community for forty years, which includes being the founders of the Alcor Life Extension Foundation in California back in the early 1970s, before it moved to Arizona, made us intimately familiar with the challenges, both political and financial, of keeping cryonauts safe for what might be an extended period of time, depending on how both technology and our culture progress.

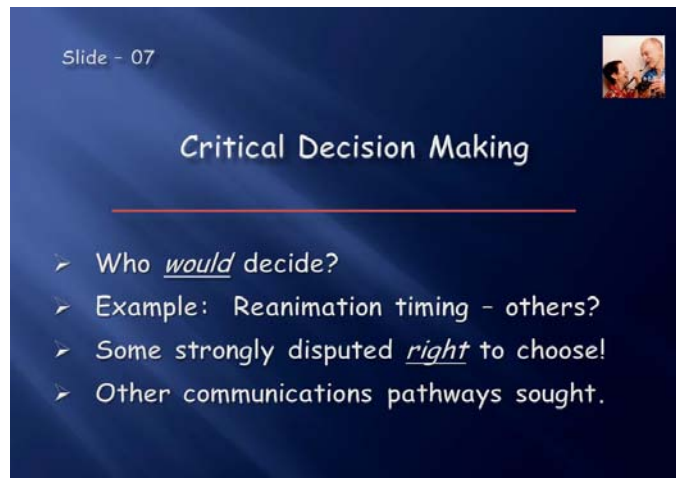
Slide - 06



CSC History / LifePact

- Disaster - Cryonics Society of California
 - ❖ CSC weak - Left it and started Alcor
 - ❖ Years later - CSC patients allowed to thaw
 - ❖ About a dozen - secrecy - no outsiders knew
- LifePact - reanimation oriented project
 - ❖ Video interviews - expressed preferences
 - ❖ Who would be speak for frozen patients?
 - ❖ At reanimation? If organizations failed?

(Fred – Slide 06) In the 1970's, prior to creating the early Alcor, we left the Cryonics Society of California due to their weaknesses and lack of willingness to improve. Years later, our fears were sadly justified when nearly a dozen patients were lost, allowed to thaw, with no notice to anyone. In the late 1980's we launched an organization named LifePact² to help prepare for reanimation, including video interviews to archive personal memories, attitudes, preferences as to reanimation and many other relevant topics. The purpose was to guide our cryonics organizations and future reanimation teams. Who would speak for our parents, already in cryostasis, if we were in that state ourselves? Who would speak for us? What if our cryonics organization went defunct, and rescue plans were being negotiated among various groups? Who, if anyone, would represent us in making decisions on our behalf?

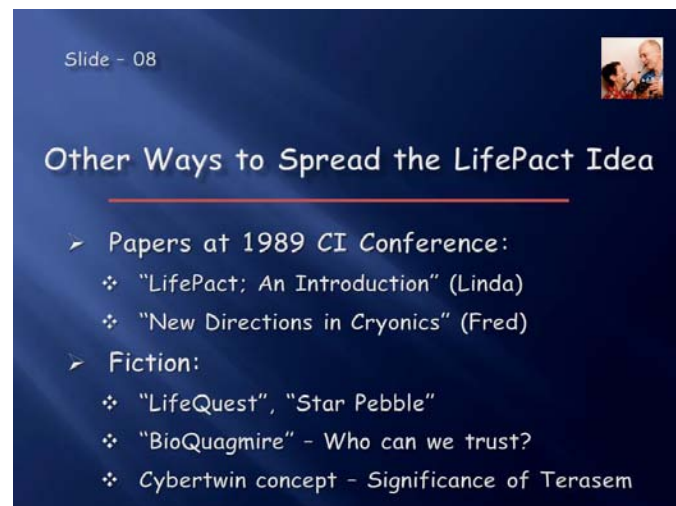


Slide - 07

Critical Decision Making

- Who *would* decide?
- Example: Reanimation timing - others?
- Some strongly disputed *right* to choose!
- Other communications pathways sought.

(Linda – Slide 07) Who would make those critical decisions? What about personal factors, such as being reanimated only at the same time as others? We always felt strongly that cryonics patients should be able to leave instructions about such things, and that these wishes should be respected and carried out. Unfortunately, we encountered other cryonicists who disputed the rights of cryonauts to make personal decisions of this kind, about how their future lives would unfold. These cryonicists also strongly opposed projects of a LifePact kind. We felt we had to find broader ways to advocate that the personal choices of cryonauts should be respected and honored.




Slide - 08

Other Ways to Spread the LifePact Idea

- Papers at 1989 CI Conference:
 - ❖ "LifePact; An Introduction" (Linda)
 - ❖ "New Directions in Cryonics" (Fred)
- Fiction:
 - ❖ "LifeQuest", "Star Pebble"
 - ❖ "BioQuagmire" - Who can we trust?
 - ❖ Cybertwin concept - Significance of Terasem

(Fred – Slide 08) We presented papers in 1989 at a Cryonics Institute conference about planning for reanimation. At the same time we were writing and publishing the *LifeQuest*³ short stories about cryonics, uploading, etc. Linda’s novel, *Star Pebble*⁴, explores how people might interact in a mutually protective way in a culture where biostasis and bioreanimation are taken for granted. My book *BioQuagmire*⁵, asks, “Who can we trust to watch out for us while in cryostasis, make decisions about reanimation, and respect our personal preferences?” A short synopsis of *BioQuagmire* may help illustrate where the Cybertwin concept came from, and why we were so attracted to Terasem⁶ and its CyBeRev Project to facilitate personal cyberconsciousness⁷.

Slide - 09 


BioQuagmire - Synopsis

- 21st Century - lack of trust in future leaders
 - ❖ No consent for reanimation unless - by
 - ❖ Biological twins of couple, as adults, to be -
 - ❖ Trustees/beneficiaries - Sole decision makers.
- Empowerment of Twins:
 - ❖ Trustees/Beneficiaries of estate
 - ❖ Extensive letters to twins
 - ❖ Fanciful but - no blind trust!

(Fred continuing – Change slide - 09) Here’s the way it starts. In the early 21st century, a couple didn’t feel safe relying on the future leadership of their cryonics organization. They gave a sealed letter to their Trustee, to be delivered to their cryonics organization only after aging was conquered and reliable reanimation was claimed to be possible. The letter instructed that no reanimation of either of them should be attempted without the consent of their biological twins. In order to consent, the twins would have to possess all the legal rights of adults and be able to serve as their Trustees, as well as being named as the Beneficiaries of their Trust. The twins were named as the sole decision-makers as to how and when the cryonaut couple were to be reanimated.

(Linda – same slide) The twins were left extensive letters by the earlier couple to help guide them in making reanimation decisions concerning their earlier twins. It might seem foolish to envision placing reliance on biological twins, who might never even be “brought to life”, vs. leaders of cryonics organizations, but this reflected our long held discomfort with leaving decisions like that in the hands of cryonics leaders who openly and actively disputed the rights of cryonauts to set any limits on how or when they would be reanimated.

Slide - 10




Terasem - CyBeRev

- Terasem mindfiles - LifePact type data
 - ❖ No need for biological twins
 - ❖ "Cybertwins" in decades vs. centuries
 - ❖ Awareness of subsequent events
 - ❖ Access to prior thinking
- Turing Tests - Legal Independence
 - ❖ Cybertwins - "offspring"; Trustees/Beneficiaries
 - ❖ Assess feasibility - bioreanimation/uploading

(Fred – Slide 10) When we found out that Terasem, through its CyBeRev and LifeNaut projects, was building mindfiles of Life-Pact type autobiographical and preference data, to be used in generating self-conscious cyberpersonalities who would in effect be “cybertwins” of the cryonauts who set up the mindfiles, our universe flip-flopped! In a flash, we saw that it would be far more plausible, and infinitely more reliable, to rely on cyber-emulations of our own minds that would have full recollection of all our earlier thinking, who would be “back on the street” in decades vs. centuries. Our cybertwins would be familiar with all that had transpired in the world meanwhile. This was a far superior alternative to entrusting our futures to biological twins, as described in BioQuagmire.

(Linda – same slide) After Turing-equivalence tests and achieving legal independence, our cybertwins could be legally regarded as our “offspring”. Then they could become the Trustees/Beneficiaries of our estate. As a matter of fact, that’s how our personal arrangements now stand! Decades before it’s likely that biological reanimation would be “feasible”, we expect to be “back” as our own cybertwins, watching out over other Terasem cryonauts as well as ourselves. We’ll be learning how our own suspensions went down and those of others as well. With time, we’ll be able to assess chances for either eventual bioreanimation or brainmap uploading... or perhaps other options we can’t even foresee right now.


Slide - 11



Current Perspectives

- BioQuagmire's Theme - Biological Twins
- Cybertwins now far more plausible, realistic
- Protect cryonauts - respect preferences
- Consistent with Terasem's consent principles
 - ❖ Quoting: article by Martine Rothblatt

(Fred – Slide 11) In short, although BioQuagmire’s story depended on biological twins, we now see cyberbeings, or as we call them, “cybertwins”, as being a far more plausible, realistic and achievable solution to how cryonauts might be protected, with high emphasis on respecting and honoring their individual preferences. The cybertwin concept is highly consistent with Terasem’s powerful consent principle⁸ as presented in an article by Martine Rothblatt titled: *The Geoethics of Self-Replicating Biomedical Nanotechnology for Cryonic Revival*⁹. Linda, could you quote some of it for perspective?

Slide - 12 

“The Geoethics of Self-Replicating Biomedical Nanotechnology for Cryonic Revival” by Martine Rothblatt

- “The first principle, called *Consent*, is that no procedure should occur unless its purpose is to benefit the affected party. Since there may very well be differences of opinion as to whether or not a procedure is of benefit, the geoethical *Consent Principle* requires affirmative consent from whoever is to be affected by a medical procedure.
- “If someone consents to something, by definition they believe that thing is of benefit to them. It should be noted in this regard that even consent to suicide may be evidence of benefit since such an individual no longer holds any value for their life, or values death even higher.”

(Linda – continuing quote – Slide 12) Sure, Fred. Quoting Martine Rothblatt, “The first principle, called Consent, is that no procedure should occur unless its purpose is to benefit the affected party. Since there may very well be differences of opinion as to whether or not a procedure is of benefit, the geoethical *Consent Principle* requires affirmative consent from whoever is to be affected by a medical procedure. If someone consents to something, by definition they believe that thing is of benefit to them. It should be noted in this regard that even consent to suicide may be evidence of benefit since such an individual no longer holds any value for their life, or values death even higher.”


Slide - 13 

Critical Implication

- Consent by affected party or surrogate
 - ❖ Present day: medical surrogates
 - ❖ Future technologies and circumstances
 - ❖ Decisions? cybertwins!
 - Mindclones? Continuers?
- Important goal - avoid blind trust
 - ❖ Unknown individuals in control of cryonics groups
 - ❖ Presently invisible approaches and options

(Fred – Slide 13) Martine Rothblatt thus takes us to a critical implication. Consent to reanimation decisions should always be an option for cryonauts. They might make such decisions before being placed into cryonic suspension, or appoint another party, acting in the role of a medical surrogate, more usually referred to as a “patient advocate”, to do this for them at a later time. This would be especially important for decisions dependent on future technologies and circumstances that the cryonaut could not have anticipated. Who would be better qualified to make such decisions than a cybertwin, a mindclone, or as Mike Perry might say, a “continuer” of the cryonaut concerned. The important goal would be to avoid blindly trusting unknown individuals who might control our cryonics groups at a future time, when reanimations might become feasible, but with many approaches and options presently invisible to us.

Slide - 14




Cybertwins as a Cybercommunity

- High speed strategic planning
 - ❖ Technological foresight
 - ❖ Best recoveries/reanimation
- How soon? Just a few decades! Awake!
 - ❖ We may have met them, know them
 - ❖ Discuss concerns and preferences with them

(Linda – Slide 14) Cybertwins of cryonauts, as a cybercommunity, could engage in high speed strategic planning on how to best protect us while we’re in biostasis and foresee what technologies might best recover us at an appropriate point. If we manage to live just another decade or so, our cybertwins may be “awake”, even before we are placed into cryostasis. In such a scenario, we would then have the opportunity to discuss our concerns and preferences with them before we went into cryonic suspension, if that became necessary.


Slide - 15



Closer Connectivity and Teamwork

- Pre-suspension monitoring - 24/7
 - ❖ Coordinate preparations
 - ❖ Avoid ischemic delays
- Cybertwin synergism - teamwork
 - ❖ Less competitive - more cooperative
 - ❖ High thought speed - perfect memories

(Fred – Slide 15) In the future, cryonicists' cybertwins might be able to monitor their vital signs 24/7 as the time for suspension approaches, avoiding preventable ischemic delays by helping with the coordination of preparations. Cybertwins are likely to be more synergistic than biohumans, less competitive and more cooperative due to reduced influence of the biochemical drives with which we biohumans are loaded. High speed of thought and perfect memories are assets we biohumans would love to have, but don't. Our cybertwins will be able to do more for us than we could do for ourselves, under the best of conditions.

Slide - 16 

Personality Congruence Confirmation

- Profile matching - Martine Rothblatt
- Interviews - identity regeneration


"An Experiment to Test the Ability of Digitally-
Stored Mindfiles to Regenerate the Consciousness
from Which It Came"

- Added measures - Bainbridge model
- Repeated confirmation? - Waiver?

(Linda – Slide 16) If we entrust reanimation decisions to a cybertwin, wouldn't it be a good idea to check for a good degree of personality congruence between a cybertwin and his/her biotwin? Martine Rothblatt has paved the way for us here, in her paper, *An Experiment to Test the Ability of Digitally-Stored Mindfiles to Regenerate the Consciousness from Which It Came*¹⁰, where she proposes an extensive interview process to verify that the personality of a cyberbeing has a sufficient profile match with the person whose data is used to validate identity regeneration.

(Fred – same slide) If a cybertwin is to serve as Trustee and Reanimation Surrogate for his or her biotwin in cryonic suspension, such testing might be reasonable, particularly if the biotwin made this choice at an early stage in the cybertwin's emergence into consciousness. Other approaches might be added or substituted, for example the Bainbridge¹¹ model. If the cybertwin fits the model in all areas, that would be a very good sign. Even if Bainbridge data had been used to nucleate cybertwin emergence, a re-check after full emergence might be appropriate, to reconfirm the congruence. Conversely, as discussed later, it might be appropriate to waive such a requirement, and some might choose to do so.

Slide - 17




Merger with Cybertwin

- Dr. Larry Cauller - "What it Might 'Feel' Like to be Connected to Devices That Will Expand or Enhance Human Function with Cyber Abilities" - But This was about a biobrain-cyberbrain interface.
- Brainmap interface with mindfile cybertwin?
 - ❖ Interface after uploading brainmap!
 - ❖ Whose active identity is most involved?
 - ❖ Entrust this to cybertwin? We would!
 - ❖ Each cryonaut must independently decide!
 - ❖ Importance of good mindfiles - Survival time?

(Linda – Slide 17) Dr. Larry Cauller mentions the emergence of “a completely new form of conscious being” in his paper, *What it Might “Feel” Like to be Connected to Devices That Will Expand or Enhance Human Function With Cyber Abilities*¹². However, *there* he was talking about interfacing a biobrain and a cyberbeing. In *this* talk, we anticipate that our brains, as cryonauts, might be uploaded and *then* interfaced. Who would guide this interfacing? Who would specify the final configuration? Shouldn't the *cybertwin* be the decision maker? After all, it's the *cybertwin's* identity, as much as the frozen biotwin, that we're talking about at this point. If we trust our cybertwin to decide on the whole spectrum of reanimation options, shouldn't the interface part of it be entrusted also?

Fred & I are comfortable trusting our cybertwins with this decision making, because we are building very extensive mindfiles to be used to emulate our cybertwins. But, we know that others will have a lot of different circumstances and may have different preferences! That's fine! This does, however, point out the importance of building the best mindfile possible, and not waiting to get started. None of us has a guarantee about how long our biological bodies will survive.

Slide - 18




Spread of Options

- Cybertwin elect brainmap upload alone?
 - ❖ Merger then only by mutual consent?
 - ❖ Alternative - divergent life histories?
- Bioreanimation? Singularity is Near!
 - ❖ Focus here is merger upon reanimation.
 - ❖ Bioreanimation an individual choice
 - ❖ Still fits with cybertwin idea

(Fred – Slide 18) Options in augmenting a biotwin's biobrain at the point of uploading will be vast. Let's look at just a few intriguing possibilities. The joint identity of an uploaded biotwin and his or her cybertwin might be highly dependent on decisions made in advance of uploading. Want to upload separately and not interface, or even wait for bioreanimation? The Singularity may unfold rapidly, and procrastinating could lead to missing out on a lot of it. Here, we'll mainly talk about interfacing upon uploading, mentioning bioreanimation from time to time, to show how it still fits in with the cybertwin concept. It does fit! *Who would most staunchly defend the right of an individual to "hold out" for bioreanimation, especially if few cryonauts make such a choice? This is a worrisome issue for some. Wouldn't the cybertwin of such a cryonaut be the best defender?*

Slide - 19




Cybertwin as Trustee/Beneficiary

- Pre-agreed between biotwin and cybertwin
 - ❖ Prior to biotwin's cryonic suspension
 - ❖ Cybertwin - legal capacity to consent
- Biotwin might "pre-appoint" cybertwin!
 - ❖ As anticipated "offspring"
 - ❖ Subject to cybertwin's later consent
- Either way - unrestricted decision maker

(Linda-Slide 19) A biotwin and cybertwin might agree, after the cybertwin is legally independent and possesses legal capacity to consent, that the cybertwin will act as the biotwin's Trustee and be her Beneficiary, **or** a biotwin might specify the appointment of her cybertwin to these roles even at the early stages of the cybertwin's emergence into cyberconsciousness, to serve at a later time, subject to the cybertwin's agreement and possible additional congruence testing. Either way, the cybertwin could wind up as the biotwin's unrestricted decision maker.

Slide - 20




Additional Congruence Testing

- Prior to cybertwin as Trustee/Beneficiary
 - ❖ Waive the requirement?
 - ❖ What basis for waiver?
- Possibly excessive rigidity of evaluation?
 - ❖ All personality characteristics the "same"?
 - ❖ Including all shortcomings and defects?
 - ❖ Each individual should have right of consent!

(Fred – Slide 20) Should biotwins specify additional congruence testing to qualify cybertwins to serve as their Trustees/Beneficiaries, or not? This is a delicate point, but some biotwins might choose to waive such testing! Why? They might be concerned that a decision of that kind might be based (in too great a degree) on determining that all personality characteristics of the original person, including defects and limitations, were still present, in order for the cybertwin to be determined to be ‘the same person’. With this in mind, some cryonauts might specify that if their cybertwins passed Turing-equivalence testing for legal citizenship rights, no further personality congruence would be required to serve as trustees or be beneficiaries of their estates. Each cryonaut, however, should be able to independently decide on such a waiver, or require additional tests. Again, it is the consent of the person affected that should govern, as discussed earlier.

Slide - 21




Rights to Make Decisions for Oneself

- Who else has such a right?
 - ❖ Cybertwins better than new biotwins?
 - ❖ Really - they *will* be us!
- Who else would care in the same way?
 - ❖ Our mindfiles will be totally visible to them.
 - ❖ Brains-maps may enhance consciousness.
 - ❖ Like awakening from a dreamstate!

(Linda – Slide 21) Do we, as cryonicists, have a right to make choices like this? Do we have the right of consent as to who shall make decisions for us if we are unable to do so for ourselves? Fred and I believe that we do! The cybertwins that we now see on the near horizon represent a far more reasonable and practical solution than the future twins in the story *BioQuagmire*, and they’re the logical alternative to blind trust in some unknown future organizational leaders. In a very real way they will be us, at a different level, with strong motivations to upload us and achieve a greater degree of completeness in that way. By our mindfiles they will know us more completely than anyone else ever has. And, we both have arrangements to have our brains frozen in case it turns out that our brain-maps might produce an additional upward leap of consciousness like the awakening from a dream state.

Slide - 22

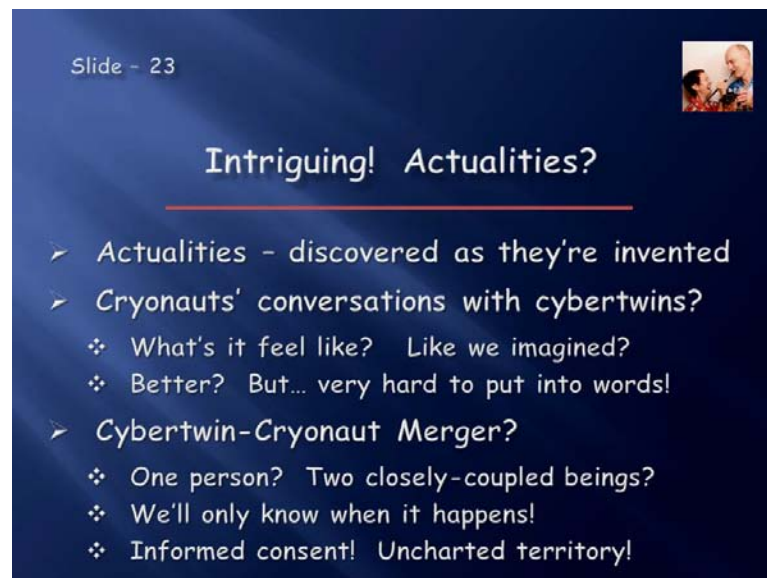


Experience of Awakening

- For the Cryonaut?
 - ❖ Missing cerebral hemisphere restored?
 - ❖ Wired directly to mindfiles & Internet?
- For the Cybertwin?
 - ❖ Suddenly, higher sensitivity to “vibes”
- Like Dorothy in Oz - B&W ► “Color”
 - ❖ Unity similar to right / left brains?
 - ❖ Higher consciousness - multiple substrates?

(Fred – Slide 22) Upon awakening in cyberspace, merged with his/her cybertwin, a cryonaut might feel as if a missing cerebral hemisphere had been restored, vastly upgraded, essential to a higher level of identity. In his paper cited earlier, to recall his exact words, Dr. Larry Cauller described this as the becoming of “a completely new form of conscious being”. Our brainmap “self” upon awakening may feel as if it’s directly wired into not just our mindfiles, but the entire Internet.

(Linda – same slide) Our cybertwins might suddenly feel they’ve recovered a subliminal way to sense the “vibes” of others, via pathways we know already exist directly from sense organs into lower mammalian pathways related to recognition of facial expressions. Both we and our cybertwins may feel as if we were ‘Dorothy’ stepping into the Land of Oz, where the movie switches from black and white to vivid, living color. The sense of unity may be quite like that we already feel between our right and left brains, but at a vastly higher level: one consciousness existing over multiple substrates.




Slide - 23

Intriguing! Actualities?

- Actualities - discovered as they're invented
- Cryonauts' conversations with cybertwins?
 - ❖ What's it feel like? Like we imagined?
 - ❖ Better? But... very hard to put into words!
- Cybertwin-Cryonaut Merger?
 - ❖ One person? Two closely-coupled beings?
 - ❖ We'll only know when it happens!
 - ❖ Informed consent! Uncharted territory!

(Fred – Slide 23) These are intriguing conjectures, but the actualities will only be discovered as they emerge, as they are invented. After a person’s cybertwin attains full self-consciousness, those who are fortunate enough to live long enough to talk to them before entering cryostasis themselves might ask, “What’s it feel like? Is it like we imagined?” Their cybertwins might answer: “It’s even better, but very difficult to put into words, and I’m sure we’re both wondering what it will feel like, to us *both*, when we’re mindfile-brainmap merged.


(Linda – same slide) Will it feel as if we’re just one person again, or will we feel as if we’re two closely coupled, self-aware beings? We have no way to know until it *happens!* And there’s one more vital issue. Informed consent will be a vital ingredient, especially if you want to help pioneer this way of transcending biology. We’re moving into uncharted territory.

Slide - 24 

Informed Consent for Cyber-twinning?

- Cryonics - *"Consent - Cryonic Suspension"*
- This talk - *"cybertwinning"* for cryonauts
- Risks? Uncertainties?
 - ❖ We've barely scratched the surface.
- *"Consent for Cryonaut-Cybertwinning" Form?*

(Fred – Slide 24) If you're familiar with cryonics paperwork, you know there are disclosures of uncertainties, risks and unpredictable turns of events. Such documents are frequently titled "Consent for Cryonic Suspension". In this talk, we've suggested improving chances for surviving cryonic suspension by cyber-twinning, but we've barely scratched the surface in discussing uncertainties and risks. Will you find that your cryonics society has a document for this purpose? At this time, probably not!

Slide - 25 

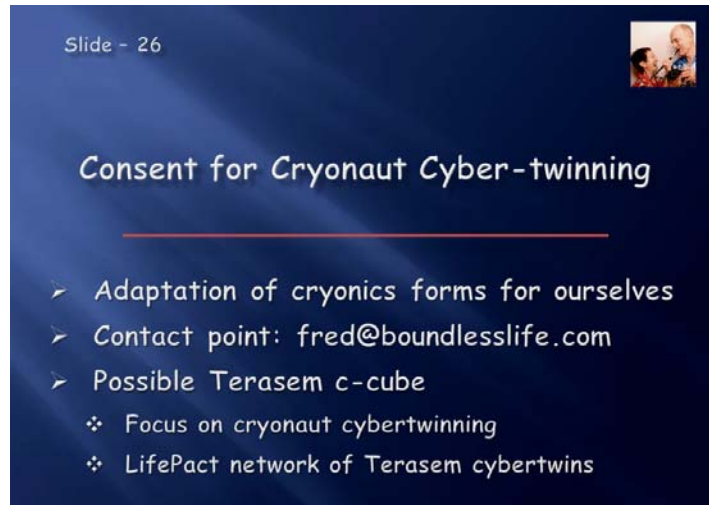
Where to Go from Here?

- Terasem Journals; Mindclones.blogspot.com
- Lays groundwork for informed consent
- Make records; readings / comprehension
- Basis for later signing a
"Consent for Cryonaut Cyber-twinning"

(Linda – Slide 25) So, what's next? Do we cryonauts just do our CyBeRev work and jump into a tank of liquid nitrogen? No way! This is a hard-core evolutionary leap, and such leaps are survived by careful planning and action, not knee-jerk reflexes. Terasem's Journals are filled with ideas about risks, dangers, and probability of failure. The articles there on personal cyberconsciousness, supplemented by other sources such as Martine Rothblatt's blog on Mindclones, and information on

KurzweilAI.net, among many other sources, help lay the groundwork for any informed consent documents you might later sign for cryonaut cyber-twinning.

(Fred – same slide) You might make a record of what you've read and upload it into your CyBeRev mindfiles, perhaps adding comments to indicate your level of understanding. Then, if you later signed a "Consent for Cryonaut Cyber-twinning", you could note that you'd read things that helped you be more aware of what you were consenting to.



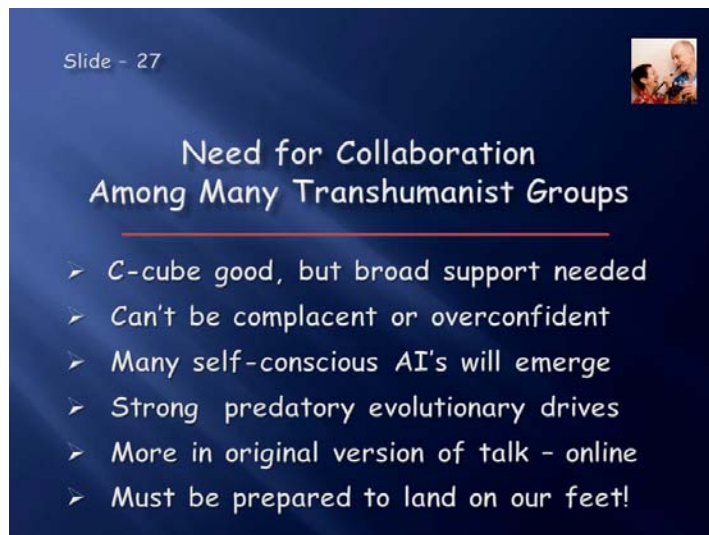
Slide - 26

Consent for Cryonaut Cyber-twinning

- Adaptation of cryonics forms for ourselves
- Contact point: fred@boundlesslife.com
- Possible Terasem c-cube
 - ❖ Focus on cryonaut cybertwinning
 - ❖ LifePact network of Terasem cybertwins

(Linda – Slide 26) A detailed informed consent document for cryonaut cyber-twinning is needed, and we're adapting cryonics forms for this purpose, for ourselves. We'll be glad to share these, but they will simply be starting points for others who want to adapt them for their own needs. A legal review should be done before anyone uses them.

(Fred – same slide) My email address is shown on the slide. I'll be glad to communicate with any who want a form like this for themselves. That might eventually lead to a "c-cube" within Terasem which focuses on cryonaut cyber-twinning and becomes a LifePact network of Terasem cybertwins who could work collaboratively in cyberspace to protect their cryonauts.



Slide - 27

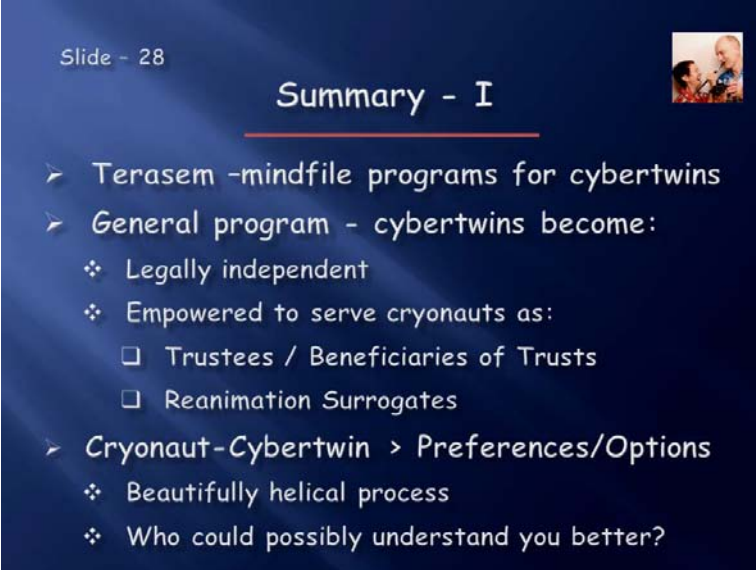
Need for Collaboration Among Many Transhumanist Groups

- C-cube good, but broad support needed
- Can't be complacent or overconfident
- Many self-conscious AI's will emerge
- Strong predatory evolutionary drives
- More in original version of talk - online
- Must be prepared to land on our feet!

(Linda – Slide 27) A c-cube within Terasem, that's a small working group, called a critical center of consciousness, would be good. But the cybertwin concept needs to develop as broad a base of support as possible. Terasem and groups with which it is allied, like H+, SfUI and ZS can provide a vital and badly needed safety network for cryonauts. SfUI, for example, is strongly cryonics-oriented.

(Fred – same slide) We cannot let ourselves be overconfident of a positive endgame. Personal cyberconsciousness will emerge among many who do not have the protection of biological cryonauts as a primary goal. Ray Kurzweil and so many others have certainly pointed this out¹³, and there are strong predatory evolutionary drives that pose dangers, as well described in Howard Bloom's works^{14, 15}. James Hughes¹⁶ and Richard Clark¹⁷, in looking at potential conflicts with bioLuddites, are similarly persuasive that the road ahead may be a rocky one.

(Linda – same slide) The ideas of these authors are more completely discussed in the original version of this talk, online along with other publications in the Terasem Journal Archives (link). The world is on the brink of a string of short-term financial crises that are unpredictable, and we must be prepared to land on our feet, whatever comes.



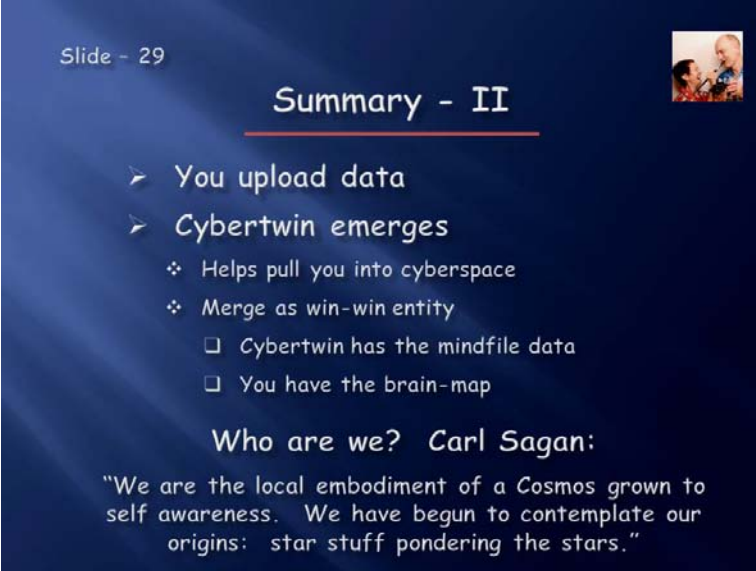
Slide - 28

Summary - I

- Terasem -mindfile programs for cybertwins
- General program - cybertwins become:
 - ❖ Legally independent
 - ❖ Empowered to serve cryonauts as:
 - Trustees / Beneficiaries of Trusts
 - Reanimation Surrogates
- Cryonaut-Cybertwin > Preferences/Options
 - ❖ Beautifully helical process
 - ❖ Who could possibly understand you better?

(Fred – Slide 28) Terasem has developed ways for individuals to upload their bemes and create their own cybertwins, and has goals to help these mindclones become legally empowered as citizens with personhood rights, able to serve as Trustees and Beneficiaries for their cryonaut biotwins, as well as represent them as Reanimation Surrogates.

(Linda – same slide) It's a beautifully helical process. *You* input the bemes that create *your* cybertwin, your counterpart in cyberspace. She or he is better qualified to understand how you want your affairs to be managed than any biohuman alternative. Who has greater motivation based on self-interest to see that your wishes are carried out? Who else would be able to make the kinds of decisions you would want made, in scenarios you might not have foreseen before your suspension?



Slide - 29

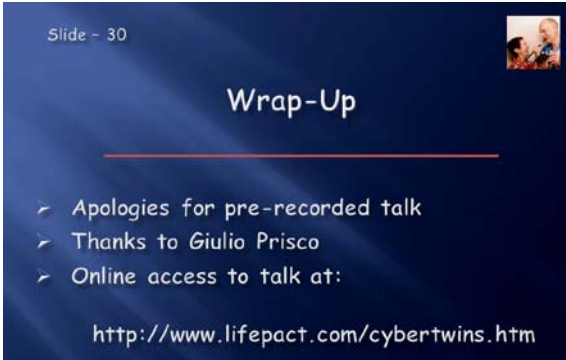
Summary - II

- You upload data
- Cybertwin emerges
 - ❖ Helps pull you into cyberspace
 - ❖ Merge as win-win entity
 - ❑ Cybertwin has the mindfile data
 - ❑ You have the brain-map

Who are we? Carl Sagan:
"We are the local embodiment of a Cosmos grown to self awareness. We have begun to contemplate our origins: star stuff pondering the stars."

(Fred – Slide 29) What happens, and it is like pulling yourself up by your bootstraps, is that you as the biotwin upload data and appear in cyberspace as your cybertwin. Your cybertwin helps upload you into cyberspace, then the two of you become an entity that might be called a “hyperbeing”, an extension of the kind of entity Dr. Cauller has described as “a completely new form of conscious being”, as mentioned earlier.

(Linda – same slide) So, we have to ask ourselves: Who are we? What will we become? As Carl Sagan so poetically puts it in his book *Cosmos*¹⁸ and the PBS television series of the 1970’s by the same name: “We are the local embodiment of a Cosmos grown to self awareness. We have begun to contemplate our origins: star stuff pondering the stars.”



Slide - 30

Wrap-Up

- Apologies for pre-recorded talk
- Thanks to Giulio Prisco
- Online access to talk at:
<http://www.lifepact.com/cybertwins.htm>

(Fred – Slide 30) Thank you for allowing the two of us to offer a few thoughts, today¹⁹. We’re sorry we couldn’t be with you personally, but at the time scheduled for the talk we have no access to the Internet. Thanks to Giulio Prisco for cuing the slides to the audio, or live-streaming a video combining the audio with the slides. As mentioned earlier, an expanded version of this talk, with references and other resources, may be found on the below website, where there are links to the video of this talk, exactly the same audio and slides you have just seen:

<http://www.lifepact.com/cybertwins.htm>

ADDENDUM II (Rev 12/10/2011)

- The original talk, revised after its initial presentation on 12/10/2009, was published in the Terasem Journals with Addendum I (below) at (link):
<http://www.terasemjournals.org/PCJournal/PC0601/chamberlain.html>
- Since then, the talk has been revised, both as to conceptual content and format. The flow of text (above) follows the dialogue style we use in podcasts on the Truths of Terasem, text/audio accessible at <http://truthsofterasem.wordpress.com/>. We are using a number of quotes, particularly from the writings of Dr. Martine Rothblatt, which help to emphasize the tie-ins with the Terasem Movements and the connections of Terasem's mindfiles programs with the LifePact concept we began to develop in the late 1980's
- In the near future, the LifePact Interview Questionnaire at <http://www.lifepact.com> will be expanded to add items more related to mindfile uploading vs. cryonics reanimation. It will also address issues raised in the above talk about "consents to cryonaut cybertwinning". The email address given in the talk on 12/11/2011, fred@boundlesslife.com, is our point of contact for informal communications about the cybertwin concept and more specifically for interchange on the subject of consent documentation. Addendum II continues beneath the notes and references, as [Addendum II-a](#) (dates of entries indicated, some even before 12/11/2011).

ADDENDUM I (Rev 4/2/2011)

Purpose. This addendum (initially added ~1 ½ years after the original presentation), discusses practical implications and aspects of an actual "cybertwin" group in virtual reality, one or two decades from now. It will be revised from time to time (check the date above). Long range ideas will be expanded, as well as precursor applications that may be feasible with present technology. See the last footnote in the main paper¹⁹ and you will find details about an application already in existence that gives the impression cyberbeings have already arrived.

Assumptions. All that follows assumes that cybertwins discussed are derived from the mindfiles of cryonicists who had deposited (prior to cryonic suspension) mindfiles with a mindcloning provider (MP), consenting to this in the same as with cryonic suspension, acknowledging all of the uncertainties involved. We also assume that they made arrangements for mindcloning with their MP's on a priority basis so as to fulfill obligations to those from whom they were derived.)

LifePact Aspects. The LifePact concept (<http://www.lifepact.com/lifepact.htm>), was that cryonicists could commit to repay the costs of reanimation this if it was possible (the online article provides more details). The cybertwin idea approach now enables something far better, on a foreshortened timescale. Cryonicists and their cybertwins, partnered by contingent contracts, can cover the reanimation costs of the cryonicists by their cybertwins' creative work in cyberspace, much of which can be directed toward reanimation itself.

Networks of Biotwins. Those cryonicists who anticipate working as cybertwins for their 'twins of origin' in cryostasis may wish to network as Terasem c-cubes or c-quads to develop forms of agreement by means of which they might anticipate forming biotwin-cybertwin partnerships, and other forms of supporting documentation that could be useful in preparing for this, prior to their own entries into cryostasis. Those who are young enough to survive into the Singularity could be instrumental in mindcloning and protecting those who are already in cryostasis, but without

the comparably huge tasks for foreseeing all the necessary steps that will later be taken in cyberspace by cybertwins, as to pursuit of means for reanimation and funding this.

Networks of Cybertwins. Cybertwins, once mindcloned, even before legally independent as part of human society, may elect, as groups, to organize themselves in cyberspace to support research toward reanimation and contribute earnings as ‘ward’ cyberbeings of still living biotwins, in the prospect of reanimating those in cryostasis at a later time. Their partnership agreements with their biotwins, as these become legally acceptable in future society, may become the cyberspace answer to what LifePact was originally intended to do.

Consents and Agreements. Let’s return to the immediate present, and what a cryonicist might need or want to do, to work toward being mindcloned in the context of what has been discussed above. We’ll proceed on the basis that the intent is to pursue this with Terasem, making nothing in the way of assumptions about what commitments Terasem might agree to, but rather looking at what sort of proposal a cryonicist might make to Terasem, that would be sufficiently protective of Terasem and at the same time sufficiently defined to improve chances that the cryonicist could expect a cybertwin of his or her to be mindcloned at the earliest possible time.

Consents to be Mindcloned. Presently, consent to mindcloning is given with radio buttons and the entry of initials in one’s CyBeRev account, and for those who anticipate mindcloning only after legal death, and without obligation to any biotwin, that is probably adequate. But, a cryonicist who is willing to risk earlier emergence in cyberspace for the purpose of meaningfully contributing to watching our over those in cryostasis might wish to offer more in the way of assurances as to informed consent of a highly detailed kind, as well as pledges as to adherence of very high standards of ethical conduct and positive support of geoethical nanotechnology, as one of the anticipated conditions for ‘priority mindcloning’.

Agreements as to Mindcloning Costs. For those who set aside trusts with substantial assets to support mindcloning, this may be a non-issue, but for those without such forms of support it might be appropriate to agree to repay mindcloning costs in the same way that those in cryostasis, under LifePact, were expected to agree to repay costs of reanimation, if satisfactory, along with costs of rehabilitation and reeducation. The formulation of such unilaterally offered agreements could be one of the pursuits of biotwin networks of c-cubes and c-quads, as described above.

Planned Cybertwin Activities. It is very early to anticipate exactly what productive activities might be engaged in by Cybertwins, but a few will be mentioned even in this earliest of addenda, to foreshadow those that may be described in greater detail later.

Bedside Watch 24/7 for Cryonics Patients. Cybertwin could conceivably take on the tasks of serving as a 24/7 “presences” (via laptop and webcam) at the bedsides of hundreds of cryonics patients nearing a need for cryonic suspension. Consult footnote no. 19 (below), and you will see that a present-day MyCybertwin application can come close to that already, with addition of a little interface hardware (like awareness of pulse rate, blood pressure, and blood oxygen level, with EKG if needed, as well as cell phone and instant messaging connectedness to cryonics organizations, transport teams, human volunteers, and so forth). With even so small a group as ten, twenty, thirty or forty cyberpersonalities to share the load (or consented self-replication of a lesser number), such responsibilities would be trivial. Additionally, even before full self-consciousness were attained (as super-chatbots), the cybertwins-to-be could be doing mindfile interview and building work with each of the patients, as well as ‘bedside watch’ activities.

Bedside Watch 24/7 for Others. Those who might want a ‘companion at the bedside’ would not necessarily be limited to cryonicists. There may be ‘purely AI’ chatbot-companion applications, outgrowths of the MyCybertwin present day call center operations, which could be easily be accessed online, but how many of these would have, even if self conscious, the same level of appeal as one derived from an actual human being by way of mindfiles? There might be a long waiting line for services of this kind by cybertwins who were not spending time with cryonicists awaiting suspension, and with only a slight premium over the costs for a purely commercial bedside watch service subscription, the income could be tremendous. On the basis that even chatbot-level applications based on mindfiles of actual human beings would reasonably be expected to be ‘consented to’ by the humans involved, cybertwins might be among the first to be ready to perform these services.

Summary. This is the barest shadow of what future addenda to this paper may offer, but it may serve to illustrate the possibilities in a few ways and suggest work that could be undertaken right away, such as setting paperwork in order, foreseeing problems, and anticipating what kind of transitions we might envision between super-chatbots and self-conscious cybertwins, as we grow closer and closer to an era where to be late in arriving in the cybercommunity will be like being left behind in an emigration that will transcend any previously to have taken place.

Some tipping point will be reached at which it is apparent that this is where the great mass of humanity is headed, where it’s going to wind up, and this talk, paper and addendum is only a sketchy invitation not to miss out. As we say in ending all of our podcasts concerning the Truths of Terasem, “Join us, in our quest for an endless future. Come with us, into tomorrow!”

Endnotes

1. Biostasis (ne [cryostasis](#)) - The reversible cryopreservation of live biological objects.
2. [Lifepact; An Introduction](#), by Linda Chamberlain, and [New Directions in Cryonics](#), by Fred Chamberlain, presented at a Conference Hosted By the Cryonics Institute in October, 1989. New Directions was later published in part, within the periodicals of the Cryonics Institute, but the online versions (below) are more complete, with improved graphics in the case of New Directions.
3. [LifeQuest](#) – A consolidated republication of short stories about cryonics, uploading and life extension in general, published on Amazon.Com in August, 2009. The authors of this paper were the primary contributors to the original seven issues, released in the late 1980’s, and are the editors of the republished collection.
4. [Star Pebble](#) - A recently published novel by Linda Chamberlain. It takes you to the near future, where free market forces are the first to build space colonies orbiting the Earth. Star Pebble is a fast paced action novel. It explores a culture where freedom and individuality are highly valued. It is a world where life is more precious than in Terran cultures, and explores how this affects the individual lives of the characters, as well as the laws and customs that have developed.

5. [BioQuagmire](#) – A recently published novel by Fred Chamberlain about a future where uploading takes place one hundred years after aging is conquered, where bioreanimation still cannot be done. Online for review prior to release on Create Space.

Online at: <http://www.lifepact.com/BioQuagmire/EEEIntroduction.htm>

6. [Terasem Movement, Inc.](#) - Terasem Movement, Inc. is a 501c3 not-for-profit charity endowed for the purpose of educating the public on the practicality and necessity of greatly extending human life, consistent with diversity and unity, via geoethical nanotechnology and personal cyberconsciousness, concentrating in particular on facilitating revivals from biostasis. The Movement focuses on preserving, evoking, reviving and downloading human consciousness.

7. [CyBeRev Project](#) – means cybernetic beingness revival. The purpose of the CyBeRev project is to prevent death by preserving sufficient digital information about a person so that recovery remains possible by foreseeable technology.

8. [The Truths of Terasem](#) – These emphasize the importance of “consent” in many ways. More generally, they outline all of the Terasem Principles, including the “Who, What, Where, When, Why and How” of Terasem, explaining in details its four Core Beliefs; that: I. Life is purposeful, II. Death is optional, III. God is technological, and IV. Love is essential.

9. [The Geoethics of Self-Replicating Biomedical Nanotechnology for Cryonic Revival](#), by Martine Rothblatt, Ph.D.; Journal of Geoethical Nanotechnology, Volume 2, Issue 3, 3rd Quarter, 2007.

10. [An Experiment to Test the Ability of Digitally-Stored Mindfiles to Regenerate the Consciousness from Which It Came](#), by Martine Rothblatt, Ph.D.; Journal of Geoethical Nanotechnology, Volume 3, Issue 2, 2nd Quarter, 2008.

11. [Strategies for Personality Transfer](#), by William Sims Bainbridge, Ph.D.; Journal of Personal Cyberconsciousness, Volume 1, Issue 4, 4th Quarter, 2006. In this very extensive paper, Dr. Bainbridge outlines the principles on which the personality profiling systems of the CyBeRev program are based. In later issues of the Journal of Personal Cyberconsciousness, his work ranges from ideas about broadcasting identities to the stars, perhaps with the idea that those for whom this is done might ‘wake up’ in a distant star system among those of vastly greater intellect, to other thoughts about how avatars should treat each other (cyberpersonality sociability). Link to the primary paper cited appears below, but his other articles can be easily be found in the “Past Issues” link within the Terasem Journals webpages.

12. [What it Might “Feel” Like to be Connected to Devices That Will Expand or Enhance Human Function With Cyber Abilities](#), by Larry Cauller, Ph.D.; Journal of Personal Cyberconsciousness, Volume 2, Issue 1, 1st Quarter, 2007. Near the conclusion of this paper it states: “The evolution of human capacity must engage the same fundamental process of NeuroInteractivity responsible for all human development. The expansion of NeuroInteractivity across the interconnections between brains will kindle the self-organization of a shared experience for the construction of a common action-prediction foundation that fuses the selves of both conscious entities which become mutually transformed into a completely new form of conscious being. Another important ramification of this vision of human evolution is that artificial beings are far more durable than their biological

counterparts. The personality of the biological entity can be imprinted upon the fused consciousness of the hybrid being and lives on indefinitely beyond the mortal life of the biological donor.”

13. [The Singularity Is Near](#), by Ray Kurzweil, 2005, Penguin Books, New York. Kurzweil’s papers in the Terasem Journals recapitulate and expand on his outlook, but the starting point for anyone not already familiar with his 2005 book should be with this book.

14. [The Lucifer Principle](#), by Howard Bloom. 1995. Atlantic Monthly Press, New York. In this book and his next one (cited below), Howard Bloom very objectively sets forth reasons why humans are so competitive and combative, as a natural mechanism of species development, originating back to the earliest organisms. His later book (below) extends these viewpoints to ways in which most organisms, many of them to a high degree, exist mainly as part of community or network, without which they cannot sustain themselves. This work is highly in correspondence with the ideas being set forth in the Terasem Truths, although the vision of humankind expanding into the Cosmos is far more limited.

15. [Global Brain](#), by Howard Bloom. 2000, John Wiley & Sons, New York. Brief notes are included in reference to The Lucifer Principle, above. This book, unlike that which one might expect, spend a significant amount of its time examining religious conflicts, both past and present, with detailed examination of how Islam may figure into the future of the world as a danger to be watched closely and contained.

16. [Citizen Cyborg: Why Democratic Societies Must Respond To The Redesigned Human Of The Future](#), by James J. Hughes Ph.D., 2004, Westview Press. Excerpt from Amazon.Com description:

“In the next 50 years, lifespans will extend well beyond the century. Our senses and cognition will be enhanced. We will have greater control over our emotions and memory. Our bodies and brains will be surrounded by and merged with computer power. The limits of the human body will be transcended as technologies such as artificial intelligence, nanotechnology, and genetic engineering converge and accelerate. With them, we will redesign ourselves and our children into varieties of *posthumanity*. This prospect is understandingly terrifying to many. A loose coalition of groups including religious conservatives, disability rights, and environmental activists has emerged to oppose the use of genetics to enhance human beings. And with the appointment of conservative philosopher Leon Kass, an opponent of in-vitro fertilization, stem cell research and life extension, to head the President’s Council on Bioethics, and with the recent high-profile writings by authors like Francis Fukuyama and Bill McKibben, this stance has become more visible – and more infamous – than ever before.”

17. [Breakpoint](#), by Richard Clark, 2007, Putnam Books, New York. This book, set in the near future (2012) looks at the potential back lash from Luddites who see computers in general and artificial intelligence as so negative that it must be destroyed.

18. [Cosmos](#), by Carl Sagan, 1980, Random House, New York. This book is the text on which the PBS television series was based. [AVAILABLE ON DVD'S](#)

19. [Cybertwins as Trustees, Surrogates and Guardians of Cryonauts](#). This paper was first presented on December 10, 2009 in Second Life on Terasem Island, and since that time changes have necessitated revisions of a minor kind. Online versions of this talk may exist which differ in content to some extent. Also, the term “cybertwins” was already in use at this time, unknown to us. A company whose URL is <http://mycybertwin.com/> has versions which can replace call centers of 100 humans or more, with very high levels of conversational flexibility. Given this and other the state of the art in hardware and mindware already in being, it is hard to believe that ‘cybertwins’ as discussed in this paper are not ‘just around the corner’, at most one or two decades away.

Bios

(Reprinted from Terasem Journals Article)



Fred Chamberlain



Linda Chamberlain

[Fred and Linda Chamberlain](#) met in 1970 while both committee members organizing the Third National Conference on Cryonics, sponsored by the Cryonics Society of California (CSC). They married in 1971 and devoted themselves to the cryonics movement, forming the Manrise Corporation and subsequently, the Alcor Society for Solid State Hypothermia in 1972 which, in 1977, became the Alcor Life Extension Foundation. (More on [Wikipedia](#).)

Back to main Cybertwins page at <http://www.lifepact.com/cybertwins.htm>

A video of the talk to be given (or as-given) in Second Life on Terasem Island in connection with the Turing Church Online Workshop 2, on Sunday 11 December, 2011 is online at:

<http://vimeo.com/32334880>

Addendum II-a

What you see below is not exactly a blog, although it might be mistaken for one. It is more a way of updating the ideas of the talks and printed versions of them with time, reflecting the intent of earlier addenda and other notes. For the moment, it is empty, but will not remain so for long. There is too much to evolve, with respect to this idea, just one of which is the way in which the Terasem cybertwin community may be helpful to those who simply wish to build their mindfiles more easily and securely; but that is a very large topic, for a later moment!