

Neither Death Nor Taxes

'Nothing is certain but death and taxes', said Benjamin Franklin, but we think that he was too pessimistic. We deny that taxes are inevitable or desirable, and we see no reason to take a different attitude towards death. Though it is not yet known how to do away with either, doing away with them *is* just a matter of knowing how.

Death from old age is not a fundamental part of what makes us human any more than defecation is. They are both merely unfortunate and entirely contingent accidents of nature. What makes us human is the ability to think, to create new ideas about the world. Death gets in the way of thinking. It is alien to everything truly human and we should try to get rid of it.

The explanation for why we die is quite simple: the human body is a collection of design kludges brought about by millions of years of random trial and the elimination of error. The human body evolved, not to live for as long as possible but to pass on genes. Our lifespan is merely the accidental consequence of adaptations selected for that purpose.

But we have different, better purposes in mind. So what can we do about this? We could contemplate designing a human body Version 2.0 that would last longer, but this would be extremely difficult and is definitely not something we could even begin to embark on today. We can work on replacing organs when they fail, but that will only take us so far. A better, more general approach is that advocated by Aubrey de Grey, a geneticist at Cambridge University. The idea is to intervene using biotechnology to remove damage to our bodies as it accumulates, before it poses a serious problem. It is called **Engineering Negligible Senescence** (ENS). The **recent discovery** of the chemical that allows stem cells to divide indefinitely often is an important step towards ENS:

Scientists have identified a molecule that allows special cells from embryos, called stem cells, to multiply without limit.

The UK researchers have dubbed the molecule Nanog, after the mythological Celtic land of the ever young.

Stem cells found in embryos are special because they can turn into almost any type of cell in the body, whether it is a heart cell, skin cell or brain cell.

Research into these cells is expected to lead to revolutionary new treatments for a range of conditions from Parkinson's Disease to heart failure and diabetes...

"If Nanog has the same effect in humans as we have found in mice, this will be a key step in developing embryonic stem cells for medical treatments."

The end of death as an inevitable part of human life is now one step closer. Hurray!

Sun, 06/01/2003 - 00:05 | [digg](#) | [del.icio.us](#) | [permalink](#)

Death "designed in" -- by whom?

While I applaud the development you've reported on here, I must register a minor quibble. Death is not an "unfortunate accident." It's an **epiphenomenon**, a characteristic that arises from innumerable other, more fundamental characteristics of the design of organic life.

Evolutionists will tell you that death is integral to the mechanism by which species advance and differentiate. Creationists will tell you that death is part of the Divine plan, that this world is merely a preparatory stage for the next, far more important one. Both these views are teleological, one obviously, the other more subtly. They deflect attention from the central value of life -- itself -- to its exact opposite.

Regardless of whether the evolutionist or the creationist is more correct, Man has more control over his life in this world than any of the lesser species. That we've come so far, and appear poised to go this much farther, is a truly wondrous thing, a ringing affirmation of the glory of the mind.

Curmudgeon Emeritus, Palace Of Reason

by [fporretto](#) on Sun, 06/01/2003 - 11:50 | [reply](#)

Prolonging life is good and p...

Prolonging life is good and possible, but how can we ever know if we have *combatted death*? It would take eternity to find out, wouldn't it?

Alice

http://libertarian_parent_in_the_countryside.blogspot.com/

by a reader on Sun, 06/01/2003 - 15:00 | [reply](#)

How Could We Know?

We could know in the same way as we know anything else: if that was an implication of our best explanatory theories in the relevant area. If, given our best understanding of physics, biology, and the

relevant technology, it one day follows that it is extremely likely that no person will ever die again, then we'd know that in the same sense as we now know that with present-day technology, a typical lifespan will always be 76 years or whatever. And of course it's a testable theory.

by **David Deutsch** on Sun, 06/01/2003 - 15:44 | [reply](#)

There is no proof

Alice:

It's never possible to prove that death has been eliminated. Proof only works in maths, and even then it is not absolutely reliable. It is possible for the best available explanation to be that people don't have to die permanently anymore, though.

For example, if humans had multiple redundant backups of themselves in many locations throughout the universe, and it was known how to make them active again, it would be reasonable to say that people didn't have to die anymore.

~Woty
<http://woty.blogspot.com>

by **Woty** on Sun, 06/01/2003 - 15:46 | [reply](#)

Math

Woty wrote: "Proof only works in maths, and even then it is not absolutely reliable. "

Another way to say that is proof *doesn't* work in math.

-- Elliot Temple
<http://curi.blogspot.com/>

by **Elliot Temple** on Sun, 06/01/2003 - 20:07 | [reply](#)

Maths

There is a form of argument called proof, that is an effective way of demonstrating things in maths, and that there is no equivalent in other fields.

~Woty
<http://woty.blogspot.com>

by **Woty** on Sun, 06/01/2003 - 23:17 | [reply](#)

Math

Syllogisms are effective and seem equivalent to me.

-- Elliot Temple

<http://curi.blogspot.com/>

by **Elliot Temple** on Mon, 06/02/2003 - 01:33 | [reply](#)

Proofs

Predicate logic is even better than Aristotalian syllogisms, but both rely on the creation of tautological axioms, which I doubt many people can agree on outside of pure mathematics.

Anyway, I expect that degenerative diseases will be eliminated before radical life extension becomes a reality. People will always die, even if by accident.

Master of None

by **Michael Williams** on Mon, 06/02/2003 - 23:13 | [reply](#)

Error correction

Michael:

What if there was a way to make accidental death non-permanent?

~Woty

<http://woty.blogspot.com>

by **Woty** on Tue, 06/03/2003 - 01:37 | [reply](#)

Backups

"For example, if humans had multiple redundant backups of themselves in many locations throughout the universe, and it was known how to make them active again, it would be reasonable to say that people didn't have to die anymore."

Yes they would.

Having one or more "backups" of yourself doesn't do you any more good than having a twin sibling does.

by a reader on Tue, 06/03/2003 - 12:58 | [reply](#)

Backups

I meant backups of the content of your mind, not genetic backups.

~Woty

<http://woty.blogspot.com>

by **Woty** on Tue, 06/03/2003 - 13:24 | [reply](#)

Still doesn't help. A backup...

Still doesn't help. A backup of the content of your mind simply produces *other people* who think they're you.

by a reader on Wed, 06/04/2003 - 00:00 | [reply](#)

Are Human Copies Fungible?

Short Answer: Yes.

Slightly Longer Answer (for people who have read *The Fabric of Reality*):

Imagine a bunch of universes, which are all different times in the last year, and are all in the history of this present. In each you will find a brain state, that is different than my present one, and is in a different time and a different place than my present one. But you won't balk at saying it's me.

Slightly Longer Answer (for people who have not read *The Fabric of Reality*):

The idea that the particular matter that makes up my brain, is privileged, is mysticism.

Another Answer:

If we make a double of someone, and it acts *as if* it is that person, what sort of explanation will say it is not that person (besides a bad one)?

(Click link on sidebar to purchase *The Fabric of Reality*, the best book ever)

-- Elliot Temple
<http://curi.blogspot.com/>

by [Elliot Temple](#) on Wed, 06/04/2003 - 05:19 | [reply](#)

We should be satisfied with t...

We should be satisfied with the good long lives modern medicine allow and then die with dignity.

by a reader on Wed, 06/04/2003 - 10:21 | [reply](#)

New Scientist article

See also [this article](#).

by a reader on Wed, 06/04/2003 - 15:03 | [reply](#)

Copies

Creating copies or backups of oneself clearly would not obviate death. As the previous poster pointed out, they would not be you, even though they would be just like you.

Even if the copies are fungible to other people, you yourself would still be dead. Same goes for transporters in *Star Trek* :)

Aside from my expectation that we will never be able to back-up a

human.

Master of None

by **Michael Williams** on Wed, 06/04/2003 - 16:11 | [reply](#)

Re: Copies

Brains are complicated, and I expect it will be a very long time before their emergent properties are fully understood.

However, the local structure of brains is relatively simple. Suppose artificial neurons are developed, that act just like the meaty ones, but can use a backup power source other than sugary oxygenated blood, and/or fully preserve their state when shut down. Nanoscale installers operate on your brain over the course of months or years, replacing individual original neurons one by one with copies of the improved model.

For the sake of argument, the installers only operate while you are conscious. Individual neurons die continually, with no detectable effect to us, so presumably the temporary loss of neuron while its state is copied would likewise have no detectable effect.

At the end of the replacement process, are "you" dead?

by **Kevin** on Wed, 06/04/2003 - 17:12 | [reply](#)

Copies

And the same goes for changing from one time to another, right?

How can that be the same person, if he's in a whole different universe? (To quote Fabric, "Other times are just special cases of other universes.")

-- Elliot Temple
<http://curi.blogspot.com/>

by **Elliot Temple** on Wed, 06/04/2003 - 17:16 | [reply](#)

"Imagine a bunch of universes..."

"Imagine a bunch of universes, which are all different times in the last year, and are all in the history of this present. In each you will find a brain state, that is different than my present one, and is in a different time and a different place than my present one. But you won't balk at saying it's me."

No, but you would. And if you gathered them all together, and then I shot you (but not them), their presence would not be much consolation.

by **Ken** on Thu, 06/05/2003 - 00:38 | [reply](#)

sigh

Look, I understand your thesis: fungibility does not exist, all matter is special, blah blah blah, (or maybe only when consciousness is involved) but do you have an argument for this?

-- Elliot Temple
<http://curi.blogspot.com/>

by [Elliot Temple](#) on Thu, 06/05/2003 - 04:07 | [reply](#)

Copies

Our arguments are at least as weighty as your appeals to authority. Frankly, the question hinges on axiomatic beliefs, and I doubt that we'll agree on them.

If dying neurons were progressively replaced with artificial neurons, my intuition tells me that yes, it would still be "you". Additionally, I completely agree with Ken: the existence of other-universe-"yous" may be fine for the rest of us, but for you yourself it's meaningless.

I'm not sure what arguments you're putting in my mouth by saying "fungibility does not exist, all matter is special, blah blah blah". Special how? Fungibility is relative. What could possibly serve as proof?

Master of None

by [Michael Williams](#) on Thu, 06/05/2003 - 05:03 | [reply](#)

Epistemolgy Again

Our arguments are at least as weighty as your appeals to authority.

Erm, which appeal?

Frankly, the question hinges on axiomatic beliefs, and I doubt that we'll agree on them.

I have no such beliefs. The correct approach to knowledge, is to acknowledge that we cannot know anything with certainty, but still to hold our best explanations to be **tentatively** true.

(out of order) *What could possibly serve as proof?*

Of course, nothing, ala fallibility. That's not the point, we need good explanations. As a general rule, if reality behaves *as if* something is true, it's a good explanation that it's true.

the existence of other-universe-"yous" may be fine for the rest of us, but for you yourself it's meaningless.

The notion that the copy would act *as if* it was me, and be the same for other people, but would not be "me", is the notion that the specific matter making me up is privileged (but can, apparently, gradually bestow this privilege on other bits of matter a little at a time ala artificial neuron replacement). In the absence of an explanation for this privilege, I have no choice but to consider it

mysticism.

I'm not sure what arguments you're putting in my mouth

That was to Ken, who claims I will balk at considering me-2-seconds-ago me. I know many adults disassociate from their former selves WRT things like hating highschool, but this is really pushing it.

-- Elliot Temple

<http://curi.blogspot.com/>

by **Elliot Temple** on Thu, 06/05/2003 - 06:21 | [reply](#)

Copies

And what if the replaced natural neurons, rather than being discarded, were being assembled into a functioning recreation of your brain in exactly the state it was in at some point in time?

Which would be you?

The artificial, but continuous you?

Or the natural, discontinuous you in a state identical to a previous natural state?

I think, for most of us, the continuity seems more important than the material or the precision of the state-match. I think our sense of identity is tied to the idea of a single mind evolving rather than a sequence of brain states; so even perfect copies would still be "other people".

This might be an illusion, but it's a difficult one to shake off, because it's central to how we think of our existence.

by **Gil** on Thu, 06/05/2003 - 07:34 | [reply](#)

I can't believe no one mentioned this

Think about what happens if we eliminate death.

If it is universal, the population increases by over 328,000 people literally overnight (well, ok not literally, it would take 25hours). The population growth rate not quite doubles.

If it is not universal it means the average age among wealthy populations gets higher and higher relative to everyone else, until they are prime for non-natural death at the hands of the younger, stronger, mortals.

It would mean birth control would have to become universal, and not optional. It would mean forced abortions. It would mean food shortages.

It is unpleasant that, as individuals, we have to die, but that's just the way reality goes.

by **Jay Aziza** on Wed, 12/20/2006 - 19:34 | [reply](#)

Unless We Move to Another Planet

by a reader on Wed, 12/20/2006 - 23:17 | [reply](#)

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