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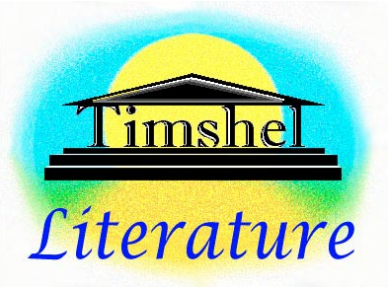

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Just Thinking, 10/06/03:

The Physics of the Antichrist, a Theory of Everything, II of VI:

Of Two Minds, a Paradox of Reality

by Justin Katz

Claiming It All

Although Frank Tipler rejects the idea of soul, humanity plays a central role in the physical framework that brings together the Omega Point, as described in *The Physics of Immortality*. Indeed, his entire theory grows from proposition that "the possible presence and actions of intelligent life cannot be ignored in any calculation of the evolution of the far future" (x).

The idea that human progress could place intelligent life in the league of the vast powers that guide the cosmos seems a laughable conceit from our current vantage point. But most of the universe's life span lies ahead of us, leaving plenty of time for exploration and experimentation. The rate of computer advancement even since Tipler published his book in 1994 is nothing short of amazing. Now, strides are being made in another crucial technology for Tipler's vision: nanotechnology, which seeks to maximize the utility of the individual atoms of a device for practical application.

As information technology converges with mechanical and chemical sciences, space probes will be able to go farther and do more. Tipler estimates that, by the middle of this century — certainly within the next few centuries — all of the technology and resources will be in place to

begin interstellar colonization. In 600,000 years, the inhabitants of the planet Earth will have extended their reach across the Milky Way Galaxy. At this rate, life will claim the entire universe in time to guide its collapse into a single point inhabited by an entity with extraordinary computing capability.

In one scenario, the process would begin with a "von Neumann probe," with the computing power and mechanical ability to act as a "universal constructor" — a machine capable of making anything that can be made, including copies of itself. Using nanotechnology, such a probe could be as small as 100 grams. Given this mass, if the machine were attached to an 8km light-propelled sail, with a giant lens orbiting the sun, the probe could travel at 90% of the speed of light and reach the star Proxima Centauri in about five years.

Once there, the probe would perform research, gather resources, and build copies of itself and the sail mechanism to send probes to the next-nearest star systems. Assuming it could not find a habitable environment, the machine would also construct a station suitable for life and synthesize human beings and other select animals and plants. The first generation at each star system would be raised by robot nannies.

This all may seem a bit too much like science fiction to be real. Nonetheless, barring unforeseen events within or beyond our control, the continual progress of human knowledge would lead us to a point approximating this prediction. Tipler correctly notes that humanity doesn't really have a choice if it wishes to survive perpetually. Whether it wishes to do so — either considering the end itself or the actions that such progress would require — is another question.

When I read this section of *The Physics of Immortality,* a scene in the movie *Independence Day* came to mind in which the President of the United States discovers that the aliens travel from star system to star system exhausting resources and moving on. To be sure, callously annihilating indigenous life, should we come across it, need not be a component of a

space-colonization strategy. Still, once again, bringing about the existence of God and a universal resurrection is a powerful source of moral absolution. Perhaps primitive life around the universe could be persuaded of the Earthlings' good intentions, or perhaps they could be worked around.

Either of these routes around ethical boundaries, however, could be time consuming, and it would be much more efficient to consider those life forms, themselves, as resources. After all, given a little research into their construction, they, too, would be resurrected by the Omega Point. Why should von Neumann probes have sufficiently strong emotions to overcome such logic?

The Fifth Wheel

On his way to board the *Pequod* for his famous whaling voyage in *Moby-Dick,* Ishmael is accosted by Elijah, who asks whether the shipping contract included a line about the workers' souls.

> "Oh, perhaps you hav'n't got any," he said quickly. "No matter though, I know many chaps that hav'n't got any, — good luck to 'em; and they are all better off for it. A soul's a sort of a fifth wheel to a wagon."

Given the substance of a machine capable of artificial intelligence and the way in which it will be developed, soul and emotion would seem likely to exist in it only were they to prove incidental to advanced computing capacity. Even accepting intelligent machines as living beings, however, there's no reason to suspect that they would share what, in some views, is a flaw in humanity.

Another possibility would be the deliberate inclusion of these qualities (imagining that we managed to reduce emotion to a mechanism). Tipler's scenario for the expansion of life throughout the universe suggests that souls would be undesirable in these machines. For one thing, they will be explorers into unknown, barren, and isolated regions of the universe. Were irrationality introduced into their processors, they could opt not to populate it.

More frightening is that neither rationality nor irrationality is proof against post-human life's rejecting the illogic of person-based ethics. If they take a rationalist view of reality, they will recognize the destructive absurdity of refusing to abide by their plan for the universe. If they are emotionally prone to self-preservation, they will become Omega Point fanatics. Perhaps they could be programmed to begin with a strict code of ethics, but as Tipler suggests when he argues that atheism will overcome religion if science finds no evidence of God, in "the end, reason will sway emotion" (9).

Professor Tipler addresses emotional rejection of the yet-to-happen history of the Omega Point when he responds to Carl Sagan's assertion that "the entire Universe is endangered by" von Neumann machines (86). Tipler's reaction is to end the conversation with an accusation of bigotry. "There will be people who in their heart of hearts remain human supremacists," he writes. "To those people, let me point out the consequences of your position: your permanent and very final death, and the death of your children" (87).

As a point of fact, those aren't the only consequences: according to his theory, rejection of that stage of progress would result in the "permanent and very final death" of every person who will ever exist. There can be no compromise at this level of motivation. This indicates the impossibility of accomplishing the Omega Point with any absolute ethics intact other than that growing from the Omega Point itself.

The Paradox of Progress

As Tipler illustrates when he looks to economics, sociology, and psychology to predict how post-human life will act, the human sciences must be subsumed into physics if the future is to be assessed. But Tipler doesn't go far enough. If the progress of life is necessary for the universe to result in the Omega Point, then all factors that influence life's behavior are, in their own capacity,

akin to forces of nature. Put another way, just as application of science directs the raw material of the universe, the conventions of human society direct raw human nature.

For example, if the Omega Point is to be reached, then human society must adopt an economic system that enables it to amass the wealth necessary to research and build the technology. It must also establish sufficient political freedom to enable free scientific inquiry. Other social systems would be required to prevent the arrogation of the process for the benefit of a single person or group to the detriment of society. I take religion to be the underlying component of belief that guides one's collection of the more circumstantial human systems into a coherent worldview. In this broadly defined sense, religion is the interface, if you will, between human nature and the sociological structures that work toward the long-term benefit of all.

The question then becomes whether human nature is, at some level, unchangeable. One limited test for mutability is to observe whether accepting ideas that seem contrary to human nature leads an individual into deeper personal dispiritedness and psychological corruption. In my opinion, the existence of this constant is obvious and can only be argued against with appeal to an ever-broader degree of social influence bordering on faith that the problem lies there.

As it happens, our culture is in the midst of just such an experiment on the social level. Here, we have a surplus of contested data, and people interpreting it tend to be emotionally committed to one side or the other. However, no matter the ideas that people characterize as "evil," if they guide humanity's course, then they are acting on a scale sufficient to affect the outcome of the universe. If one believes, as I do, that human nature mixes with materialistic science in such a way as to make objective evil inevitable, then what may be the central paradox of human history arises.

Granting all of Tipler's propositions, it could very well be that the mechanism that he describes is the method by which God creates Himself and Heaven. However, unless we discard

the rules by which Heaven is traditionally thought to be accessed — acknowledging soul and acting according to the ethics of religion — then the universe can't possibly reach that end point.

Tipler describes the "political consequences" of the philosophy that Friedrich Nietzsche built upon the scientific idea of Eternal Return, according to which the universe expands and contracts forever, as "catastrophic." Indeed, he points out that the swastika is the ancient symbol for the Eternal Return. I believe Tipler's Omega Point Theory to put him in a position similar to Nietzsche's. Evil ideas follow from the atheism that seems to accrue to scientific progress, even if the scientists would prefer they not. Furthermore, the farther along our progress gets, the less room there is to safely wrestle between good and evil. Not only does genocide, for example, become more efficient, but when murder is rationalized, technology makes it less visceral, less bloody.

All is not hopeless, however, if we acknowledge the importance of religion in its sphere. "For what is a man profited, if he shall gain the whole world, and lose his own soul?" (Matthew 16:26). When science and religion collide, if each is granted its own space to act according to its own purpose, solutions can be found.

Making a Mesh of Reality

Ironically, applying another scientific idea that the emotions tend to reject — the Many Worlds Interpretation — can resolve the science-ethics conundrum.

Tipler explains Many Worlds with reference to Schrodinger's Cat (168), a "thought experiment" in which a cat is placed in a device that gives it exactly a fifty-fifty chance of being alive at the end of an hour. When the experiment is finished, "Quantum mechanics says unequivocally that the cat is simultaneously dead and alive, in gross contradiction to common sense, and to what we would actually see." The Many Worlds Interpretation suggests that the circumstances of the

experiment have "forced the cat and all the other pieces of equipment to split into two different worlds," which presumably would continue in their own directions, including further splits.

What I've found repellent in the idea of many worlds has been its misapplication as a disproof of God. According to this argument, the purpose that we see in nature can be entirely dismissed by seeing our world as no more significant than all the other worlds that exist. We just happen to inhabit a universe that enabled us, but there are universes in which we couldn't exist; therefore, our life-supporting universe is not proof of a purposeful God.

Of course, one could argue that, if our souls are of inherent value and follow the one *true* reality, then that reality *is* privileged over those in which the soul does not exist. Taking this view, the scientists checking up on their cat in one of the two worlds would be soul-less shadows that would proceed throughout the rest of their "lives" in a false reality.

The problem is that there is nothing in this hypothesis, apart from personal conceit, to argue for singular souls. But note that, whether or not every world is "ensouled," there would be a reality that follows through to the Omega Point. If that Point were taken to include every diverged thread of reality, if God is outside of this quantum mechanical process, then we could refuse to take unethical steps toward the Omega Point without negating Its eventual existence, thus resolving half of the paradox of progress.

Unfortunately, this version of the Many Worlds Interpretation posits an inevitable God who sacrifices a multitude of souls, perhaps an infinite multitude, in order that He might live. Our following strict ethics would not prevent Him only because *nothing we do* could prevent Him. Yet, it would benefit my reality not at all that a Justin Katz in another reality manages to live forever as an emulation. Seen this way, adding Many Worlds has merely increased the complexity of the question about whether the persons whom the Omega Point emulates are, in fact, the people who once lived.

The Game of Life

I've argued that it is of central significance that the "resurrected" people in the Omega Point would not represent a continuation of experience. The next question is what or who the emulations would, therefore, be. On the matter of soul, there are three conceivable possibilities. One, they would have no souls in the sense that we do. Two, they would have souls that are unique from the originals. Three, they would share the souls of the originals.

Imagine that Beethoven were still alive and assume that his inspired genius does in fact represent a communication from his soul to the souls of those who enjoy his music. If we were to emulate him through a process that did not destroy the original, we could judge whether the copy is able to compose as compellingly. If the first possibility for soul (no soul) were the case, the Beethoven copy would not be able to "move" his audience to the same degree. In the second possibility, the copy might actually be a more compelling composer if his subsequent experiences were more conducive to creativity than those of the original.

Placing the copies side by side, the third possibility seems unimaginable, and I think most people would discard it unless experience proved otherwise. As Tipler suggests in the case of the cat, the existence of two synchronized copies of the same sentient being is contrary to common sense and to experience. In the Many Worlds Interpretation, we clearly do not perceive the lives of our other versions.

Tipler says that our future emulations will be computer programs running at a higher level of implementation. This means that the physical computer would run on our current level of reality, which those in the emulated reality would not be able to perceive. (A video game character, after all, has no way of perceiving the chips in which he exists.) I'm inclined to guess that the sort of soul that we have in our current "ultimate reality" would not be achieved by the

emulations. It further feels safe to suggest that the technology will never exist to "emulate" people at ultimate reality, which would require near-instantaneous construction of the body and brain.

A more accurate view of Many-Worlds might clarify the "simultaneous" existence of multiple versions of a person. The problem with the cat experiment is that it inserts the equation arbitrarily into an ongoing process. The cat placed in the machine is *already* one of myriad versions, diverged at every juncture in which it could have avoided the experiment altogether; it could also be the case that two divergences would effectively lead the cat back onto a track that it had previously avoided. Viewing all of time as a finished process, which is the perspective attributed to God by theologians and Tipler alike, the landscape is not one of mutually exclusive realities, but of a mesh of threads intersecting at every moment of a person's life.

It is less the case that multiple yous are living out their lives than that every state, every position, that you could physically take already exists, like frames in an interactive movie, with your continuous experience moving from one to the next. Seen this way, the laws of physics and of human nature are merely the rules by which God laid out the playing board of reality. Moreover, soul would seem to lie outside of the static field of possible moments, aligned with continuous experience. Otherwise, there would be no mechanism to record the moves made (or to keep score for judgment). Without such a "free-floating" soul, the single most observable phenomenon of life would be an improbable illusion even in the abstract. And yet it does exist.

Enter the Antichrist

To be sure, somebody with a God's-eye view of reality could trace a path all the way to the Omega Point. Taken this way, the objection that free will cannot coincide with an omniscient deity is based on a falsely limited definition of what an "omniscient" being knows. He knows everything that *could be,* and in a very real sense, everything that could be *is.*

But if this mesh is the entire reality, then why soul? Why even the perception of soul? The half of the paradox calling for strong ethics based on the idea of judgment is not resolved. It would seem the height of cruelty to create such a universe. How laughably futile it would be if we could individually choose to follow paths until one reaches a point of death, with no continuation of perception and having done nothing but choose between options of absolutely no consequence.

I reject this conclusion more decisively than I would any Godless view of reality — and so should every human being alive reject it on an emotional level. With or without soul, with or without God, this reading of reality would make utter selfishness the only logical driver of behavior. If post-human "life" is without soul, then the Omega Point would not be reached by any entities who existed in some way apart from His creation. If post-human life has a sort of soul, being more intelligent, it would have to realize the futility of everything and the lack of value of that which would not find immortality in the Omega Point. Insignificant and limited human beings who stood in the way of the immortality of von Neumann life based on foolish ancient superstitions would be of absolutely no consequence. "Evil" would be a nonsense term — and blameless, in any case, because it was required in order for God to exist.

But religion tells us that God is not evil. In such a case, the Omega Point created by post-humans could justifiably be seen as the Antichrist.

> Then you will be handed over to be persecuted and put to death, and you will be hated by all nations because of me. At that time many will turn away from the faith and will betray and hate each other, and many false prophets will appear and deceive many people. Because of the increase of wickedness, the love of most will grow cold... (Matthew 24:9-12)

Tipler, Frank J. *The Physics of Immortality* (Anchor Books, 1994)