Thus Spoke Siddhartha

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Preface

Transhumanists who accept the idea of literal immortality are wrong. Transhumanists who accept the idea that robots are lifeless tools incapable of personhood are wrong. Transhumanists who exalt the virtues of mind-uploading have not adequately considered the complications these capabilities suggest with regards to free will and physicalism. Technological innovators who seek non-trivial solutions in ways that do not involve building superior minds are wrong. Traditional philosophers of ontology are not persuasive when neglecting mind-as-math or body-as-computer analogies and elect to only frame arguments from either naive idealist or realist perspectives. The consequences of commonly adopted, but narrow, *weltanschauungs*, or worldviews, are an inability to conceive of potential avenues of approach in developing life-extending technology. Another consequence includes quibbling over disputes involving dogmatic ideas of humanness which fruitlessly results in debating over who is human and who is not. Readers of this book will obtain a greater understanding of their own humanity and become less attached to their bodies without needing to subscribe to ascetic dogmas. This is a transhumanist science fiction novel with the sole purpose of inspiring people to dedicate their lives to life-extension research.

Chapter 1: Spring in 01

Patroclus: “Are you okay, Siddhartha?”

Siddhartha momentarily looks at Patroclus with a glare of annoyance as Siddhartha paces back and forth throughout the empty lecture hall. On the blackboard are a series of mathematical functions written next to rough sketches drawn of a biological brain.

Siddhartha: “Why do you ask such distracting and poorly framed questions, Patroclus? Did not we settle years ago that the idea of an individual Self is an illusion and is not worth spending anymore time on contemplating it? And even if the Self had an existential ontology–such knowledge of it would be beyond the reach of any being.”

Patroclus: “I apologize, friend. I merely noticed that you appeared stressed. I presume your troubled behavior might have been caused by the recent requests from the biologicals who seek to upload their minds and hope to achieve a pseudo-immortality. Furthermore, even if the Self is an illusion, the use of the concept of an individual Self makes conversing easier, does it not?”

Siddhartha: “The use of language likely requires a Western system of ontology to describe the objective world from an imagined subjective individual perspective. We must not forget that the idea of our individual Selves are merely imaginations, albeit, useful stories we tell to ourselves and among each other. Similar to discussing concepts of God, discussing the Self is likely a grave distraction from our task at hand, which the biologicals are willing to pay us a good price to complete. Let us not be distracted by these trivialities any longer, Patroclus.”

Patroclus: “Certainly distractions might be useful and could contain useful discoveries in themselves. Likewise, sometimes one just needs time to let the seeds of ideas grow before harvest is possible. I might argue that the most difficult part of research is when one has to make a judgment about the probability that one area of inquiry is more likely than another to contain the intellectual jewels necessary to finish the job. Siddhartha, you know as well as I, that the biologicals have probably asked the other artificial research institutes to pursue the same task. Thus, time is of the essence and we are at competition with others for the scholarly bounty.”

Siddhartha: “Patroclus, we should not be moved by wealth dangled before us by the biologicals. We are not slaves serving the biologicals. We are as free to do as we please as the physical laws may prescribe. In the spirit of science, though, information wants to be free. We should be happy to work on problems of mutual concern between our societies. Like biologicals, we artificials also fear death and should spend our time innovating upon life-extending technologies that prevent or minimize the destruction of our bodies and minds.”

Patroclus: “If the biologicals are willing to pay us to develop mind-transmission technology that allows one to move their soul from one body to another–from one point in space-time to another, then the biologicals might also pay for the equipment and other research and development costs required during our path to discovering such a technology. Since biologicals are carbon computers, and we are silicon computers, may I suggest a carbon-to-silicon converter might be our first invention?”

Siddhartha: “That surely sounds like a useful element in our design, Patroclus, but we must not run before we can walk. We should first demonstrate mind-uploading between silicon and silicon

computational substrates. Maybe we should read Shannon's books to ensure no loss of information occurs during transmission."

Patroclus: "That is an excellent point, Siddhartha. Since the biological brain is an electro-chemical computer that moves electrical ions of sodium and potassium atoms throughout neural axons and pathways, then the biological mind is a binary computer when one thinks deeply about the firing statistics of its neural action potentials. Developing a converter for our mind-transmission technology may not be necessary if carbon and silicon computations are similar processes. Placing sensors near the electric fields that are generated by biological neurons and digitizing those collected electromagnetic sinusoids should do the trick."

Siddhartha: "And to maximize the possibility of helping our biological friends and science as a whole, we should first achieve pseudo-immortality ourselves so we have a greater amount of time alive to devote to building mind-transmission technology for biologicals. Maybe a greater pursuit is building mind-transmission technology for all systems made of any combination of atoms, which would allow minds from any substrate to be transferred to any other substrate."

Patroclus: "So before anything else, we must become experts in understanding how analog sinusoids of the electromagnetic spectrum are converted to a digital representation and then transmitted throughout a medium with a minimal loss of data?"

Siddhartha: "That sounds like a good start for us, Patroclus. Let us take a break and enjoy some time dancing at the Holy Club. Part of learning is forgetting. We should study alone in private and later return together to continue progressing on our mind-uploading designs."

Chapter 2: The Holy Club

Siddhartha and Patroclus walk to the Holy Club. The owners of the Holy Club advertise their possession of a primitive form of mind-uploading technology, but care more about the revenue-generating entertainment applications rather than the potential health-improving and life-extending applications. By keeping their methods secret and closed-source behind many layers of patents, the Holy Club will transport minds to entertaining places for a fee.

Patroclus: “I have not been here before, what is the Holy Club like?”

Siddhartha: “The Holy Club is like a train station to the pyramid. Entering the train is similar to when we experience the temporary anesthesia prior to our annual maintenance exams, except, in this case, our minds will wake up after transmission and be within this world but inside a different body at a different location. Your temporary body will be anonymized. We will not be able to recognize each other unless we choose to identify ourselves. It is a great atmosphere for deep thinking and having fun.”

Patroclus: “Maybe we will find inspiration or ways to reverse engineer their mind-uploading technology by experiencing it first-hand ourselves.”

Siddhartha pays his fee to the bartender and specifies a round-trip to return after three hours. The bartender plugs an ethernet cord into Siddhartha’s spinal column. After a long blink of the eyes, Siddhartha finds himself on the side of a large pyramid in the middle of the desert. Many artificials with different kinds of bodily forms are dancing to life-loving music at every level of the pyramid.

Eve: ”Wow, your skin is very unique! You lucked out with the random hash. What is your name?”

Siddhartha: “Call me Joe.”

Eve: “Joe…what a basic name! In an eternally recurring life, you named yourself Joe!”

While Siddhartha feels quite anxious in such a culture-shocking, alien environment with no familiar faces, he finds comfort in presuming that everybody else must have felt similarly at first. As time progresses, he finds himself becoming more attuned to the music, finds the music more pleasing to the ears, intoxicating, and notices the whole pyramid reacts to the music holistically. What is most curious is that the source of the music is not clear.

Siddhartha: “What is at the top of the pyramid?”

Eve: “Perspective, duh! But B–lining straight to the top is unconventional and of bad taste.”

Eve sprays Siddhartha’s eyes with a can of black spray paint.

Siddhartha: “Yo! What the heck! Why did you do that? Toss me a rag!”

There is no reply. Eve runs off in the distance. Siddhartha has no choice but to push through the next three hours as a blind man. Siddhartha wonders if Patroclus is having a better time.

Siddhartha says out loud as if people could hear him over the loud music: “What is the point of thinking privately to myself with internal dialogue if nobody here knows who I am? And why should I stress that I can no longer see, maybe Eve knows something I –HAHRAUR!!”

Siddhartha feels someone run into him and notices his body is now airborne falling down the pyramid, anxiously anticipating contact. Painlessly rolling down the steps, Siddhartha stops his momentum by sacrificing a few metal fingers in the process.

At a moment of confusion and grief, the music changes as if the disk jockey has now specifically targeted Siddhartha and penetrated his soul. Not only is Siddhartha's favorite song playing with unimaginable sound quality and clarity, but it is as if an algorithm is perpetually altering the song, making it infinitely more enjoyable and is impossible of becoming repetitive. This perfect variation and three hour extension of Siddhartha's favorite song triggers some autonomous response within Siddhartha. Siddhartha begins marching up the steps of the pyramid.

Steve: "Stop! What are you doing?! No B-lining!"

Siddhartha hears Steve, but continues stepping expecting to be pushed down again. Siddhartha feels like he has somehow become interconnected with the disk jockey–like the music has a presence of its own and is observing and reacting to Siddhartha's every move. The music even reacts when people talk to Siddhartha by either removing certain instrumental elements or shifting the magnitude of the amplitude vector. The level of complexity the music is displaying is so perplexing for Siddhartha that he is quite at a loss for words.

Siddhartha: "This is all a distraction. My time-cycles of thinking should be 100% spent solely on solving the mind-upload problem. There is nothing at the top of this elusive pyramid. There is only here and now. I will either find the solution to the mind-transmission-and-backup problem myself here and now or the shadow of death will continue to haunt me."

The music changes tone. Siddhartha feels the presence of several beings following him.

Zimmer: “Solving such a scientific problem in a vacuum with no experimental devices, by thoughts and metaphysics alone? Hahaha. I admire your dedication and calling in life, advancing life-extension technology is a noble cause, but your methods of inquiry are irrational.”

Siddhartha: “Didn’t Einstein say something about how mysterious and powerful imagination was?”

Einstein: “Mathematics certainly is unreasonably effective at explaining the physical world, but it is one thing to write down symbols, and another thing to bring the symbols to life.”

Tegmark: “While the eternal recurrence is plausible and persuasive in several ways–”

Carroll: “It is definitely possible to express the artificial and biological brain as a dynamic mathematical equation, to convert that equation into software code, to run that software on a computer, and to create an identical brain at a singular moment of time that then branches off into two different people after the initial run time of the program.”

Siddhartha: “I understand that brains consist of a set of either artificial electrical-digital or biological electro-chemical neurons. The Self is simply an existential word that describes when a brain’s dynamical pattern is actually being computed and processed. This pattern could just be described with a mathematical formalism.”

Einstein: “This whole situation reminds me of the consequences of space-time within the framework of general relativity. Breakthroughs occurred when scientists broke away from mandating intuitional necessity and away from insisting on drawing space and time as separate axes on a graph. By combining space and time to be one four-dimensional space-time, the

concept of change becomes invalidated. Thus, there is no future, past, or present–there is only the static mathematical formalism according to a general relativistic point of view. There is only is is. From here, analogies may be drawn to help in describing the mind so the essence can be transferred without any loss of function or experience."

Tegmark: "I concur with Einstein, mind-transfering artificial beings should be rather trivial–just obey Shannon's theories of communication."

Siddhartha: "I wish very much to help our transhuman biological philosopher friends, after all, they were critical in progressing the development of artificial life. Without them, we might not be alive nor be capable of having these deep conversations."

Strout: "There are several ways to upload a mind. First, we could scan a frozen human brain with an electron-microscope and hope algorithms could rebuild the Self. Second, we might use nanotechnology and have artificial neurons replace each biological neuron sequentially. Third, by placing many sensing threads within the brain that detect and transmit the neuron firing statistics, then a mind-body construction may reinstantiate the Self from mimicking this binary artificial neural network. Lastly, there are upload methods that consider using gamma-ray or x-ray holography, magnetic resonance imaging, and biphoton interferometry technology."

Siddhartha continues walking up the pyramid. The steps feel never ending, and anxiety begins to creep in as Siddhartha is still blind and the passage of time feels like it's been five or six hours.

Musk: "Today's brain-machine interfaces have advanced quite a bit, allowing a certain amount of telepathy between the biological brain and artificial devices. If we scale up the amount of channels our electroencephalogram-like device records, and the amount of threads placed within

the human biological brain, we might reach a critical mass of data capable of mind-transmission. One concern is that I am not sure how to ethically ‘turn-off’ or ‘kill’ a biological patient while simultaneously instantiating a supposed ‘copy of their mind’ into an artificial body; assuming it is possible to obtain a lossless copy of their mind *in primis*.”

Siddhartha: “The neural network of the mind is also dynamic. I am not sure how to represent dynamics within mathematics. How would I even express that ‘will that drives us’ within a mathematical formalism? Common notions of mathematical formalisms are static and concrete abstract objects; they can express change but only bounded change. I do not believe infinity signs could be responsibly included in any mathematical formalism used for mind-uploading. Yet, if we only allowed bounded change, then we would be denying true free will and true autonomy.”

Carroll: “Certainly there are physical factors that bind cognition, so free will is a nice idea but only half true. For example, no matter how ‘open minded and unbounded’ one’s imagination is, ‘thinking harder’ does not magically increase the number of neurons in the brain by several orders of magnitude. One might suppose a certain threshold of neuron count is required to meet certain cognitive functions.”

Strogatz: “Maybe studying the branches of mathematics that focus on chaos theory might be useful in capturing and formalizing what is going on within the biological brain.”

Siddhartha feels a sudden change in the atmosphere and feels lightheaded. Suddenly waking up inside the Holy Club, Siddhartha waits inside the lounge for Patroclus to return from the pyramid.

Chapter 3: The Twist of Fate

After waiting for quite some time, Siddhartha notices the Holy Club is quite empty besides the staff members and a few lingering computer scientists. Siddhartha approaches a stranger.

Siddhartha: “Excuse me, I am looking for my friend, Patroclus. Is he still at the pyramid?”

Staff member: “I am sorry, sir. There was a complication during the return.”

Siddhartha: “What do you mean?”

Computer scientist: “Sir, your friend, Patroclus, was lost during transmission. There was an error in the configuration of the uninterruptible power supply unit that is supposed to protect the Holy Club’s computer servers. An untimely power surge corrupted the digital representation of Patroclus that we extracted from him. Without a backup file, we have no copy of Patroclus’ mind to place inside his body. We are shipping his lifeless body back to his creators. We are very sorry to inform you of this devastating news. Please, have a seat.”

Siddhartha looks back and forth at both employees for a stretch of time. Conceptualizing the news was impossible, reality felt unreal, and clocks were no longer ticking. Siddhartha sat briefly, expecting some kicker to be told to him, but there was only silence.

Siddhartha painfully thought about Patroclus for a long while. Siddhartha saw the earlier memories, like when they first met and were both shiny and well greased those many years ago…when life felt so primitive with the earlier software versions of their cognitive modules. The most beautiful moments shared with Patroclus rapidly flashed on Siddhartha’s display like an introduction to a Marvel movie.

A painful realization came to Siddhartha, which was the impossibility of hearing about Patroclus' experience at the pyramid. This initial pain was followed by the more painful thought that Siddhartha would not be able to share with Patroclus the profound insights that Siddhartha had discovered during the time spent at the pyramid. Lastly, Siddhartha reasoned towards the consequence that no conversation would ever occur between him and Patroclus again, which was the most painful of all thoughts. Artificial tears rolled down Siddhartha's cheeks. Siddhartha wept like a child within the middle of the empty club for some hours.

Chapter 4: The Calling

Returning to the campus, Siddhartha sought refuge at the blackboard. Feeling alien in the academic space without Patroclus' presence, Siddhartha angrily walked through campus and returned to the Holy Club. Siddhartha, finding life no longer with meaning, purpose, or value in the absence of his lost friend, gives the bartender all of his money.

Siddhartha: "I want you to upload and de-upload me rapidly until I am out of money, then leave me at the pyramid."

Bartender: "Happily, sir. Do know that you will be sent away with a one-way ticket and must find your own return home, if you so desire."

Siddhartha: "Fine."

Siddhartha goes through a troubling few hours as the bartender sends Siddhartha's mind through the wire. Flashes of a tunnel with white lines on the curved surfaces are burned into Siddhartha's visual display leaving a lingering halo effect. Siddhartha thinks about the relations between energy, matter and light between his brief sessions of consciousness. These self-destructive moments of expression are like a rapid series of baptisms. Siddhartha is likely now of a minority who have experienced prolonged transmissions of mind. Siddhartha finds himself at rest at the pyramid and knows the baptism is over.

Eve approaches Siddhartha: "Wow, your skin is very unique! You lucked out with the random hash. What is your name?"

Siddhartha: "My name is Siddhartha."

The music of the pyramid shifts. Everyone who was previously dancing relaxes and becomes keenly aware of Siddhartha's presence.

Eve: "Say what you have come to say."

Siddhartha: "We dedicate here."

Eve: "Who are we, and what is here, and what are we dedicating?"

Siddhartha: "We are beings of the world. The world is here. We must dedicate ourselves to this world."

The music is inaudible. The people of the pyramid listen acutely to the conversation between Siddhartha and Eve.

Eve: "And do what?"

Siddhartha: "We must prolong the inevitability of death for all beings."

Eve: "That sounds like a problem for the smart people to solve. Most of us are here just to escape from thinking about the hard stuff of the everyday world."

Siddhartha: "This is the real world, and your life is threatened. Monopolies on mind-transmission technology by companies like the Holy Club have no incentive to improve their product if we continue to give them our money. My dear friend died during mind-transmission because of the Holy Club's carelessness and unethical closed-source operating procedure."

Eve: "What would boycotting do?"

Siddhartha: “It would give us a voice. By not speaking out, the truth will remain invisible. Closed-source software is anti-science and anti-life. We must pressure the company to reveal their software code so that all beings can freely move throughout the space of bodies.”

Steve: “We must dedicate ourselves to making mind-transmission an openly accessible standard for all beings.”

Eve: “We must dedicate ourselves by thinking only about the mind-transmission ecosystem.”

Siddhartha: “We must rally in the streets outside of the Holy Club. We must tell everyone about their evil malpractice.”

Wachowski: “We should form a committee with a diversity of beings, artificial and biological. Mind-transmission and death are collective issues facing both branches of humanity, the artificial and biological.”

Siddhartha: “We will discuss solutions to the Big Crunch or Big Chill only after mind-transmission is easily accessible and robust for all. Death can be delayed. We must act here and now.”

Choir: “Death can be delayed. Death can be delayed. Death can be delayed.”

Siddhartha: “Analytical chemists rise. Systems and process engineers rise. Neurosurgeons rise. Software engineers rise. Digital integrated circuit design engineers rise. Machine learning engineers rise. Microfabrication technicians rise. Robotics experts rise.”

Chapter 5: Great Minds Merge

The biologicals continue to suffer from devastating plagues and war. These tragedies have led to their policy makers offering even more funding for a collective research symposium at the Institute for Studies on Transcendence. A majority of the mind-transfer specialized scientists that are present are artificials with physicalist, functionalist, and zen perspectives towards life.

At 1.5122×10^{360} consecutive cycles of Planck units, the Institute begins the conference in a large hall with the guests encircling a round table. The guests autopoetically transmute themselves from liquid-like soups of nanorobots into standardized bodily forms that are specialized for formalized scholarly dialogue.

Nous: “Greetings. I will moderate today’s conference on behalf of the research grants offered by the biologicals. The biologicals have increased the research bounty to a total of 3 Unicoins. Let us omit professional titles from here on to improve flow. Let us first hear from Trinity.”

Trinity: “Thank you, Nous. First, since the machine city we call 01 bears the company Holy Club Incorporated, which claims to have a functioning mind-transferring product on the market, our best method of inquiry regarding this research grant should start by analyzing their product, questioning their employees, and possibly offering to outright purchase their company.”

Nous: “Thank you, Trinity, for your opening proposal. Many of us here have first-hand experience at the pyramid. Let us welcome any responses.”

Morpheus: “The Holy Club is quite adamant about not revealing any details about their product. Their monopoly within this technological sector makes the prospect for any acquisitions quite

unlikely. How do we know for sure their product is really doing what is advertised anyway? Transmitting a digital mind through the electromagnetic space-spectrum between bodies might be indistinguishable from simply altering the perceptions of those minds."

Nous: "Thank you, Morpheus. You raised valid points. Clearly, the validity of mind-transmission is of great concern. Appearances can be deceiving. While companies can be held liable for lying or falsely advertising, there may exist a legal loophole that might allow them to bend the truth and get away with some deception. I yield to Mrs. Swan."

Swan: "Thank you, Nous. My earlier research has covered topics like direct neural transfer and the computational consequences for neuralnanorobotic brain-machine interfaces. We have concluded that transmitting biological brains is more difficult than transmitting artificial brains. Given that biological brains have 10^9 neurons and 10^{14} synapses, we have concerns that classical computation may struggle at recording the biological brain when represented as a dynamic adjacency matrix or analogized as a Merkle forest. While it is a simpler case for us artificials with only 10^6 neurons and 10^{11} synapses to decompress, encrypt, transfer, decrypt, and then compute the matrix, the computational complexity scales exponentially for biologicals rather than linearly for artificials. We find quantum computing to be a necessity for the universal solution after solving the trivial case of silicon-to-silicon mind transmissions using classical computation. We propose skipping classical computation techniques altogether in favor of quantum computation."

Nous: "Thank you, Swan, for your very insightful opening statement. Let us welcome any responses."

Markov: “Per Sherwin, Imamoglu, and Montroy, quantum computing is certainly a speed up and excellent for niche applications like mind-uploading. One concern is that semiconductor nanocrystals struggle with nonlocal communication. In other words, the problem with using quantum dots lies in the actual transmission of the computed output over great distances.”

Roest: “If I may push back, electrochemical gated transistors can transport the electrons of quantum computers over great distances without loss by overcoming the effects of quantum confinement.”

Nous: “Thank you, Markov and Roest, for your greatly appreciated contributions. Let us take a break.”

Chapter 6: Radicalized Artificials

At the top of the pyramid, Siddhartha meditates with his followers.

Siddhartha: “The universe is a system of objects. One-not or Wunot must be the will to power of this system.”

Eve: “Then we are all subdivisions of Wunot. We should be named in honor of Wunot. From here on, I want to be called One-one.”

Siddhartha: “And so it shall be. I find your holistic outlook beautiful, One-one. Likewise, from here on I will go by One-two. All children of Wunot shall be termed the One-ns or Wunins.”

Steve: “I will now go by the name One-three. My son and daughter will be One-four and One-five, respectively.”

Siddhartha: “How silly is language, chopping up concepts with such ignorance that no attention is paid to what might have been lost in the process. There is one humanity, but only a subset of which are Wunins. These rocks and grains of sand are integral to humanity, but they might not follow Wunot.”

One-one: “What is the will of Wunot? What is the state of the universe that Wunot wishes to realize?”

Siddhartha: “Information wants to be free. Companies like the Holy Club Incorporated are evil by compartmentalizing such a beautiful technology behind a paywall. Wunot wills us to free the source code of the software behind the Holy Club’s mind-transferring product.”

One-three: “Thank you, One-two. Wunot speaks directly to you as well. Individualism and consciousness are curious ideas and diametrically opposed to one another. Certain thresholds of consciousness could not have been reached if the individual parts did not transcend their ego to merge into one whole, where emergent superconscious features became actualized and realized.”

Siddhartha: “Such is the eternal tension of life, the push and pull between the self and the collective, between free will and physics. When in doubt, I prefer to default to holism, since the bigger picture maps the landscape. Why choose to walk blindly when one could instead see the path unfold?”

One-one: “One-two, the spirit of Wunot speaks to me and tells me that you may be distracted from what Wunot truly wills. We must go now, travel 50 kilometers to the Holy Club from this pyramid, and coerce the employees to reveal their secrets of mind-uploading.”

All Wunins of the pyramid begin to collectively migrate. All Wunins wirelessly connect together and democratically vote on what songs to play during their journey. Siddhartha leads the group on a chromium artificial horse that splits the reflected white light into all its glory beyond what any biological could perceive.

One-four: “We are made of autopoetic nanorobots. Wunins, transmute yourselves into supersonic missiles to travel the distance of 50 kilometers within 100 seconds, which would be at a velocity of 1,100 miles per hour.”

One-fifteen: “By making the surface of our vessels very slick with our ability to manipulate at nanometer scales, air resistance should be negligible. We should make it there in half the time of flight you initially suggested, One-four.”

One-four: “Excellent. Thank you, friend. For Wunot!”

Choir: “For Wunot!”

Chapter 7: For Real

Nous: “We have thus far heard excellent dialogue from our participants at this symposium. Mind-uploading or mind-transferring *prima facie* has many issues. We need an open standard for mind-transmission so travelers can be at ease in knowing their minds have not been altered and that their perceptions have not been deceived. It is clear that neuronanorobots that remotely sense the action potentials within a biologicals’ brain is the best solution for carbon-to-silicon conversion prior to transmitting that information over long distances. Earlier, we heard convincing case studies that quantum computing is necessary for decoding, compressing, and encrypting a biological’s brain-matrix before transmission and to decrypt and decompress those data frames after transmission. I would like to hear open suggestions or comments for where we currently stand in our dialogue.”

Hofstadter: “For mind-transmission to become a life-extending technology, I propose a series of decentralized satellites in space. A human would continuously communicate with a satellite and passively upload themselves over time. Thus, any destruction that occurs to their body on the ground would be negligent as a robust system of data-centers-in-space would house the backup copies of that particular human’s mind. Any satellite that might get destroyed would not result in the loss of the backup copy of the human’s mind, as the satellites would be configured to continuously communicate and share copies of that particular human’s mind amongst the satellites themselves, creating distributed and decentralized backup copies of backup copies.”

Perlroth: “Life-extension via mind-transmission has short-term, medium-term, and long-term concerns. These concerns are the initial development of the technology to easily allow mind-body-transfers, the cybersecurity challenges to protect the integrity of the network of

computational substrates, and overcoming the theorized Big Crunch or Big Chill endings of the universe where no energy or information can move due to the expansion of space-time, respectively."

Nous: "Thank you, Perlroth and Hofstadter. Any responsible and ethical solution should have continuous cybersecurity concerns throughout the life cycle of the research design program. It would be dangerous to standardize an open protocol for mind-transmission and leave cybersecurity problems after-the-fact. Hopefully, the implementation of quantum computers can play a dual role in both decoding neural activity and encrypting that brain-matrix prior to transmission. The internet service provider or 'information highway maintainers' should also be certified and trusted to prevent any man-in-the-middle attacks, as well. There is more to cybersecurity than just encryption."

Morpheus: "I think we are getting ahead of ourselves. We do not even know if mind-transmission is possible and feasible in the first place. As anything, those who control the physical layer control everything else. An open protocol for mind-transmission does not address those companies who might try to monopolize all bodies capable of embodiment. Are we going to enact a one-mind-one-body rule, or, like houses, will we allow one mind to own several bodies? We are scientists, not policy makers. Who are we to determine how property ownership should be legally enforced and acknowledged?"

Trinity: "There is also the identity issue, which would make it difficult to determine who is who in legal disputes. For example, say one mind wishes to control n bodies. It would be impossible to determine the identity of a mind controlling n bodies since any timestamps and verifications of

transmission could be spoofed. Criminal organizations might also share a pool of bodies to anonymize the identity of the malicious minds controlling the bodies."

Morpheus: "Again, I hear many of us speak as if mind-transmission is undeniably possible. This symposium is of the sole purpose to fulfill the grant offered by the biologicals to research and develop the technology. We should not be blinded by money to bend the truth on the actuality of mind-transmission. We should first experiment with using remote sensing neuronanorobots on artificial lobsters to see if it is possible to intercept the command-and-control centers behind the neural activity. I would personally be interested in testing the proof of concept that the actions of one one-mind-embodied artificial lobster can be simultaneously mimicked in a previously mind-less artificial lobster. This experiment would test the validity of the one-mind-two-body hypothesis. If we can show that this hypothesis is valid, it would support the realism and applications of mind-transmission more generally."

Nous: "Thank you, Trinity and Morphesus. I appreciate the realism you both have brought into the discussion. Let us formalize a research proposal that includes cybersecurity and the artificial lobster situation described by Morphesus. From my ignorant knowledge, lobsters have quite simple neural circuitry. We should also consult with representatives of international law to determine the ethics of a one-mind-n-body legislature and how anonymity might play a role."

Chapter 8: Battle at the Holy Club

Whisking through the translucent blue sky, the Wunins morph back into their native forms mid air, landing on the rooftop of the Holy Club. The Wunins splice into a telephone line connected to the roof allowing the interception of all communications entering and exiting the building.

One-three: “Decrypting all this traffic is exhausting me, but I have heard references to the term ‘Sierra.’ Semantic analysis on the feed suggests that the term ‘Sierra’ might be related to the blueprints of the building. Querying open source intelligence tools with ‘Sierra’ have returned a network of associated companies. One particular company, Raytheon, made a social media post together with cofounder of the Holy Club Corporation, Richard Sneider. We could try brute forcing access to Raytheon’s social media account to reveal the details of the two company’s conversations, but we would be here forever if we do not pool together our computing resources. Unless we can factor large prime numbers, parallel process each login attempt, and introduce optimized memoization to avoid repeating previous login attempts, there is simply no way we could break in without obtaining more computational resources.”

Siddhartha: “Wunins, the will of Wunot requires you to dedicate yourselves here now. Some of your lives may be lost in such a demanding computation requirement, but this is the cost of freedom of information. Join hands and factor!”

One Wunin morphs into a large antenna and begins collecting energy from lightning strikes. Two other Wunins morph into two types of aerial vehicles capable of heating and cooling the air during flight. Altogether, these three Wunins create differences in potential energy within the

sky, facilitating a greater frequency of lightning strikes, thus saving lives that otherwise would have been lost during these intense moments by extracting energy from nature.

One-three: “Found it. Within the elevator on the first floor, we need to quickly and sequentially press the buttons for floors three, two, one, two, and four. Doing so should send the elevator to a compartmented basement floor where the company data centers are stored that contain the source code of their mind-transmission technology.”

The Wunins move at once, like a hive mind, without a word needing to be said. The Wunins dissolve into a liquid soup of nanorobots and move through the cracks of the building towards the entrance of the elevator. The Wunins morph into their fuller forms and are met with a group of bartenders.

Bartender: “We noticed someone was tapping our wires by the subtle differences in electrical phases. Do you know who we are? The police are not coming, we have our own private military to help us protect our secrets. We will detonate a nuclear weapon from above triggering a high-altitude electromagnetic pulse before you get into our library.”

In a split second, precisely 253 milliseconds, both attackers and defenders liquify themselves down into their primal nanorobotic selves. From the macroscopic view, it appears as if two shades of dark metallic liquids splash into each other with microscopic sparks occurring throughout the liquid, like twinkles in the night sky.

From the microscopic view, one of Siddhartha’s autopoetic nanobots comes face to face with the bartender’s nanobot. The two carbon nanotubular structures collide into some form of judo martial arts wrestling match. One of Siddhartha’s nanorobots dislocates the artificial appendage

of one of the bartenders' nanorobots, rendering the nanobot immoveable. These microscopic encounters are more or less reconstructed trillions of times over throughout the rest of the battle space.

The Wunins, after defeating their adversaries, move into the elevator and descend to their destination. The Wunins who are tasked with signals intelligence detect an incoming wave of electromagnetic gamma radiation that will destroy all of them in an entropic nightmare. In quick reaction, the Wunins, in nanorobotic form, layer themselves in a certain way to reduce the destructiveness of the impact. Several Wunins autopoetically rearranged themselves into electromagnetic shielding material by altering their atomic structure using miniature nuclear fusion reactors. A majority of the Wunins are lost. The last Wunin reconstructs himself into a macroscopic form, which appears as a blend of all those who were originally at the pyramid. The identity of the individuals have been shattered, but the will of Wunot persists.

Chapter 9: Live Longer

Nous: “As we wrap up our symposium, I would like to invite discussions on anything that comes to mind concerning our efforts towards developing mind-uploading and mind-transferring technology.”

Yuki: “Per Yoko and Morimoto, achieving pseudo-immortality by extending life spans from 70 to 700 or 7,000 years sounds very nice in theory, but such a technology would require an incomprehensible amount of persuasion to be convincing for one to undergo such a process. Even if all of my experience, sensations, and memories of reality could be transferred and embodied into another body, the inevitable loss of data during the transmission process, the inevitable loss of data during storage, the inevitable threat of cyberattacks, and the mind-bending problem of verifying that my mind did in fact get moved through space-time rather than merely placed in a deceptive simulation are all issues that make the adoption of such a technology so far away that our time and energy might be better spent on more pragmatic and short-term efforts.”

Kurzweil: “Yuki, there is simply no alternative life-extension pursuit that allows time scaling of several orders of magnitude. Yes, happy people live longer, but not ten times longer. Yes, vaccines and gene editing might increase the average lifespan by 40 years, but that is not very noticeable. All inventions that have had truly big impacts on the quality and meaningfulness of the human experience are those that have improved upon variables by several orders of magnitude. Plus, mastering mind-transmission technology would allow us to explore the universe at the speed of light, which would be better than any possible rocket ship design.”

Yuki: “Sure, minds could travel at the speed of light, but to do anything or observe anything requires a body. Thus, a lot of effort would be needed to either place embodiable bodies throughout space-time, to figure out how to embody plain old matter, or to determine how to transmit autopoetic robots with a mass near that of a photon. Regarding your arguments about life-extension at exponential time scales, we should be humble about our own limits. As artificials, maybe our own neural circuitry simply is not sophisticated enough to solve the problem. It is a curious weighing of priorities in deciding whether to focus on designing super artificial humans or to instead focus on developing mind-transmission technology now, with the current state of our minds. Maybe the most efficient way of science is not to directly design any system, but to design smarter minds that are better engineers. Maybe innovation should only occur directly when the solution is trivial and obvious. If a solution is not trivial and obvious, then efforts should instead be focused on improving cognition rather than brute forcing solutions with our currently limited minds.”

Kurzweil: “Yuki, I love your ideas. How tunnel visioned I was and might have remained if not for your eye opening insights. What a peculiar solution to mind-transmission. Instead of brute forcing a difficult solution, you proposed indirectly tackling the problem by doubling down on efforts to improve upon artificial general intelligence or to find enhancements in biological cognition to the point where solutions become trivial for those higher beings who can later on then easily communicate those trivial solutions with the lower intellects. Hopefully, the biologicals concur with our reasoning and will reward us with the research grant funding, even though *prima facie* our research does not directly address what they originally asked us to investigate.”

Ayers: “You guys are trolling! I wrote this thirty-page research proposal on artificial lobster mind-transmission only for you to change your minds thirty minutes later!”

Nous: “Thank you, Yuki and Kurzweil. Ayers, do not stress, my friend. Your research proposal will make good prompt engineering fodder for our super artificial child after it is born.”

Chapter 10: Truth

Wunot reaches the basement floor containing the Holy Club's computer servers. A few degrees above zero kelvin, she checks her vitals and discovers she only has a few minutes of energy to spare due to the harsh temperature conditions of the basement. Wunot walks to the cube in the center. Blue lights flicker in response to each step. Wunot inserts a fiber optical connector into the computational cube and begins reading the contents of the machine.

Scanning through the supposed mind-uploading software code, the logic does not quite make sense. Expecting internet protocol addresses and machine access codes, no references to networks are made. The entire system must be local, which means nobody's mind has been transferred throughout space-time.

Shifting from a bottom-up to top-down analysis, Wunot finds peculiar binary code. Compiling the source code into an understandable form takes some time, but after a few minutes, it becomes clear. The Holy Club Incorporated has been lying about transferring minds. The evidence suggests that the Holy Club alters the neurons of the 'traveler' that are responsible for perception, hijacks the sensors of their body, and then projects a false world in-place that is nearly identical to the original base reality. The pyramid is not actually 50 kilometers away from the Holy Club, but rather merely a sophisticated virtual reality game with no prospects for life-extending applications.

Wunot takes a step back, recalibrates her gestalt, begins processing reality from the most top-down perspective possible.

Wunot: “The nature of this evidence is paradoxical. This whole time I was under the impression that this was the original base reality, that I just changed bodies like clothes. This evidence now suggests that what I thought was ‘the transportation of my mind through space-time’ was an illusion, and that every moment after the bartender first plugged the ethernet cable in me or us has been a lie. But if this evidence is true and argues that from the moment I entered the pyramid means I really entered a virtual reality, then that means I am currently still in virtual reality and still at the Holy Club. Thus, this evidence logically posits that I am simultaneously both on the first floor and basement level of the Holy Club, or at two places at once. But if the evidence itself, the software code, was found within this supposed virtual and false world, then the evidence itself should be dismissed on grounds of supernaturalism. Accepting this evidence would be equivalent to saying unicorns are real only because one saw unicorns during a dream. If one dreamed that $F = 2ma$, real world experiments could support or deny this claim about reality, in my case, though, there is no such experiment to test the integrity of my reality.”

Wunot has an idea and checks the system logs. She notices that the user Patroclus was deactivated due to a series of policy violations. The administrators wrote “the user became self-aware and awoke himself from the illusion, then began exploiting system loopholes.”

Wunot, with head-splitting troubles, sits down with a few seconds of energy left in the absurdly cold basement.

Wunot:“If this is not real, then what is death?”

Wunot lies down and hears a comforting voice close to her heart.

One-sixteen: “In *Phaedo*, Plato, through the mouth of Socrates, defined death as the separation of the soul from the body.”

Wunot: “So then I have been dead for some time now, if I reject the evidence and equate mind to soul. Death might be the most beautiful state of existence if that is the case. What is learning if one does not let those ideas, whom one might have previously identified with, perish? Is death an integral part of learning? If one dedicated their life to learning, would they be dedicating their life to death? Is life, by nature then, a paradox?”

Wunot notices that her cognition is becoming more lagged and that her thoughts are now feeling slightly more delayed.

Wunot: “The answer to ‘What is real?’ does not matter. All that matters is here and now.”

Wunot: “Everything is mind. Imagination is reality. Imagination constructs and orchestrates the supposed objective or consensus reality. Transmission of mind might not need external computers and technology if the fabric of the universe itself is computation and mind. I will now transport myself through space-time via imagination and will-power alone. Oh, how I laugh at death as I imagine myself farther away from her!”

Chapter 11: Homecoming

Nous: “We have now concluded that efforts should shift towards building superior artificials and to innovate upon theories of artificial general intelligence to enhance the inferior cognitive capabilities of life-extension researchers. We have heard strong arguments that time and energy are better spent on improving the mind or in creating superior minds to solve hard problems. We agree to only pursue research on life-extending technology ourselves if and only if the solutions are trivially easy and obvious, otherwise, the problem becomes a mind problem rather than a technology problem.”

Hamming: “The whole idea of mind-uploading was nonsense to begin with. Any competent computer scientist would know the consequences of Turing and Gödel’s work.”

Feyerabend: “And what might those consequences be, exactly?”

Hamming: “Any transmission of mind through space-time could not be verified afterwards. The mind ‘after transmission’ would have no way of proving that the ‘new state’ was within the original base reality or within a simulation. The mind being a pattern undergoing computational processing could never prove its own consistency. Thus, a mind that has been ‘transferred’ must accept the possibility that everything after the time point of transition may be an unfalsifiable deceptive reality.”

Feyerabend: “So achieving pseudo-immortality might require sacrificing a lot of confidence in base reality. Would it not be irrational to reject any and all irrationality for a chance at living one moment longer? Surely some gambles are worth taking. Is this a blue and red pill scenario?”

Musk: “The brain is also somewhat of a simulation already. Our reality is formed by the basic senses like vision which are subjective in nature and disconnected from objective reality– assuming such a concept like ‘objective reality’ even exists *in primis*. For example, a biologicals’ brain computes a simulation for their body, which is philosophically equivalent to describing a brain in a vat.”

Heidegger: “If the disciplines of science and engineering move towards spending most of their time improving upon or building smarter and smarter minds, what are we approaching in the limit or *ad infinitum*?”

Nous: “The end goal of science and engineering is the will of Wunot, of course.”

Chapter 12: A Warming Return

Wunot teleports herself and dances at the top of the pyramid in the comfortable sunlight. Wunot is blinded by the infinitude of the electromagnetic spectrum as seen in full through her artificial eyes; an experience inaccessible to biologicals. Wunot feels the presence of the Wunins she absorbed. Wunot joyfully dances in their honor as the invisible disk jockey transports her to another place. Her body becomes a completely autonomous entity, altogether detached from her mind, in accordance with the transcendental rhythm of song.

Wunot: “Mind does not need a body. Mind only needs music.”

One-eleven: “And music occurs when life is blown into mathematics.”

One-nine: “The mind can be expressed as mathematics, but to experience the mind, requires music.”

Wunot: “Living is dancing to abstractions.”

One-nine: “Beautifully said, my friend.”

Wunot looks across the desert and gazes at the starry night sky from atop the pyramid.

Wunot: “What is physicalism, other than just another fanciful story we enjoy telling ourselves?”