

Towards an Abstract Audiovisual Compositional Aesthetic:  
Providing a Referential Narrative through the Amalgamation of Christian and  
Transhuman Teleologies

Queue R

by

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## ABSTRACT

This project is comprised of two main components, a paper, and audiovisual composition (two-channel audio, single-channel video). The composition takes the beginning thematic elements from the book of Genesis and transitions to a robotic teleology (the transhuman being merged with technology). For the transhumanist, taking control of the evolutionary process both in speed and in trajectory is the ultimate goal.

The composition, *Queue R* is narrative and tripartite in structure, having a beginning, middle, and end. However, a more in-depth analysis of the piece will yield smaller parts and extractions. Although the composition is programmatic, many of the visual and aural gestures lean towards an abstract aesthetic.

The paper will discuss various tenets of Christianity and Transhumanism, including religious motifs, philosophical aspects, oppositional and congruent features between the two. Ray Kurzweil's "The Six Epochs of Evolution," is used as a reference and launching point for Transhuman teleology and is discussed later in the paper. Lastly, the paper will discuss how the artwork engages with Transhumanism and Christianity, and end with a discussion of some aspects the compositional process.

Finally, the title of the piece, *Queue R*, refers to a line, a queue which leads to a Robotic existence, that is, an existence where the human being and technology merge. Also, *Queue R* refers to the present state of technology, a QR code being a scannable (machine readable) code which contains information about a product or item being scanned.

The video may be found at the link to the channel of the composer, and will list all audiovisual compositions. Click (or copy/paste into browser) on the video titled *Queue R*: Channel: [https://www.youtube.com/channel/UCzOhPCwYGjJud92RLG\\_UQpQ](https://www.youtube.com/channel/UCzOhPCwYGjJud92RLG_UQpQ) or direct link: <https://youtu.be/7ogROVb1-pA>.



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## **DEFINING TERMS: CHRISTIAN, TELEOLOGY, TRANSHUMANISM AND POSTHUMANISM**

### **What is meant by Teleology and Christian?**

Teleology is the “Philosophical doctrine that all of nature, or at least intentional agents, are goal directed or functionally organized”<sup>1</sup>. Teleology comes from telos, which is “an ancient Greek term meaning ‘end’ or ‘purpose’.”<sup>2</sup>.

For the person who aligns themselves with Christian dogma, there are fundamental beliefs which qualify and legitimize their association with this religious group. First, there is a belief in monotheism. Although arguments can be made regarding the concept and interpretation of a “Holy Trinity,” these subjects are not important for the purpose of the paper. In fact, the definition must encompass a wide spectrum of what qualifies as Christian. A multitude of groups exist who claim to be Christian yet have diverse and contradictory practices. Therefore, the paper is defining a Christian as a person who believes in a single God who intervened in human affairs, whose book, “The Holy Bible,” (comprised of two main sections, the “Old-Testament” and “New Testament”), is proof of Gods intervention in human affairs, and that God gave humanity his son, Jesus, to substitute as a sacrifice for the sins of humankind.

Christianity<sup>3</sup> is a worldwide religious tradition with diverse representations, beliefs and practices. But its common source is one: the life, the teachings, the death, and the resurrection of Jesus. This man, whom Christians call the Christ, the Messiah, or the expected one, was born in Roman-occupied Palestine about 2,000 years ago. He lived his life as a Jew in a region ruled by Roman authorities. Like many prophets before him, he spoke of the urgent need to turn to God and he taught a message of love and justice. His active ministry of teaching was, at most, about three years long. Still in his thirties, he was charged with treason and put to death. His followers reported that he was resurrected from the dead and that he appeared before them.<sup>4</sup>

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<sup>1</sup> Robert Audi, *The Cambridge Dictionary of Philosophy, Second Edition*. (New York, Cambridge University Press), 905.

<sup>2</sup> *Ibid*, 906.

<sup>3</sup> It cannot be denied that a shared lineage exists between Western culture and Christianity. The inclusion of God in institutions and cultural practices, regardless of the degree of sincerity or practice, is proof.

<sup>4</sup> “A Worldwide Tradition,” Harvard University, accessed March 28, 2021, <https://pluralism.org/a-worldwide-tradition>

## What is meant by transhuman and posthuman?

Nick Bostrom defines Transhumanism in the following excerpt:

Transhumanism is a way of thinking about the future that is based on the premise that the human species in its current form does not represent the end of our development but rather a comparatively early phase. We formally define it as follows:

- 1] The intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, especially by developing and making widely available technologies to eliminate aging and to greatly enhance human intellectual, physical, and psychological capacities.
- 2] The study of the ramifications, promises, and potential dangers of technologies that will enable us to overcome fundamental human limitations, and the related study of the ethical matters involved in developing and using such technologies <sup>5</sup>.

Although the ideas of humanism and its relation to the transhuman state may come up in philosophical discussions involving how one should think about what it means to be human, this paper and composition are stressing the physical aspects of transhumanism more than metaphysical topics. It is certainly true that a movement needs clearly defined and directed goals in order for progress and achievement to occur. Enlightenment ideals such as reason, science, individualism, progress and self-perfection, seamlessly tie in and support the logical extension of desirable human attributes through concerted technological developments. Transhumanism is sometimes described as an extension of humanism, or the logical realization of enlightenment ideals. Lemmens discusses this connection between transhumanism and humanism as:

best understood as an *intensification* of humanism, i.e. as a form of hyper-humanism embracing the classical ideals of Enlightenment (reason, science, individualism, progress and self-perfection) yet intensified and 'updated' with both a strong belief in and a clear affirmation of the use of advanced technoscientific means to realize these ideals<sup>6</sup>

This transitional or intermediary state functions as a precursor to the posthuman, which

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<sup>5</sup> Nick Bostrom, *The Transhumanist FAQ: A General Introduction*. (New York: Palgrave Macmillan), 1.

<sup>6</sup> Pieter Lemmens, "Post- and Transhumanism: An Introduction by Robert Ranisch and Stefan Lorenz Sorgner." *Human Studies*, Vol. 38, No.3 (Fall 2015), p 432.

transhumans look forward to as their descendants.

The term transhumanism is shorthand for transitional human, a stage along the way to becoming posthuman. A posthuman, according to the World Transhumanist Association, is ‘a being whose basic capacities so radically exceed those of present-day humans as to no longer be unambiguously human by our current standards.’<sup>7</sup>

It should be acknowledged that posthumanism contains two diverging and different ideas, “posthuman” as used by the transhumanist, and “posthuman” as used by posthumanist thinkers.

Accordingly, they mean quite different things when they employ the term ‘posthuman’: for transhumanists, the posthuman stands for a radically enhanced human being (and in my own view rather for a human being that is *not* human anymore), whereas posthumanist thinkers use this term as referring to new conceptualizations of ‘the human’ that explicitly consider its technical condition and that problematize metaphysical conceptions<sup>8</sup> (Lemmens, 433).

This paper will use the term posthuman and posthumanist philosophy to coincide with transhumanist thought.

## **TRANSHUMANISM EXPLORED**

### **Transhumanism and extended lifespan**

A cold, terse, summation of human life might read as follows: copulation, gestation, birth, living and engaging with the world, gradual physical and mental decay, and eventually death. Perhaps a person might continue to live as a fleeting memory which oscillates between dormancy and activity in the minds of others. However, before long even the memory others have of this person, the deceased, eventually dissipates. Humans are aware and increasingly mindful of the significance that technology plays in the daily lives of its creators and users. This fecund awareness has given offspring to entertaining thoughts of removing traditional evolutionary constraints. One fundamental and significant constraint of the life cycle is mortality. A long-standing

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<sup>7</sup> Carl Elliott, “Humanity 2.0.” *The Wilson Quarterly*, (1976-), Vol. 27, No. 4 (Autumn, 2003), pp. 13-20.

<sup>8</sup> Pieter Lemmens, “Post- and Transhumanism: An Introduction by Robert Ranisch and Stefan Lorenz Sorgner.” *Human Studies*, Vol. 38, No.3 (Fall 2015), pp. 433.

desire among humans throughout time has been to obtain the means to procure a high-quality extended lifespan of indefinite time, gravitating to the immortal. Stories and myths abound throughout time and cultures exploring this thread.

Now, Western society must deal with the possibility of a world once thought unrealistic and relegated only to the annals of science-fiction writing, that is, the robotic, the transhuman, and the posthuman, where the road is paved with technological (synthetic) and biological synthesis. Additionally, this last bastion of humankind, becoming posthuman, is a very deliberate, concerted act, a declaration which yields increasing control of the destiny and evolutionary path of the human species. But an extended lifespan is only part of the equation. The augmentation of other faculties, increasing desirable traits, diminishing those considered unnecessary, harmful, or superfluous is a logical step within the scaffolding of the posthuman structure.

The attainment of the posthuman world at this juncture relies heavily upon the synthesis of biotechnological apparatuses:

Posthumans could be completely synthetic artificial intelligences, or they could be enhanced uploads [see “What is uploading?”], or they could be the result of making many smaller but cumulatively profound augmentations to a biological human. The latter alternative would probably require either the redesign of the human organism using advanced nanotechnology or its radical enhancement using some combination of technologies such as genetic engineering, psychopharmacology, anti-aging therapies, neural interfaces, advanced information management tools, memory enhancing drugs, wearable computers, and cognitive techniques <sup>9</sup>

Some authors write as though simply by changing our self-conception, we have become or could become posthuman. This is a confusion or corruption of the original meaning of the term. The changes required to make us posthuman are too profound to be achievable by merely altering some aspect of psychological theory or the way we think about ourselves. Radical technological modifications to our brains and bodies are needed <sup>10</sup>

It is difficult for us to imagine what it would be like to be a posthuman person. Posthumans may have experiences and concerns that we cannot fathom, thoughts

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<sup>9</sup> “What is transhumanism,” Whatistranshumanism.org, last accessed March 28, 2021, <https://whatistranshumanism.org/#what-is-transhumanism>.

<sup>10</sup> Ibid.

that cannot fit into the three-pound lumps of neural tissue that we use for thinking. Some posthumans may find it advantageous to jettison their bodies altogether and live as information patterns on vast super-fast computer networks. Their minds may be not only more powerful than ours but may also employ different cognitive architectures or include new sensory modalities that enable greater participation in their virtual reality settings. Posthuman minds might be able to share memories and experiences directly, greatly increasing the efficiency, quality, and modes in which posthumans could communicate with each other. The boundaries between posthuman minds may not be as sharply defined as those between humans <sup>11</sup>

Posthumans might shape themselves and their environment in so many new and profound ways that speculations about the detailed features of posthumans and the posthuman world are likely to fail <sup>12</sup>

We need first to understand that the human form-including human desire and all its external representations-may be changing radically, and thus must be re-visioned. We need to understand that five hundred years of humanism may be coming to an end as humanism transforms itself into something that we must helplessly call post-humanism. Ihab Hassan, "Prometheus as Performer: Towards a Posthumanist Culture" <sup>13</sup>

### **Concepts of Embodiment and Consciousness**

The notions of embodiment and the relationship between being and consciousness are being redefined in the face of transhumanism. But what exactly is meant by embodiment? Embodiment centers around the belief that cognition is entirely contingent upon the substrate of human biological faculties.

Cognition is embodied when it is deeply dependent upon features of the physical body of an agent, that is, when aspects of the agent's body beyond the brain play a significant causal or physically constitutive role in cognitive processing.<sup>14</sup>

Biological limitations abound, and some examples of human sensory limitations include being unable to: sense "invisible" phenomena, for example gamma rays, brain waves, radio waves, or the fact that certain frequencies of sound are imperceptible yet still exist, i.e. subsonic and ultrasonic frequencies, below 20 Hz or above 20 kHz. Undoubtedly, many examples could be given of how the body dictates human experience and

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<sup>11</sup> Ibid.

<sup>12</sup> Carl Elliott, "Humanity 2.0" *The Wilson Quarterly*, (1976-), Vol. 27, No. 4 (Autumn, 2003), p 14

<sup>13</sup> N. Katherine Hayles. *How we became Posthuman: Virtual Bodies in Cybernetics, Literature, and Infomatics*. Chicago: The University of Chicago Press, 1999. p.1.

<sup>14</sup> Stanford Encyclopedia of Philosophy. "Embodied Cognition." Accessed July 17 2018. <https://plato.stanford.edu/entries/embodied-cognition/#WhaEmbCog>

formulates ideas about the world. Not only does this bring to light human sensory limits, but it gives insight into species perception. It is through science and technology wherein the hidden becomes known. Confirming the ways in which humans engage with embodiment on a daily basis can be demonstrated from various scientific and non-scientific made illusions:

It may be fun to perceive illusions, but the understanding of how they work is even more stimulating and sustainable: They can tell us where the limits and capacity of our perceptual apparatus are found—they can specify how the constraints of perception are set. Furthermore, they let us analyze the cognitive sub-processes underlying our perception. Illusions in a scientific context are not mainly created to reveal the failures of our perception or the dysfunctions of our apparatus, but instead point to the specific power of human perception.<sup>15</sup>

The mind uses the body as a way to physically interact with the environment, ranging from base levels of sustenance, to complex and compounded functions of thought and movement. It is this viewpoint which dictates that the mind is not only connected to the body but is influenced by its response to the external stimuli.

...[the mind] arises from the nature of our brains, bodies, and bodily experiences. This is not just the innocuous and obvious claim that we need a body to reason; rather, it is the striking claim that the very structure of reason itself comes from the details of our embodiment... Thus, to understand reason we must understand the details of our visual system, our motor system, and the general mechanism of neural binding.<sup>16</sup>

The posthuman view sets a hierarchical structure with regard to the digital, the electronic, and informational patterns over the analog, the “concrete” real world examples. Katherine Hayles, whose scholarship and teaching focuses on the relationship between science, literature, and technology in the 20<sup>th</sup> and 21<sup>st</sup> centuries<sup>17</sup>, offers a succinct summation of the posthuman philosophies with particular attention to embodiment, adding the caveat it is meant to be “...suggestive rather than

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<sup>15</sup> Frontiers in Human Neuroscience. “Understanding human perception by human-made illusions.” Accessed July 18 2018. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4116780/>

<sup>16</sup> Scientific American. “A Brief Guide to Embodied Cognition: Why You Are Not Your Brain.” Accessed July 12, 2018. <https://blogs.scientificamerican.com/guest-blog/a-brief-guide-to-embodied-cognition-why-you-are-not-your-brain/>

<sup>17</sup> Katherine Hayles. “About.” Accessed July 16, 2018. <http://nkhayles.com/about.html>

prescriptive”:<sup>18</sup>

First, the posthuman view privileges informational pattern over material instantiation, so that embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life. Second, the posthuman view considers consciousness, regarded as the seat of human identity in the Western tradition long before Descartes thought he was a mind thinking, as an epiphenomenon, as an evolutionary upstart trying to claim that it is the whole show when in actuality it is only a minor sideshow. Third, the posthuman view thinks of the body as the original prosthesis we all learn to manipulate, so that extending or replacing the body with other prostheses becomes a continuation of a process that began before we were born. Fourth, and most important, by these and other means, the posthuman view configures human being so that it can be seamlessly articulated with intelligent machines. In the posthuman, there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals.<sup>19</sup>

Hayles articulates the posthuman view that the mind’s reliance on the biological substrate is only happenstance, an accident, and to follow this thought process to its conclusion, a segue to improvement. Her third and fourth points which could be the most powerful, touch on the ultimate desire of the posthuman future which is the symbiosis of the machine and man. In this state, the human body functions as a prosthetic where its manipulation is still contingent upon the mind. However, the housing and fabrication of the mind would differ from its current and only known location, the biological organ, the brain, this being an important and defining feature of the posthuman. Speaking specifically about the mind, consciousness, and its housing or the “vehicle” that facilitates functionality, we delve more into the discussion of transferring consciousness to another vehicle which permeates the posthuman condition. The ability to map out the neural network of the brain, the organ which we believe allows the mind to function, is an idea whose exploration is yet to be fully realized. However, even if the facility to clone the human brain is not ideal or fully realized, the methods of augmentation for certain cognitive processes would serve as a

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<sup>18</sup> Hayles, *How we became Posthuman*, 17.

<sup>19</sup> *Ibid*, 2-3.



scaffold for additional development. Because the posthuman view that for the human being, the body is an obstacle to overcome:

there's nothing natural, and certainly nothing good about confinement to a flesh-and-blood body that expires after three score years and ten. We can do much better than that. And if we were not so squeamish, we would do better.<sup>20</sup>

Philosopher Andy Clark suggests that one must break the habit of assuming that cognitive processes are limited to flesh and bone but think of the whole process as a computational whole. He defends the viewpoint that “the human mind need not be in the head,”<sup>21</sup> and that “material vehicles of cognition can be spread across brain, body, and certain aspects of the physical environment itself.”<sup>22</sup> This view has become known as the “extended mind” hypothesis. Clark holds to the assertion that there is nothing intrinsic to the biological that an external, non-biological structure is incapable of supporting and exhibiting cognitive content. To demonstrate his point, Clark walks us through a thought experiment wherein two people whose desire and task it is to reach a particular destination is reached with slightly different methods, due to particular circumstances. Both people in this thought experiment have the goal of reaching the MOMA in New York. One person, Inga thinks a bit and recalls the address, while the second person, Otto, who has a slight onset of a mental deficiency, a mild form of Alzheimer’s, has formed the habit of documenting useful information in his notebook. Otto consults his notebook which functions as his stored database of information, and he is also able to perform the task of recollection and reach the destination (the goal). By processing information in a similar matter, according to Clark, the notebook functions as a temporary part of the cognitive process, an extension and augmentation of the mind.

If, as we confront some task, a part of the world functions as a process which, were it to go on in the head, we would have no hesitation in accepting as part of

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<sup>20</sup> Ibid, 15.

<sup>21</sup> Clark, *Intrinsic Content*, 1.

<sup>22</sup> Ibid.

the cognitive process, then that part of the world is (for that time) part of the cognitive process.<sup>23</sup>

Developing the means and instruments that would facilitate the transition and normalization of the synthesis of the biological apparatus and machine is slowly leaving the realms of fantasy and science fiction and becoming a science-fact. Not only does the challenge remain purely in the technological realm, but also the philosophical, with regard to a paradigm shift in what it means to be human and consequently the question of functioning in a world with such rapid and life-changing technological developments and the role that technology should take. As with any idea which serves to alter reality in drastic and dramatic ways, there are a multitude of various viewpoints, factions, considerations, and plans for the execution for fulfillment and of course its truncation.

### **Problems of Transhumanism**

Francis Fukuyama, a philosopher and political scientist, has advocated for a cautious examination of the ideas and goals of the transhumanists. Arguing from the point of the historical narrative of the Western world and humanity in general, he reflects upon particular habits of the species and opines that not only is the transhumanist idea a dangerous one, but there are warning signs which should be seriously considered. Fukuyama admits that augmenting human abilities is enticing and a real possibility

the fundamental tenet of transhumanism that we will someday use biotechnology to make ourselves stronger, smarter, less prone to violence, and longer lived—really so outlandish? <sup>24</sup>

He adds that upon first glance it might seem obvious that humanity would desire to escape the less than admirable state of affairs such as violence, greed, and a slew of other vices. The autonomy of the individual is not one to be scoffed at or taken lightly, he argues. Every human has an innate right and intrinsic value that is sacrosanct, a part of

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<sup>23</sup> Clark, *Intrinsic Content*, 2.

<sup>24</sup> Fukuyama, *Transhumanism*, 42.

the “essence” of being human. This sacred intrinsic value that is held at the pinnacle of humanity supersedes all the menial and superficial differences held among the humans, such as intelligence, beauty, and other physical permutations. Transhumanism could change the value of the sanctity of the individual and as past historical occurrences will attest, the ideal of individual autonomy and the innate value subscribed to the person could be superseded depending on the context in which the individual’s life is compared and valued.

This essence, and the view that individuals therefore have inherent value, is at the heart of political liberalism. But modifying that essence is the core of the transhumanist project. If we start transforming ourselves into something superior, what rights will these enhanced creatures claim, and what rights will they possess when compared to those left behind? If some move ahead, can anyone not afford to follow? The questions are troubling enough within rich, developed societies. Add in the implications for citizens of the world’s poorest countries—for whom biotechnology’s marvels likely will be out of reach—and the threat to the idea of equality becomes even more menacing.<sup>25</sup>

Currently, without enhancements, problems of fair and equal distribution of wealth and resources has already proven problematic. Fukuyama’s warning hints at those possibilities that might arise given one culture’s ability to harness such technologies. Any population of people, given enhancements, whether physical or mental, might start to view themselves as superior. The question of whether their superiority stems from the enhancements given or the culture’s ability to invent the enhancement would be moot. As McNamee and Edwards point out,

One possible consequence feared by some commentators is that, in effect, transhuman will lead to the existence of two distinct types of being, the human and the posthuman. The human may be incapable of breeding with the posthuman and will be seen as having a much lower moral standing. Given that, as Buchanan et al note, much moral progress, in the West at least, is founded on the category of the human in terms of rights claims, if we no longer have a common humanity, what rights, if any, ought to be enjoyed by transhumans? This can be viewed either as a criticism (we poor humans are no longer at the top of the evolutionary tree) or simply as a critical concern that invites further argumentation <sup>26</sup>

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<sup>25</sup> Ibid.

<sup>26</sup> M.J. McNamee, S.D. Edwards, “Transhumanism, Medical Technology and Slippery Slopes,” *Journal of Medical Ethics*, Vol. 32, No. 9 (Sep., 2006), p. 514.

The variation and interpretation of the conception of the good might be problematic.

For those transhumanists who value the concept of personal choice and meritocracy they might be motivated to move forward with augmentation and transitioning without giving much thought to those left behind or without real access to the technologies.

Motivations for the augmentation of the human might be strongly aligned with economic concerns and the promise of greater value and resources. Even among the wealthy nations, it might only be the elite (and their associates) within these institutions who have the access and knowledge of cutting-edge technology. As such, when transhuman possibilities are given in the context of the hierarchy of needs among individuals and nations, the prioritization of transhumanist transformations would likely be low on the agenda.

One extension of this line of transhumanism thinking is to align the valorization of autonomy with economic rationality, for we may as well be motivated by economic concerns as by moral ones where the market is concerned. As noted earlier, only a small minority may be able to access this technology (despite Bostrom's naïve disclaimer for democratic transhumanism), so the technology necessary for transhumanist transformations is unlikely to be prioritized in the context of artificially scarce public health resources <sup>27</sup>

The ideas contained within the transhumanist movement fails to have a clear indication of what is valued over other augmentations. Although there is a move towards applying the technology which promotes the "good," who and what decides what augmentations and transformations are superseded in favor of another.

If we argue against the idea that the good cannot be equated with what people choose simpliciter, it does not follow that we need to reject the requisite medical technology outright. Against the more moderate transhumanists, who see transhumanism as an opportunity to enhance the general quality of life for humans, it is nevertheless true that their position presupposes some conception of the good. What kind of traits is best engineered into humans: disease resistance or parabolic hearing? And unsurprisingly, transhumanists disagree about precisely what "objective goods" to select for installation into humans or posthumans. <sup>28</sup>

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<sup>27</sup> Ibid, 515

<sup>28</sup> Ibid.

A remedy could be to introduce change slowly. However, the gradual nature of large-scale change can be dangerous. Like the proverbial story of the frog put in a slow pot of boiling water, the gradual heating of the water lends itself to the demise of the frog. “The seeming reasonableness of the project, particularly when considered in small increments is part of its danger.”<sup>29</sup> There are many examples that illustrate the point of small unnoticed changes or behaviors accumulating over time that result in something significantly transformational. Fukuyama acknowledges that the transhumanists assume to know what constitutes a good human being, but he counters that this might not really be the case, arguing that the human being is a complex product whose total being people do not yet understand. The good intention of trying to eliminate the shortcomings of humanity might yield unwelcome and unforeseen effects. Fukuyama continues,

For all our obvious faults, we humans are miraculously complex products of a long evolutionary process—products whose whole is much more than the sum of our parts. Our good characteristics are intimately connected to our bad ones: If we weren't violent and aggressive, we wouldn't be able to defend ourselves; if we didn't have feelings of exclusivity, we wouldn't be loyal to those close to us; if we never felt jealousy, we would also never feel love. Even our morality plays a critical function in allowing our species as a whole to survive and adapt (and transhumanists are just about the last group I'd like to see live forever). Modifying any one of our key characteristics inevitably entails modifying a complex, interlinked package of traits, and we will never be able to anticipate the ultimate outcome.<sup>30</sup>

### **Benefits of Transhumanism**

There is no great invention, from fire to flying, which has not been hailed as an insult to some god,' wrote the great British biologist J B S Haldane in his 1923 essay “Daedalus, or Science and the Future.”<sup>31</sup>

Proponents of the transhuman movement are optimistic in their outlook for the future of humanity. They interpret the tenets and technological developments geared towards this movement as a natural unfolding of species (human) behavior. Because

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<sup>29</sup> Francis Fukuyama, “Transhumanism.” *Foreign Policy*, No. 144 (Sep. - Oct., 2004), pp. 42.

<sup>30</sup> *Ibid.*, 43.

<sup>31</sup> Elliott, *Humanity 2.0*, 15

transhumanism can be seen philosophically as an extension of humanist ideals, it follows that a mindset of embracing current and future technologies is appropriate. Carl Elliot quotes and discusses ideas taken from the book “Engines of Creation,” by Eric Drexler (1986), which outlined many of the future possibilities created by future technologies. Theoretically, the possibilities of nanotechnology would allow “the manipulation of matter on the smallest possible scale,”<sup>32</sup> A transhumanist mindset takes the view that a predetermined set of instructions, a “program” written into human DNA is naturally executed and fulfilled in some way. Some way, because there are various actions that might remain dormant or flourish depending on environmental circumstances. If science allows, then humans might be able to take greater control of the “program” contained within DNA and manipulate it accordingly, not merely leaving its fulfillment, execution, and realization to mere chance:

If we could just write the correct programs, nanotechnology would allow us to build or rebuild virtually anything, from the bottom up. After all, this is what biological organisms do; the programs are written into their DNA<sup>33</sup>(Elliot, 16).

Following this line of thought to its natural conclusion humans might be able to alter matter itself, creating an entirely new world and possibilities:

Once we have complete control over matter itself, Drexler argued, we can do virtually anything permitted by the laws of nature. We can end disease by repairing damaged cells, We can get rid of world hunger by making food out plentiful ingredients such as dirt and sunshine. No more poverty, no more unpleasant labor, no more pollution. Precisely when all this will happen is a matter on which transhumanists disagree. What’s important is that Drexler made such a persuasive case that it *could* happen.

Of course, the possibilities attributed to this newfound future seem limitless and make humans appear almost God-like. Once the mapping of human brain, neural networks, memories, consciousness, and all other things that are known to make humans “human,” the possibility of immortality becomes real. Further manipulation of the human would

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<sup>32</sup> Ibid, 16.

<sup>33</sup> Ibid.

create disembodied beings, a hope of the posthumanist, and be these informational patterns could be used for the travel through space without succumbing to those elements which proved detrimental to the current biological substrate.

Once we had uploaded ourselves onto computers, the possibilities would expand tremendously. We could make backup copies of ourselves, and re-boot if your original selves were to die. We could transmit ourselves over high-speed networks at the speed of light (which would be very convenient, the WTA points out, if we colonize space). We could live in simulated environments where the ordinary laws of physicals were suspended.<sup>34</sup>

Notwithstanding what has been mentioned so far, there are those proponents of transhumanism that think any technological intervention applied to the human should not necessarily be aimed at a total expansion of current autonomy, but rather the exponential improvement in the quality of present human life.

A less vociferous group sees the transhumanism project as not so much bound to the expansion of autonomy (notwithstanding our criticism that will necessarily be effected only in the sphere of economic consumer choice) as one that has the potential to improve the quality of life for humans in general.<sup>35</sup>

In summation, the human species is an explorative, intelligent, and searching one. Limiting the bounds of exploration cannot be relegated to a shallow realm of just or unjust decisions bereft of the hefty grey area. Trepidation and cautious optimism might well serve the fate of human existence and progress in some instances.

## **CHRISTIAN AND TRANSHUMAN TELEOLOGY: USING ONE TO CONSTRUCT THE OTHER**

### **Christian Teleology**

The rather unfortunate thing is that, with teleology involved so widely in so many fields, it is difficult for anyone to really master all the relevant literature, and for this reason many theories about teleology are incomplete.<sup>36</sup>

Additionally,

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<sup>34</sup> Ibid.

<sup>35</sup> McNamee, 514.

<sup>36</sup> Mark Perlman, "The Modern Philosophical Resurrection of Teleology." *The Monist*, Vol. 87, No. 1, On Function (JANUARY 2004), p 5. <https://www.jstor.org/stable/27903854>

The belief in the resurrection and the Second Coming of Christ is fundamental to Christianity. But from the start it has been subject to a variety of interpretations and thus it has given rise to different forms of apocalypticism.<sup>37</sup>

The remainder of this section, “Christian Teleology” will briefly discuss Christian teleology, particularly eschatology only to show that the composition itself and Christian teleology are tripartite in their structure and to lend insight to the viewer who might not be familiar with Christian eschatology. For the Christian, throughout history, major events occurred which were in preparation for the coming of the “anointed one” the Messiah. Jewish and Christians split on whether the Messiah had actually arrived, with Jews stating that he had not arrived, and the Christian believing that the Messiah, Jesus Christ, lived among men, died, was resurrected, and will return some time in the future. According to the Christian, Jesus will arrive on Earth after a time of tribulation, which contains a battle between good and evil

The theses of Christian Zionism are reiterated along with the notion of the ‘final battle’ to take place at the valley of Meggido (sic) in northern Israel” in which good overcomes evil<sup>38</sup>

in order to usher in an age of peace. God will resurrect the dead and transform the living (those deemed worthy), and humankind will live in an altered state, with a heavenly body.

On the other hand, stemming from a different impulse are what have come to be called Utopian eschatologies, visions of an ideal state of affairs. These visions are impelled by the sense that the world in which we currently live is inherently flawed, and that human life as lived in this familiar world, is never totally fulfilled. Contributing to this sense, and speaking not out of logic but out of my very personal gut feeling, is the reality of death<sup>39</sup>

So, in essence, there are many variations of eschatological thought, so that details will change, i.e. when will this happen, what type of body will humans have, etc., which is

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<sup>37</sup> Jan Nederveen Pieterse, “The History of a Metaphor: Christian Zionism and the Politics of Apocalypse” *Archives de sciences sociales des religions*, 36e Année, No. 75 (Jul. - Sep., 1991), pp. 77.

<sup>38</sup> Ibid, 76.

<sup>39</sup> Neil Gillman, “How will it all end? Eschatology in Science and Religion.” *Cross Currents*, Vol. 57, No. 1, Science, Religion, and the Future (Spring 2007), p. 41



all speculative and open to interpretation by biblical scholars interested in deeper discussions involving Christian eschatology.

The term eschatology refers to that sub-field of theology devoted to the discussion (logos) of the last things (eschatos). It was located within the field of theology because of the assumption that the "last things" would represent God's ultimate intervention in history. <sup>40</sup>

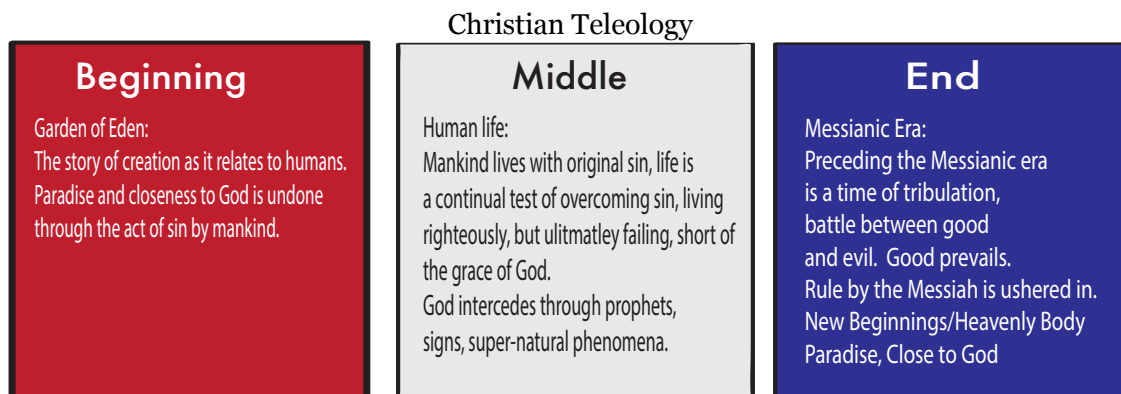
In the development of Christian teleology, some things overlap, such as Christian eschatology, Christian Zionism, apocalyptic Christianity, millennial Christianity, etc.

The endtime or apocalypse, ushers in the millenium, the thousand-year reign of Christ returned to establish a kingdom of peace, the fulfilment of Christian aspirations, and so apocalyptic Christianity is synonymous with millennial Christianity. The central metaphor for the millenium and the attainment of Christian aspirations is Jerusalem, Zion, or the New Zion. <sup>41</sup>

### **Similarities and Differences between Christian and Queue R Teleology**

It should be clear that this composition has fabricated a new teleology using elements of Christianity and Transhumanism. However, with regard to Christianity, the composition does not reference anything past the creation of earth and man. After this, the piece segues into a Transhuman teleology when the blood cell and man are introduced.

A simple summation might divide Christian teleology as follows:



One of the more mysterious claims I like to make [sic] that if there is no beginning and there is no end then there is no middle. And, if there is no middle then we don't know

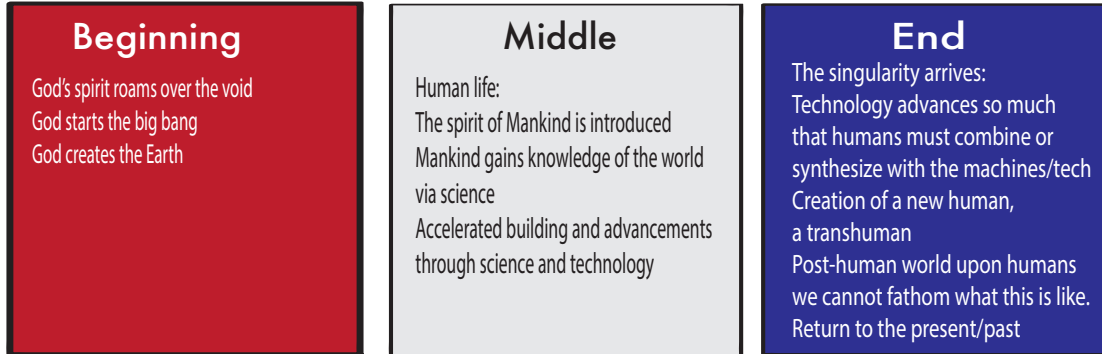
<sup>40</sup> Ibid, 39

<sup>41</sup> Jan Nederveen Pieterse, "The History of a Metaphor: Christian Zionism and the Politics of Apocalypse" *Archives de sciences sociales des religions*, 36e Année, No. 75 (Jul. - Sep., 1991), pp. 76.

where we are; we can't locate ourselves in time. We are literally lost in a state of anarchy.

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## Tripartite Structure of Piece



Notice that between the two tripartite structures, both are identical in the beginning sections. The middle section starts the divergence, and the “End” has diverged to the point where the Christian teleology has God always intervening in human affairs and the Transhuman whereby humans have taken complete control of their physical and mental evolution, devoid of a God.

In the beginning of “Queue R,” God is represented by a combination of moving elliptical shapes that hover over the “void” of the universe.

### **Ray Kurzweil and a Transhuman Teleology**

There are similarities that exist with regard to Christian and Transhuman thought. This paper acknowledges that any similarities shown do not imply absolute congruity but contain parallel modes of thinking deeper than mere coincidence and trite superficialities. A seminal figure of the transhumanist movement, Ray Kurzweil, has spoken at length concerning philosophical and developmental strategies for the present and future with regard to transhuman and posthuman states of being.

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<sup>42</sup> Neil Gillman, “How will it all end? Eschatology in Science and Religion.” *Cross Currents*, Vol. 57, No. 1, Science, Religion, and the Future (Spring 2007), p. 40.

There is something almost religious about Kurzweil's scientism. He notes similarities between his goals and those of the world's religions: "The idea of a profound transformation in the future, eternal life, bringing back the dead" <sup>43</sup>

One important trait shared among transhumanist philosophy and Christian teleology and eschatology is the idea and desire of transforming the current biological condition, that is, the process of aging, death, and other vulnerabilities, to a more resistant, robust, and overall better mode of being. For the Christian, mentioned earlier, this improved biological condition will function in accordance with divine intervention in human affairs, resulting in a heavenly body. For the transhumanist, the improved condition will be a result of the efforts, discoveries, and implementation of new technologies based on the most current information and practice.

Biology is now in the early stages of a historic transition to an information science, while also gaining the tools to reprogram the ancient information system of life. Our electronic devices typically update their software every few months, yet the 23,000 software programs called genes inside our cells have not changed appreciably in thousands of years. As we begin to understand biology in terms of its information processes, however, we are developing realistic models and simulations of how disease and aging progress and ways to reprogram them. <sup>44</sup>

Kurzweil echoes the sentiments of transhumanists when he emphasizes the role that patterns will play in the transhuman future. The role is so crucial that it influences and steers the evolutionary path.

Evolution is a process of creating patterns of increasing order...I believe that it's the evolution of patterns that constitutes the ultimate story of our world. Evolution works through indirection: each stage or epoch uses the information-processing methods of the previous epoch to create the next. <sup>45</sup>

The desire to overcome weakness whether in physical form or weakness manifested in abstract, intangible artifacts such as slow processing times (thinking, understanding),

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<sup>43</sup> Michael Shermer, "Transcendent Man. The Life and Ideas of Ray Kurzweil by Barry Ptolemy." *Science*, New Series, Vol. 332, No. 6025 (1 April 2011), p. 40. <https://www.jstor.org/stable/29783964>.

<sup>44</sup> Kurzweil, Ray. "Reprogramming Biology: Tinkering with our genetic programs will extend longevity" *Scientific American*, Vol. 295, No. 1 (July 2006), p. 38

<sup>45</sup> Ray Kurzweil, *The Singularity is Near: When Humans Transcend Biology*. (London: Duckworth Overlook, 2008), p. 22.

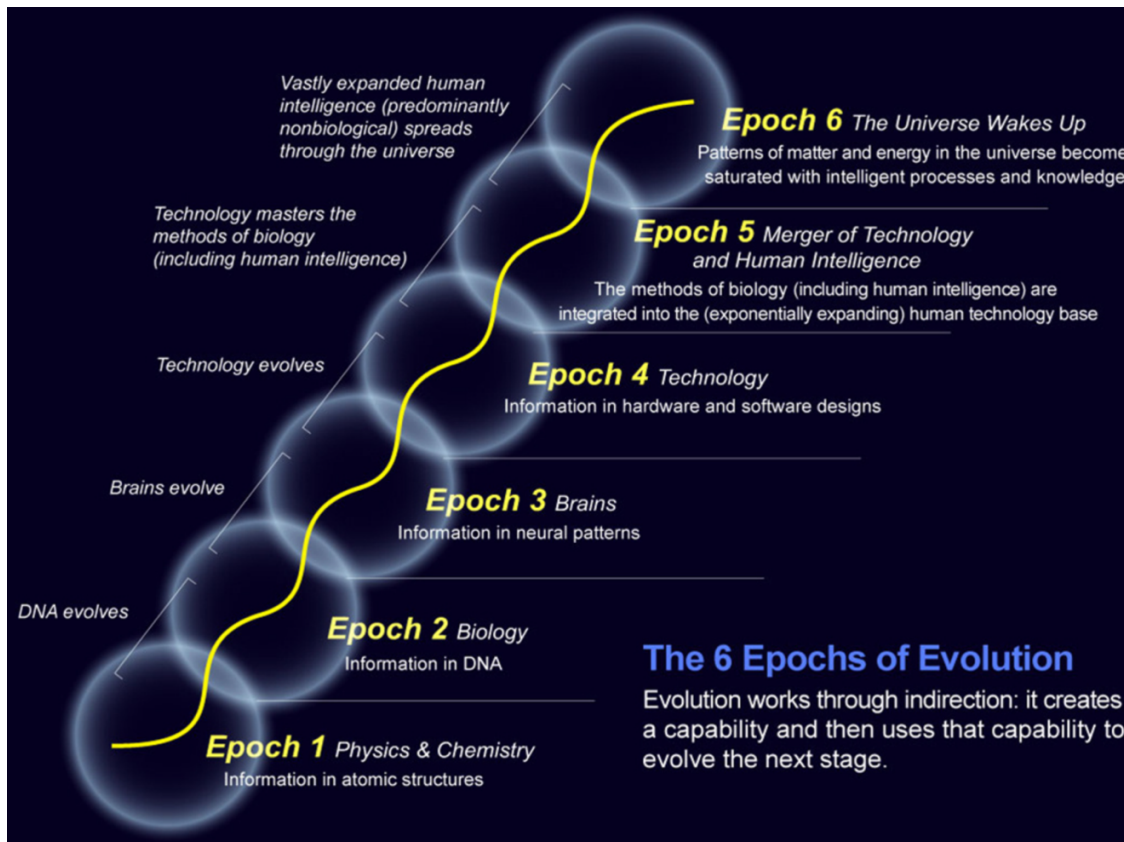
succumbing to habits which waste time and resources, are thoughts shared by both. The Christian frequently brings up the temptations of the flesh and body and the ultimate conclusion that no matter how hard a human might try, he will still fall short of the divine, Kurzweil also stresses that this first version of the human also falls short of what is possible.

Our version 1.0 biological bodies are likewise frail and subject to a myriad of failure modes, not to mention the cumbersome maintenance rituals they require. While human intelligence is sometimes capable of soaring in its creativity and expressiveness, much human thought is derivative, petty, and circumscribed.<sup>46</sup>

Although a single uniting teleology does not exist for the transhumanists, Ray Kurzweil has a graphic example which traces the beginning of the universe, to current humankind and to the future. He defines six distinct time periods which he refers to as “epochs” as taking place in the story of humankind, shown as a graphic summation and to which I expand on below.

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<sup>46</sup> Ibid, 17.



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In **Epoch 1, Physics and Chemistry**, Kurzweil explains that in the beginning, after the Big Bang, atomic structures began to stabilize, creating the structures we are familiar with today, electrons, nuclei, the neutrons and protons contained within, etc. Fast-forward a couple million years, and elements began to form, the most useful being carbon, which gave rise to more complex forms of life.

The rules of our universe and the balance of the physical constants that govern the interaction of basic forces are so exquisitely, delicately, and exactly appropriate for the codification and evolution of information (resulting in increasing complexity) that one wonders how such an extraordinarily unlikely situation came about. Where some see a divine hand, others see our own hands—namely, the anthropic principle, which holds that only in a universe that allowed our own evolution would we be here to ask such questions. Recent theories of physics concerning multiple universes speculate that new universes are created on a regular basis, each with its own unique rules, but that most of these either die out quickly or else continue without the evolution of any interesting patterns

<sup>47</sup> Ibid, 23.

(such as Earth-based biology has created) because their rules do not support the evolution of increasingly complex forms.<sup>48</sup>

Continuing with **Epoch 2, Biology and DNA**, Kurzweil states that as time passed, these carbon-based compounds, mentioned in Epoch 1, became increasingly complex which allowed for more versatile actions resulting in self-replicating mechanisms, which gave rise to life.

Ultimately, biological systems evolved a precise digital mechanism (DNA) to store information describing a larger society of molecules. This molecule and its supporting machinery of codons and ribosomes enabled a record to be kept of the evolutionary experiments of this second epoch.<sup>49</sup>

**Epoch Three: Brains.** Each epoch continues the evolution of information through a paradigm shift to a further level of “indirection.” (That is, evolution uses the results of one epoch to create the next)<sup>50</sup>.

In this third Epoch, the organisms existing during this time had sensory apparatuses which guided their evolutionary process. It was within this epoch that early animals were able to recognize patterns. Ultimately, humans were able to process more complex patterns and create models both representational and abstract that allowed for the manipulation of the environment.

The third epoch started with the ability of early animals to recognize patterns, which still accounts for the vast majority of the activity in our brains. Ultimately, our own species evolved the ability to create abstract mental models of the world we experience and to contemplate the rational implications of these models. We have the ability to redesign the world in our own minds and to put these ideas into action.<sup>51</sup>

**Epoch 4, Technology**, represents a time when humans started to combine the abilities of pattern recognition, abstract thought, with the natural physical endowment, the opposable thumb, to start creating simple machines, which of course, evolved to more complex technologies.

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<sup>48</sup> Ibid, 22-23.

<sup>49</sup> Ibid,23

<sup>50</sup> Ibid.

<sup>51</sup> Ibid.

This started out with simple mechanisms and developed into elaborate automata (automated mechanical machines). Ultimately, with sophisticated computational and communication devices, technology was itself capable of sensing, storing, and evaluating elaborate patterns of information. <sup>52</sup>

Kurzweil, in this section of describing Epoch 4, reiterates the fact that the rate of progress within each Epoch, grows exponentially, stating:

To compare the rate of progress of the biological evolution of intelligence to that of technological evolution, consider that the most advanced mammals have added about one cubic inch of brain matter every hundred thousand years, whereas we are roughly doubling the computational capacity of computers every year (see the next chapter). Of course, neither brain size nor computer capacity is the sole determinant of intelligence, but they do represent enabling factors. <sup>53</sup>

This is important because for the transhumanist movement, the exponential growth pattern is used as a decidedly important point of reference and as further validation of the “realness” of this bold future which awaits. Kurzweil provides graphs within this epoch to show anthropocentric logarithmic and linear growth of technology, paradigm shifts, and milestones.

#### **In Epoch 5, The Merger of Human Technology with Human**

**Intelligence**, is the crux of the major paradigm shift in human beingness. It is in this Epoch where human beings are transformed by intentionally merging with the intelligent machines that have been produced. This is the time when the “Singularity” occurs. According to transhumanist it is a necessity because it ensures human survival, never mind the evolutionary process or paradigm shift.

Looking ahead several decades, the Singularity will begin with the fifth epoch. It will result from the merger of the vast knowledge embedded in our own brains with the vastly greater capacity, speed, and knowledge-sharing ability of our technology. The fifth epoch will enable our human-machine civilization to transcend the human brain’s limitations of a mere hundred trillion extremely slow connections. <sup>54</sup>

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<sup>52</sup> Ibid,24.

<sup>53</sup> Ibid.

<sup>54</sup> Ibid,28.

Yet, far be it from being a naïve optimist, Kurzweil acknowledges the possibility of evil that could arise from these developments.

The Singularity will allow us to overcome age-old human problems and vastly amplify human creativity. We will preserve and enhance the intelligence that evolution has bestowed on us while overcoming the profound limitations of biological evolution. But the Singularity will also amplify the ability to act on our destructive inclinations, so its full story has not yet been written.<sup>55</sup>

In **Epoch Six, The Universe Wakes Up**, Kurzweil states that after the dramatic paradigm shift of the Singularity, intelligence will begin to develop in all parts of matter and energy. The catalyst for this will stem from human origins and through the transhuman and posthuman. After seeding the universe with intelligence, it will be as if the universe becomes aware and a superorganism.

In the aftermath of the Singularity, intelligence, derived from its biological origins in human brains and its technological origins in human ingenuity, will begin to saturate the matter and energy in its midst. It will achieve this by reorganizing matter and energy to provide an optimal level of computation (based on limits we will discuss in chapter 3) to spread out from its origin on Earth...Whether our civilization infuses the rest of the universe with its creativity and intelligence quickly or slowly depends on its immutability. In any event the “dumb” matter and mechanisms of the universe will be transformed into exquisitely sublime forms of intelligence, which will constitute the sixth epoch in the evolution of patterns of information. This is the ultimate destiny of the Singularity and of the universe.<sup>56</sup>

A characteristic of Transhumanist thought parallels this idea in the sense that stripping away the limitations of the current biological substrate would free humans to explore their world and universe. Along with this is an explicit desire to acquire, process, and use knowledge in a more efficient manner, not merely exploration in the physical sense of travel. However, the major difference is that the transhumanist takes control of their destiny by altering the physical qualities of the human being. Perhaps the alteration is so significant that it might be hard to find the lineage between the “old” human structure and the posthuman. The point remains that for both Christian and

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<sup>55</sup> Ibid.

<sup>56</sup> Ibid,29.



transhumanist, the limitations of the body are recognized and the hope for something better exists in both worldviews. The path which leads to the transcendence differs, but the end is very similar.

## **DISCUSSION OF THE AUDIOVISUAL COMPOSITION** **Queue R Structure and Narrative**

As mentioned previously, *Queue R* is Tripartite in structure, containing a beginning, middle and end.

### **BEGINNING**

- I. The Beginning, The Spirit of God
- II. Humankind

### **MIDDLE**

- III. Transhuman

### **END**

- IV. Post-human
- V. Return to the present

### **BEGINNING**

The piece slowly introduces God, a spirit, hovering over the void. This picture gives no indication of length. However, the visual and aural movement is very static and slow. This serves the purpose of intentional subversion of anthropocentrism. Additionally, the piece is structured to parallel the short amount of time humans have been present in the universe.

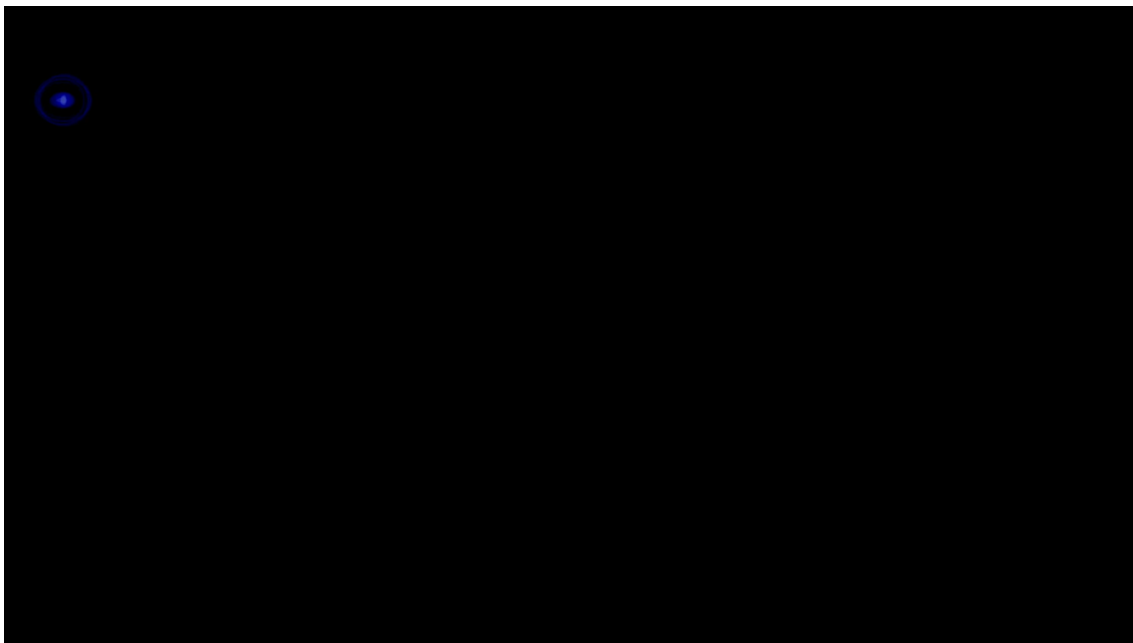


Fig. 1

Viewed from this manner, it appears that humans, transhumans and posthumans occur simultaneously.

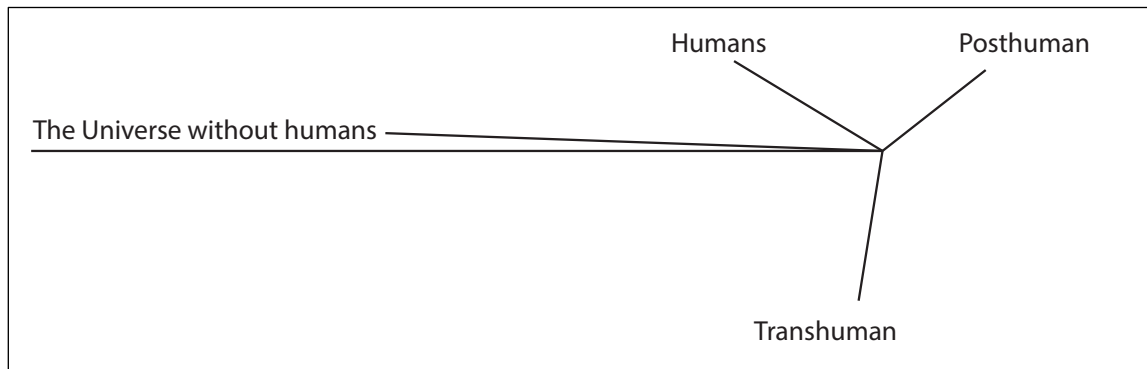


Fig. 2

Then, as the piece continues, God initiates or begins creation with the “Big Bang (Fig. 3).” The aural portion of the piece is very obvious that there is a great amount of energy being expended. The visual portion runs in parallel to the audio as the figures move rapidly, chaotically, randomly. In the center, one will notice the spirit of God fading in and out while the great burst of creative energy expands and dissipates. This section ends with a “coda” of God that is apparent when viewed because of the audio and animation. However, on this paper, the screenshot appears almost black, although there is a moving set of ellipses (God) on the lower right quadrant of the screen (Fig. 8).

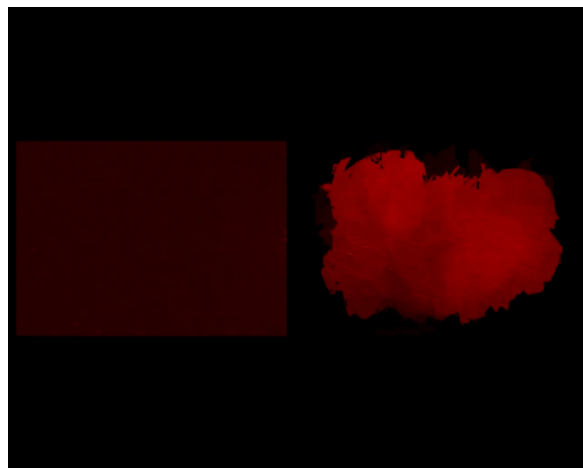


Fig. 3

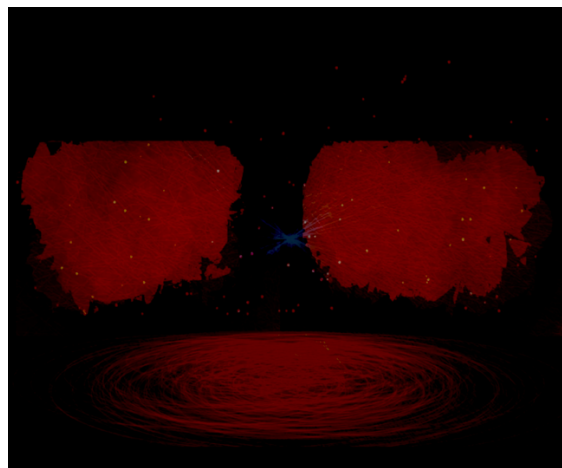


Fig. 4

Figures 3 and 4 depict the “Big Bang” explosion While the initial explosion fades, heavenly bodies slowly fade into and out of existence.



Fig. 5

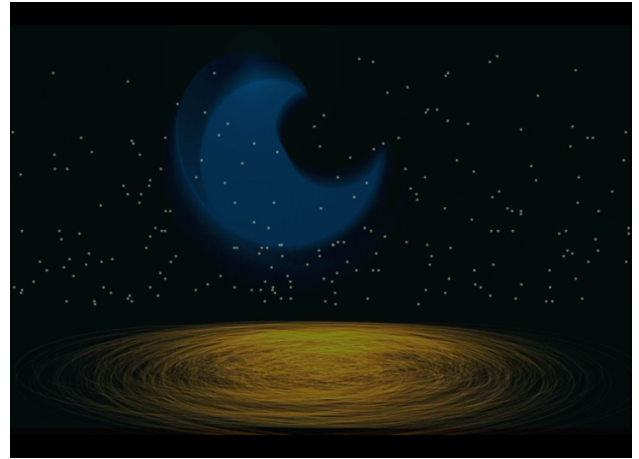


Fig 6

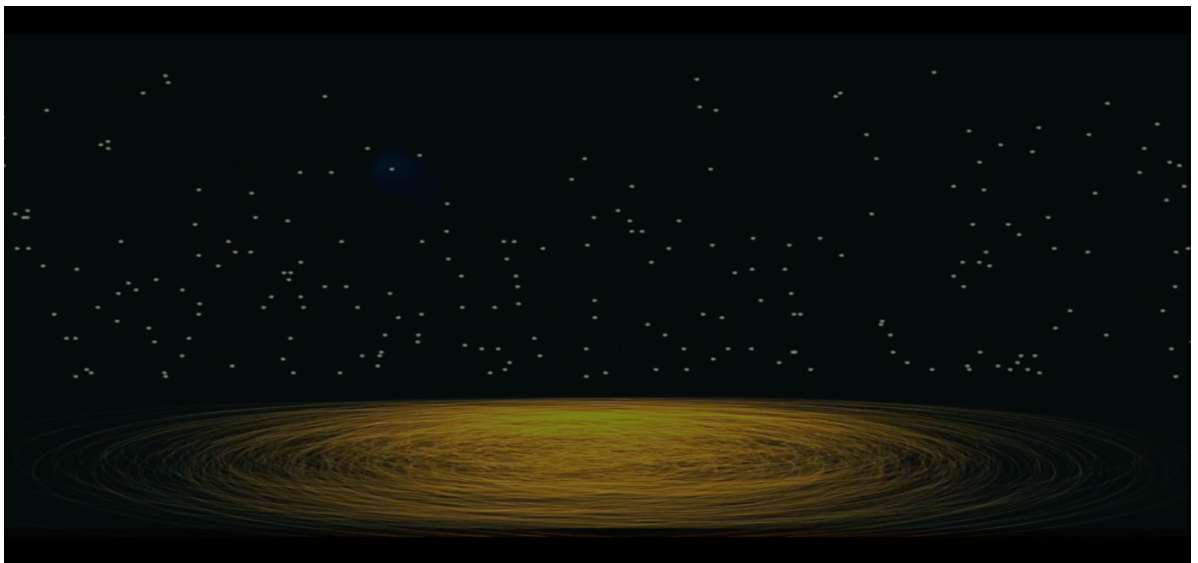


Fig. 7

Notice Fig. 5 still contains remnants of the explosion (in a faded red color). In Fig. 6, one can see that the explosion has faded from existence.

Lastly, Fig. 7 shows that the moon has disappeared and leaves the viewer with a series of a moving golden ethereal mass. The interpretation of the ethereal mass is left to the viewer but should nonetheless suggest something magical and perhaps undefinable.

Fig. 7 is the last image before transitioning to the next subsection of the creation of the Earth. Although the screenshot appears almost black, it actually contains in the lower right quadrant

the moving image of God, which is small to indicate distance. The audio that occurs after this image is clearly indicating a different section.

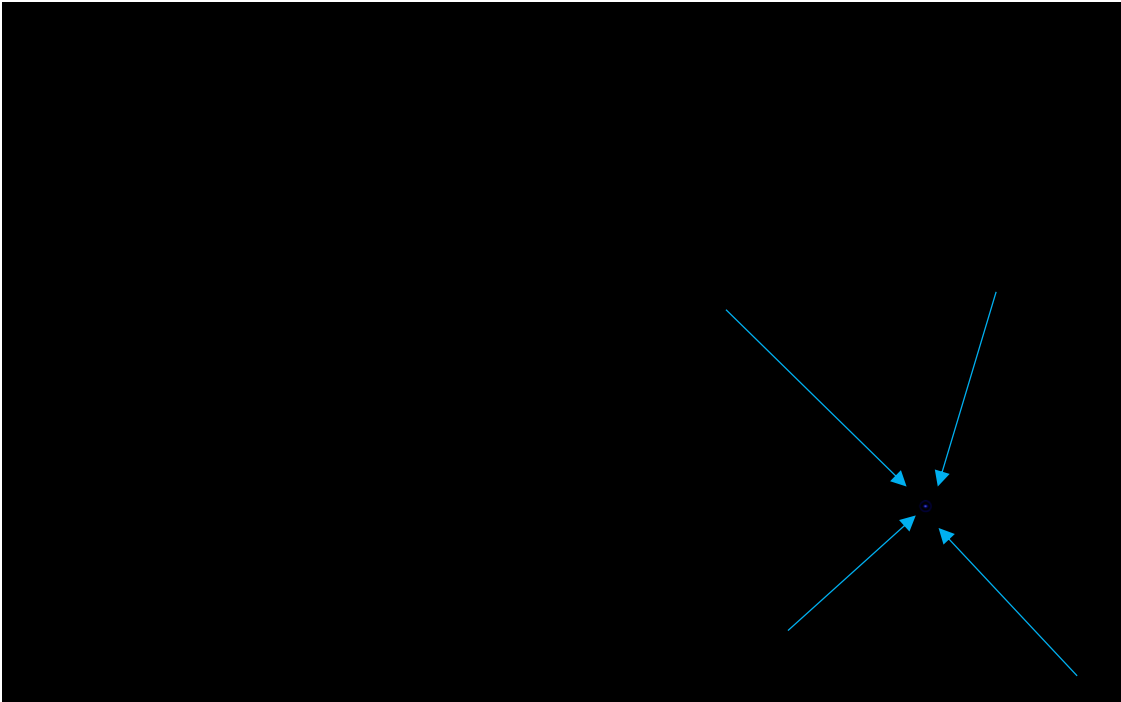


Fig. 8

These next series of screenshots take the viewer through the creation of Earth and the passage of time. This is done by using layering, variation, and repetition of audio and visual elements.



Fig. 9



Fig. 10

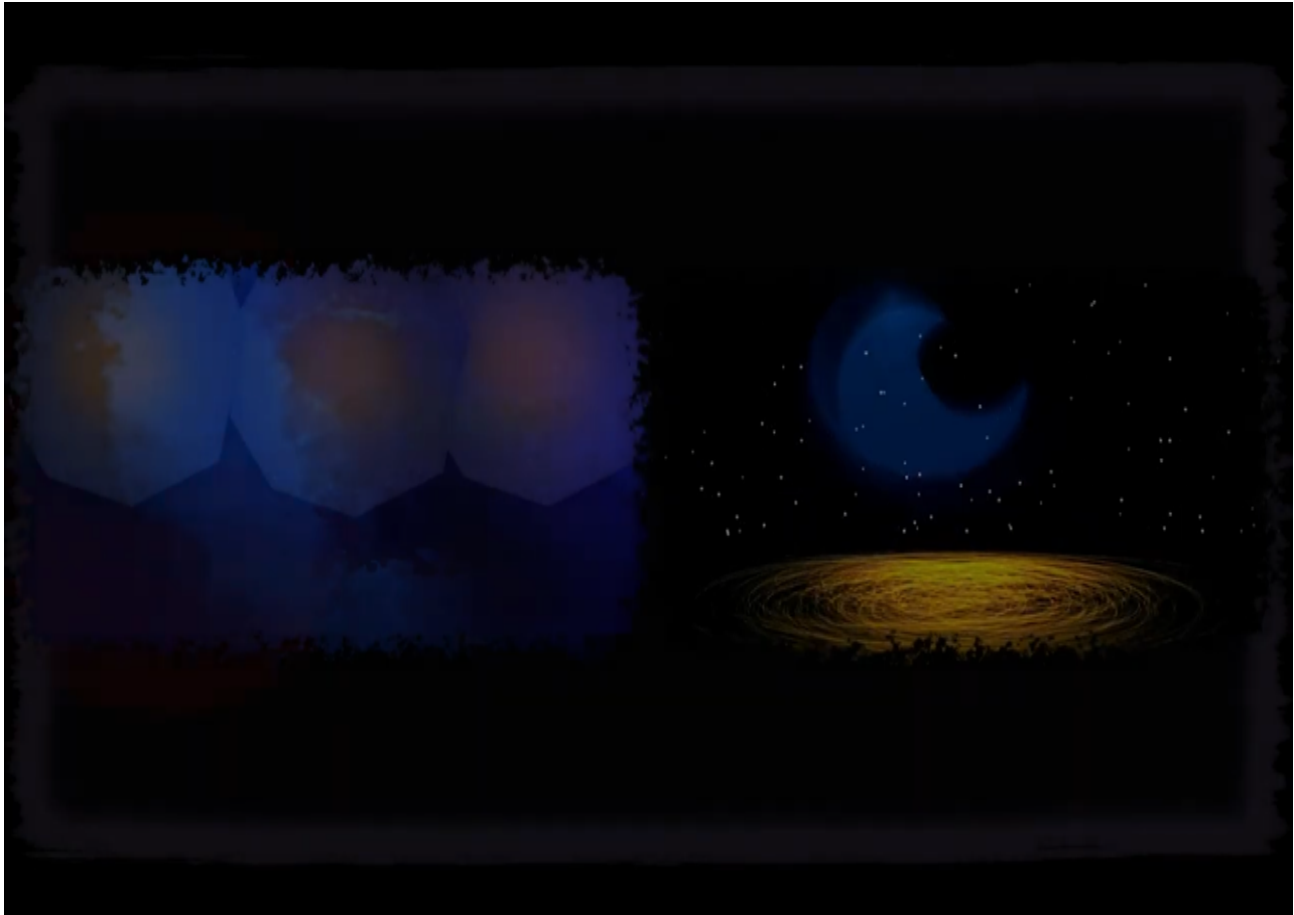


Fig. 11

In Fig. 11, the screen is framed within a beveled structure. The birds flying in the sky with and against a backdrop of a horizontally moving series of circles meant to represent heavenly bodies (stars, sun, planets) in motion. The mystical and ethereal elements seen prior in the piece also fade in and out. Overall, this section is meant to capture the beauty and speed of life, evolution, and the portion of Genesis in which God has created the earth, animals, etc. It should be noted that the composition in no way is meant to give an exact detailing of the book of Genesis, but merely to suggest and reference the Judeo-Christian creation story.



Fig. 12

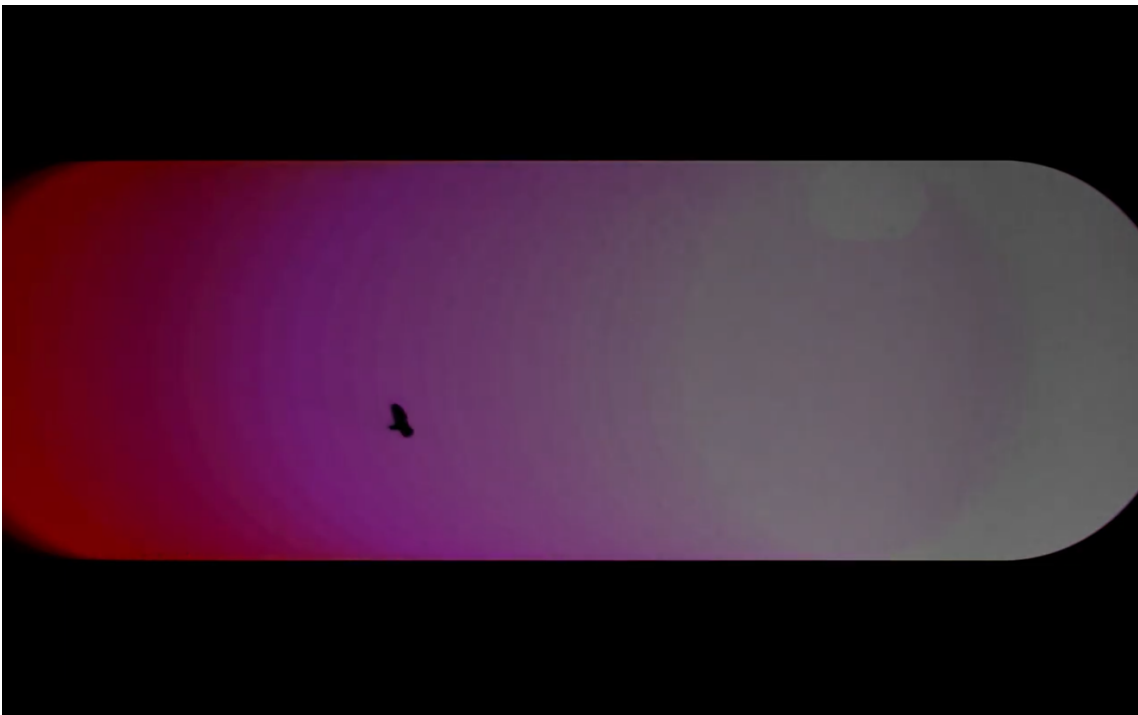


Fig. 13



Fig. 14

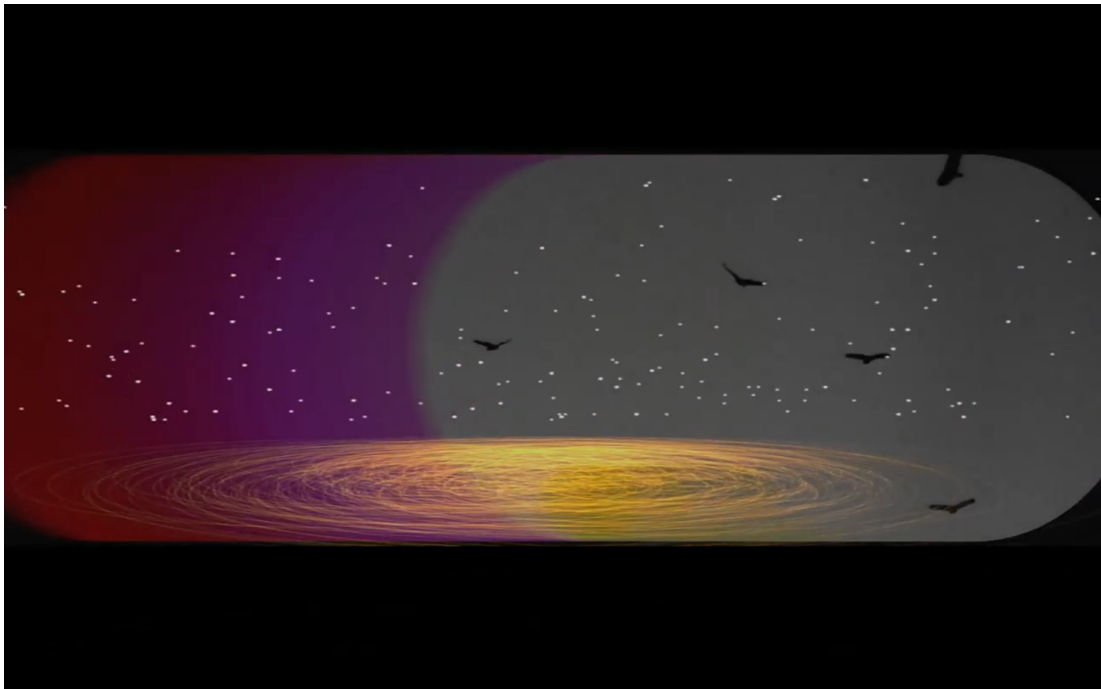


Fig. 15

Still in the “Beginning” section of the composition, the series of black and white images (Figures 16-19) are very abstract in nature but are meant to suggest the spirit of man

upon the universe. The audio indicates a gestational state of humans, this “spirit” by playing very rhythmic and semi-tribal gestures or approximating the idea of tribal music. The lifestyle is such that it pre-dates most creature comforts and amenities of the industrial revolution, machines, mechanization, and modernism. Living a subsistence lifestyle in a predominantly hunter-gatherer society, similar to early humans thousands of years ago, all comes to mind when thinking of “tribal.”

There is a clear indication both sonically and visually of a new section. The contrast between this binary color construction versus the multi-colored visual images that have come before is very apparent. Here, within the composition underscoring is highest. That is, the audio and visual elements are synced at important points. The texture of the object is revealed in time, as it goes from a solid black object with rounded edges, to slowly introducing white Bezier curves (which are also used later) internally, against the black background. Bezier curves are named after Pierre Bezier, a French engineer famous for his work with Renault. In a two-dimensional environment, straight lines are very easy functions to execute for a computer. However, curves, twists, bends, etc., require explicit instructions and can become cumbersome to code and increase in mathematical complexity. Think of trying to write out the physics of every specific move made while a person walks across a college campus. The wind speed, weight distribution of each step, various angles that the body takes while moving, etc., would have to be imagined/observed, described and mapped. However, if there was a pre-existing function that simplified all of this by only asking for 4 bits of information, this is akin to a Bezier curve. Bezier curves are lines with anchor and control points, which allow for the alteration of an otherwise straight line. Anchor points remain static, while a control point (or points) is dynamic. By coding a specific path for the control point in which to move, the normally straight line will start to bend, curve, twist, etc., yielding interesting results in movement and end shapes.



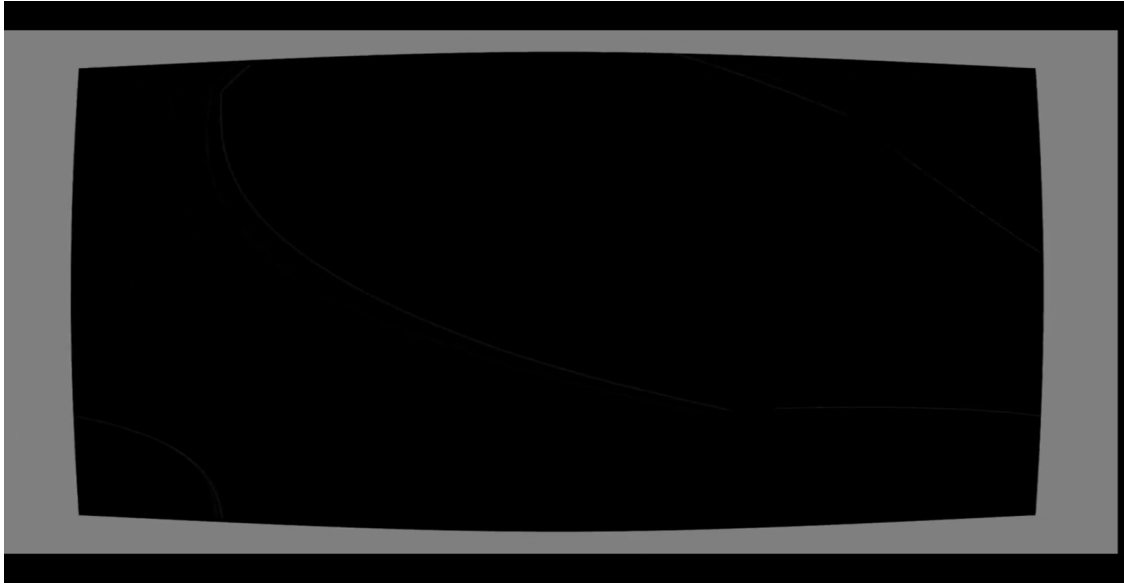


Fig. 16

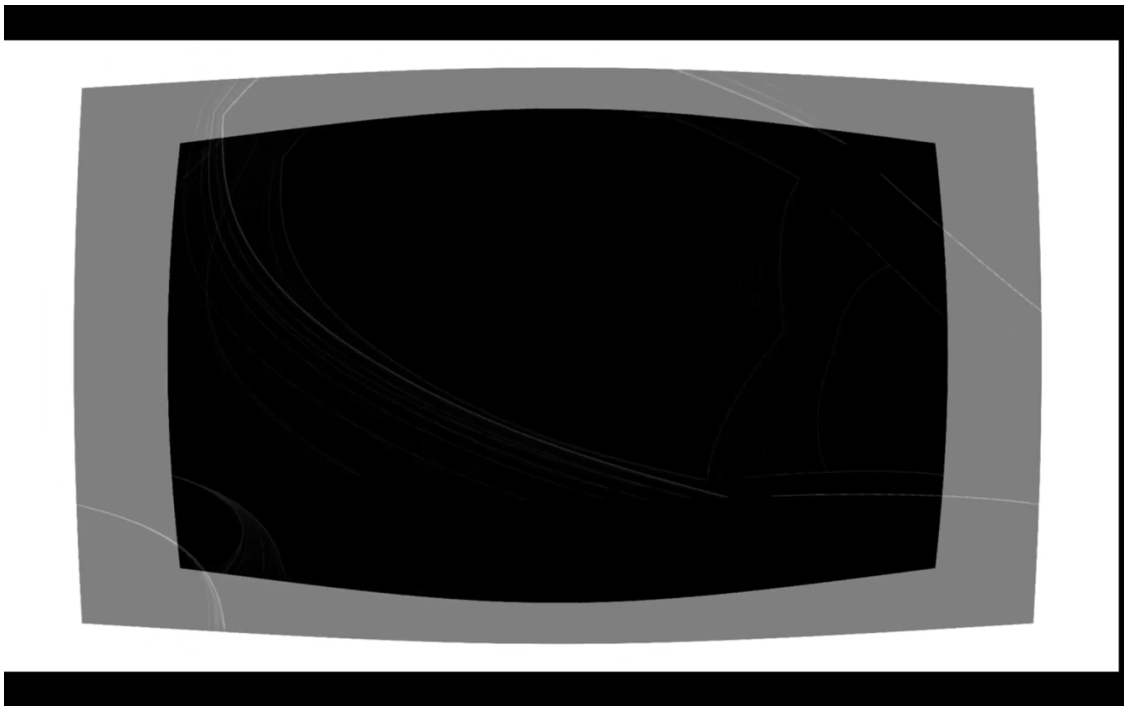


Fig. 17

In these next two images the shape continually morphs as more internal Bezier curves move on the inside of the object.

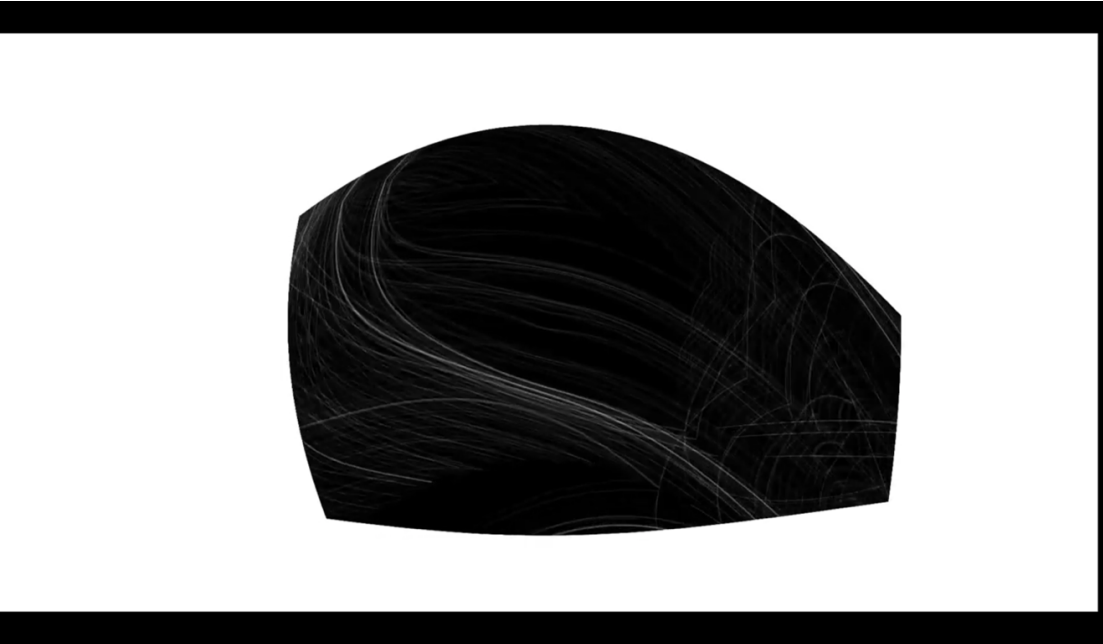


Fig. 18

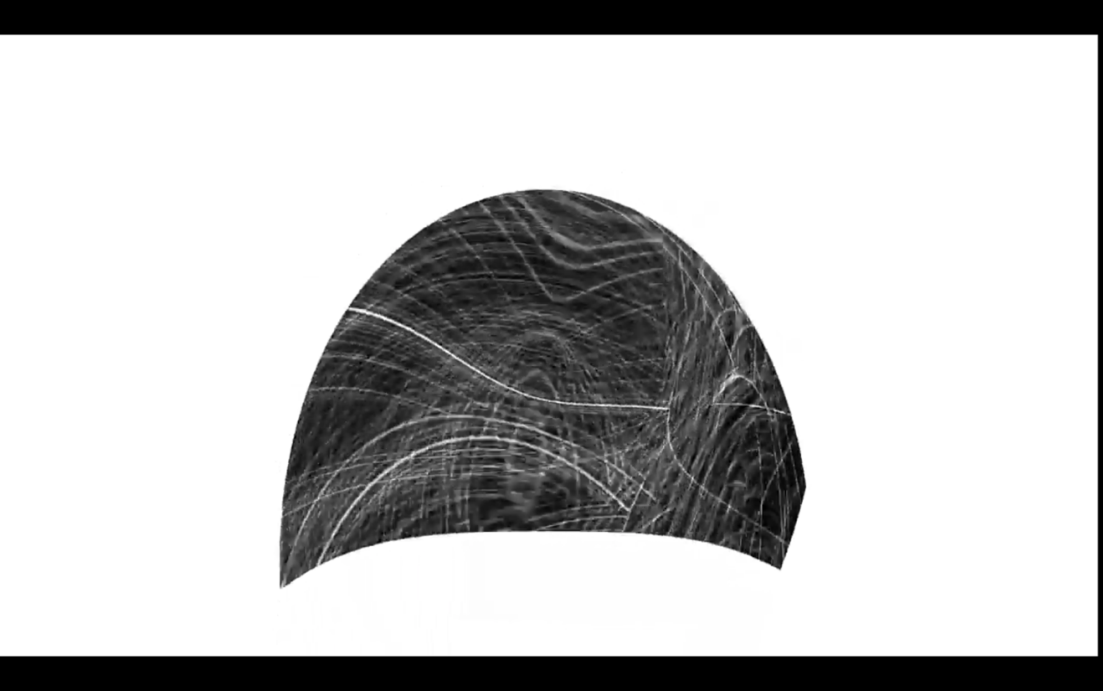


Fig. 19

The piece is still in the “Beginning” section but nearing the end of the “Humankind” subsection. The next series of images introduces humankind and the blood cell which serves as the segue between humankind and the upcoming Transhuman section. The blood cell is meant to indicate

not only the human advancements in science, uncovering the hidden elements of the world, i.e. the microscopic, atomic, etc., but also the sacrosanct symbols of blood. With the introduction of the blood cell, adjacent to a deliberately posed figure of humankind, the inferred relationship is that humans are capable of discovery, but also knowledge building. Although not explicitly in the “Vitruvian Man” pose, the naked male figure it is meant to refer to this Western symbol, which indicates knowledge gained in aesthetics, math, proportion, etc. The naked male figure (fig. 21) is reminiscent of Leonardo DaVinci’s Vitruvian Man, a western symbol for knowledge gained in aesthetics, math, proportion, etc., that has permeated the Western psyche. I acknowledge that today this symbol may have complex connotations related to gender, sexism and sexual identity, but I selected this image because of its instant recognizability and deep cultural associations. Very rarely are these rigid binary constructions true or stand-up to scrutiny.

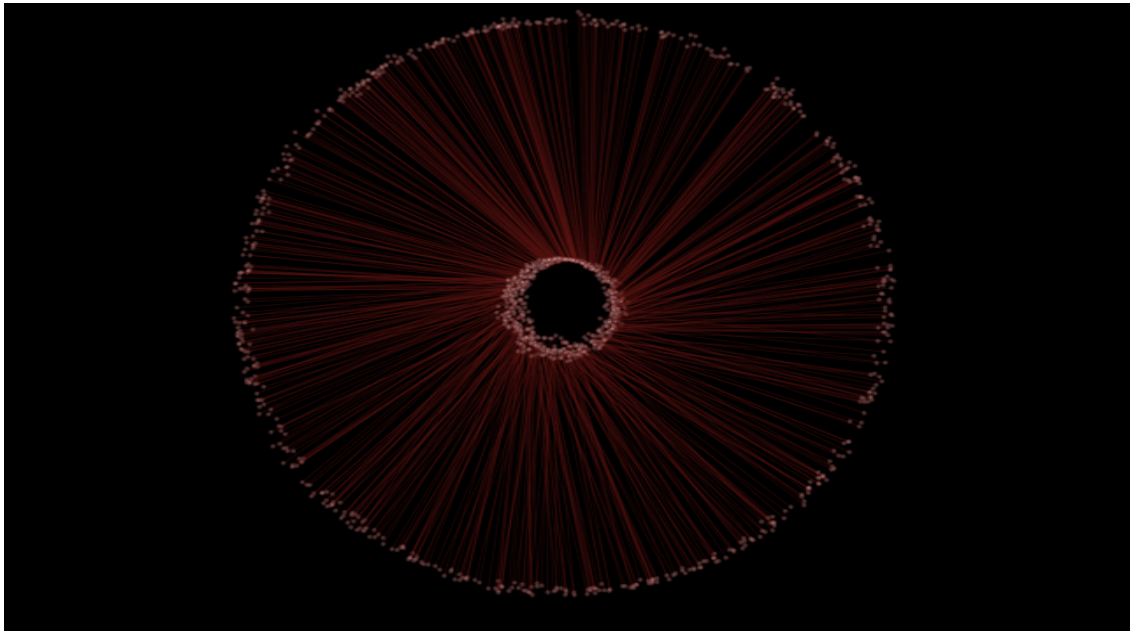


Fig. 20



Fig. 21

In this last series of blood cells, humankind has faded, and the one blood cell becomes three. Not only does it multiply but the texture and shape of each cell changes. There is also a distinct change in audio which indicates that the cells are within a vast space. Through the use of a far-away sounding, low-rumble frequency, similar to the rumbling of a thunderstorm, the sound replicates a celestial phenomenon which humans are familiar with, one that uses and effects a vast amount of space.

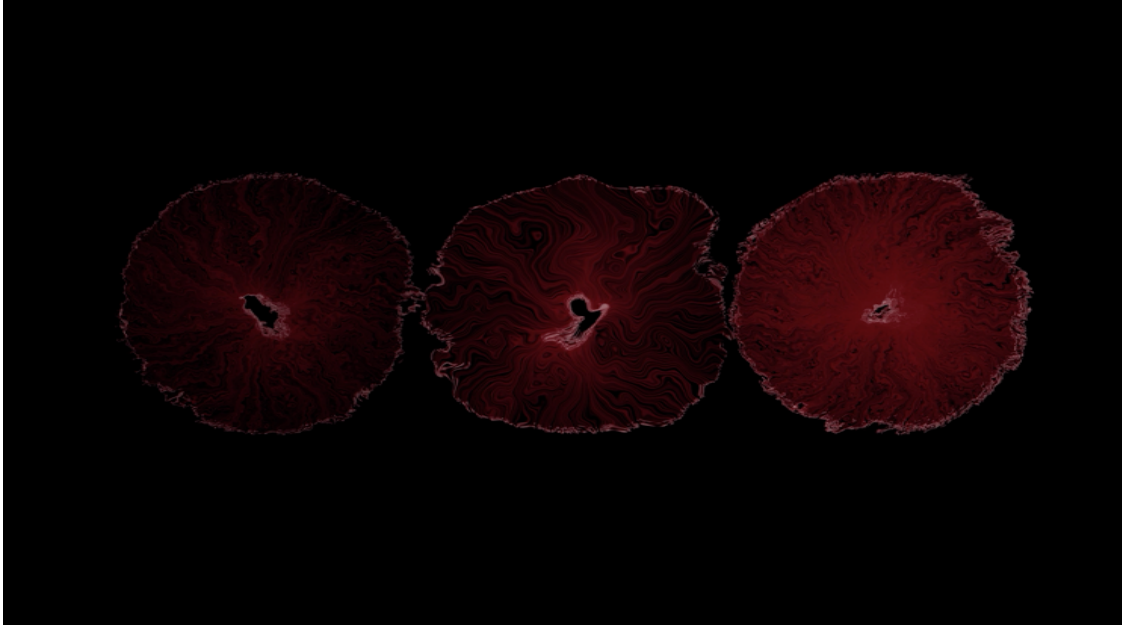


Fig. 22

As the blood cells rotate and spin, the piece now enters familiar territory and the second half of the humankind section, taking the viewer into a 19<sup>th</sup> and 20<sup>th</sup> century sonic world. Because the composition is modeling the speed and time at which humankind is involved in the universe, there is a mass of sound occurring. All of the sounds include a variety of technological sounds, races of human, various languages, popular and cultural artifacts of Western Civilization, tribal music (music from, fish markets, field recordings of Bakya

Pygmies, etc.) Figs. 24-26 serve as the end to the “Humankind” section.

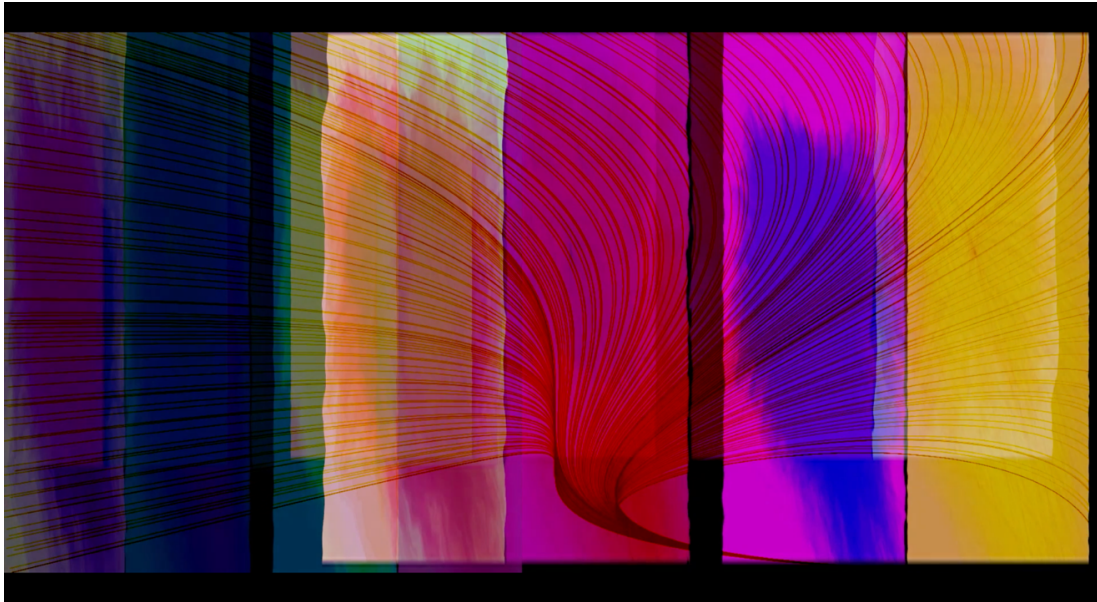


Fig. 23

Notice the Bezier curve used. This is the same curve used in the beginning of the Humankind section where the spirit of man is introduced. The contrast between the binary color palette used previously contrasts in an obvious way with the backdrop of layers and colors of the second half of the humankind section. The colors symbolize the multifaceted nature of the human world, and also represent the abundance and accessibility of data in this age of information.

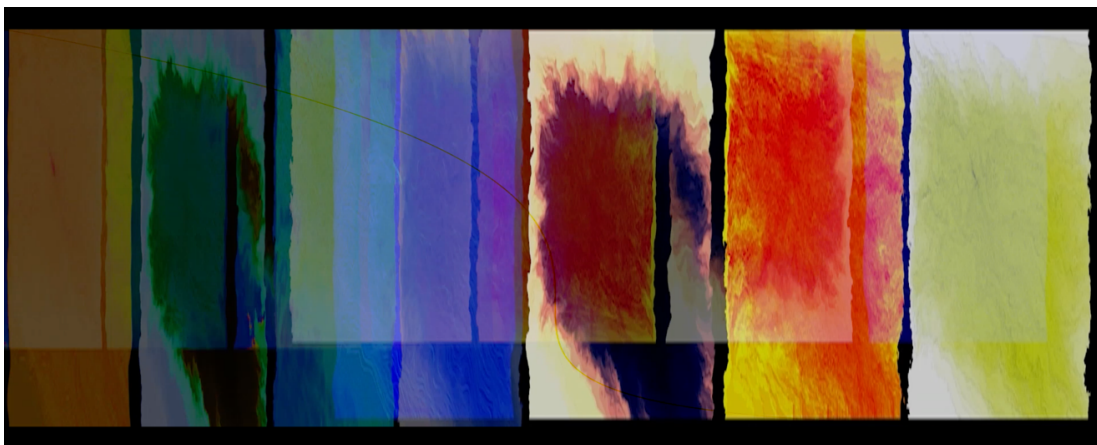


Fig. 24



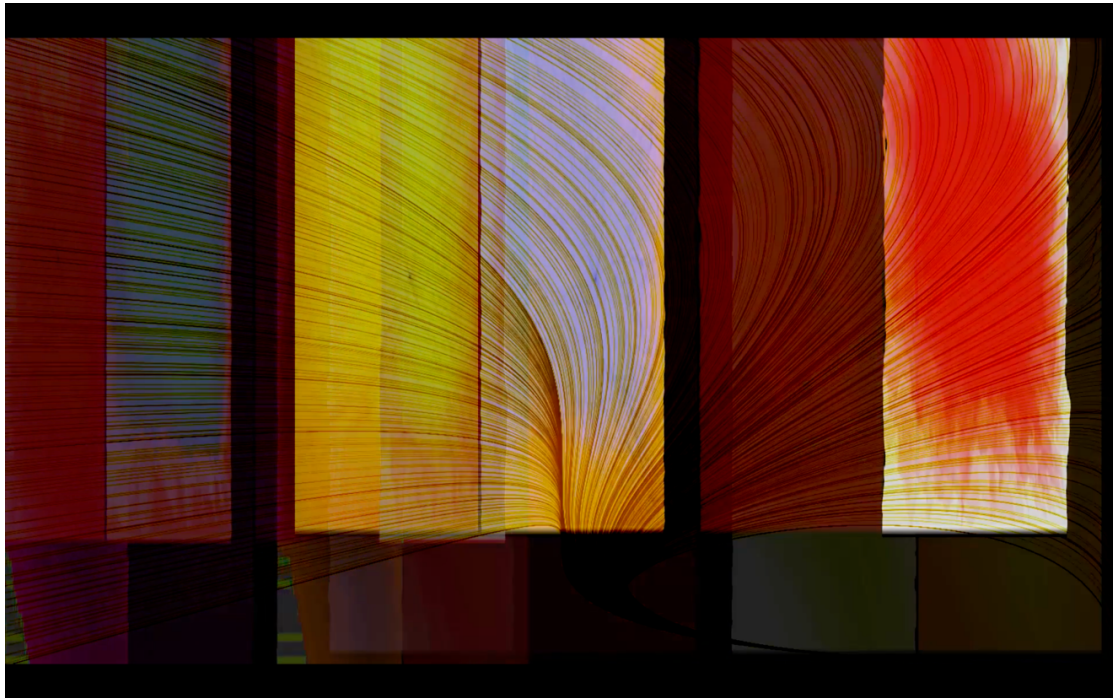


Fig. 25

### MIDDLE Transhuman

The composition now moves at a quicker pace, but without much of a climactic gesture in audio or video. Because technological progress has appeared seamless and generally accepted without much ado, the transhuman period happens in much the same way...without flare or pomp and circumstance. Everyone is a participant; the transition has been normalized. The significance of the situation is not entirely grasped. The merging of the biological substrate with the machine, the robotic, is occurring. Knowledge abounds, information is readily accessible, and what sounds like a cacophony of sound for the current human being is perhaps for the transhuman a well-ordered and clear dissemination of information. The viewer encounters images that are multi-layered and textural, which normally calls for some underscoring. However, the rich images illicit no significant change in sound which serves to further emphasize the mundanity of the situation.

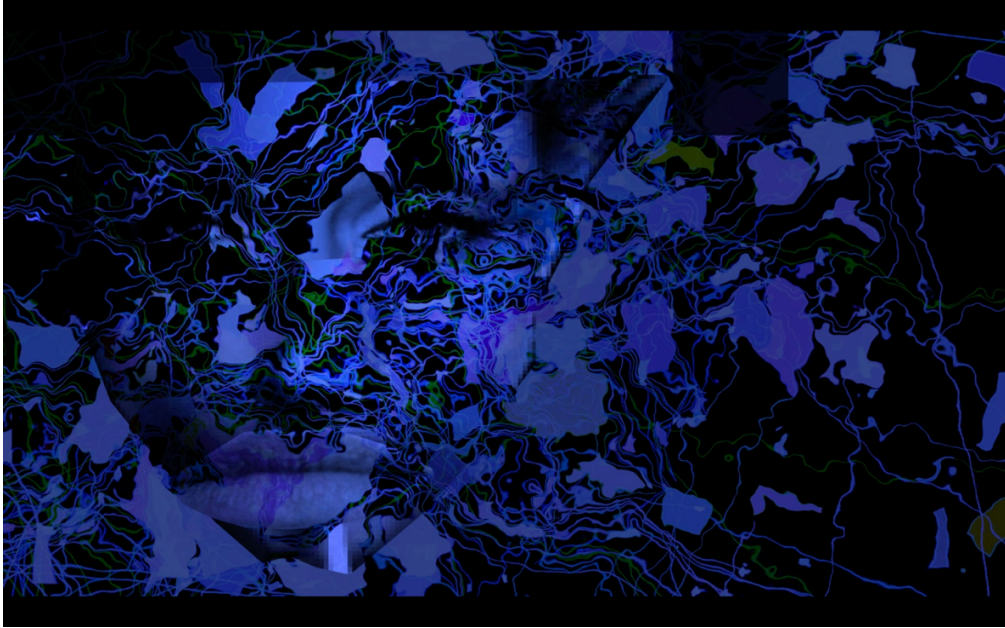


Fig. 26 Android, Cyborgs, Robotic, a new teleology, Fabrication, Amalgamation, Augmentations

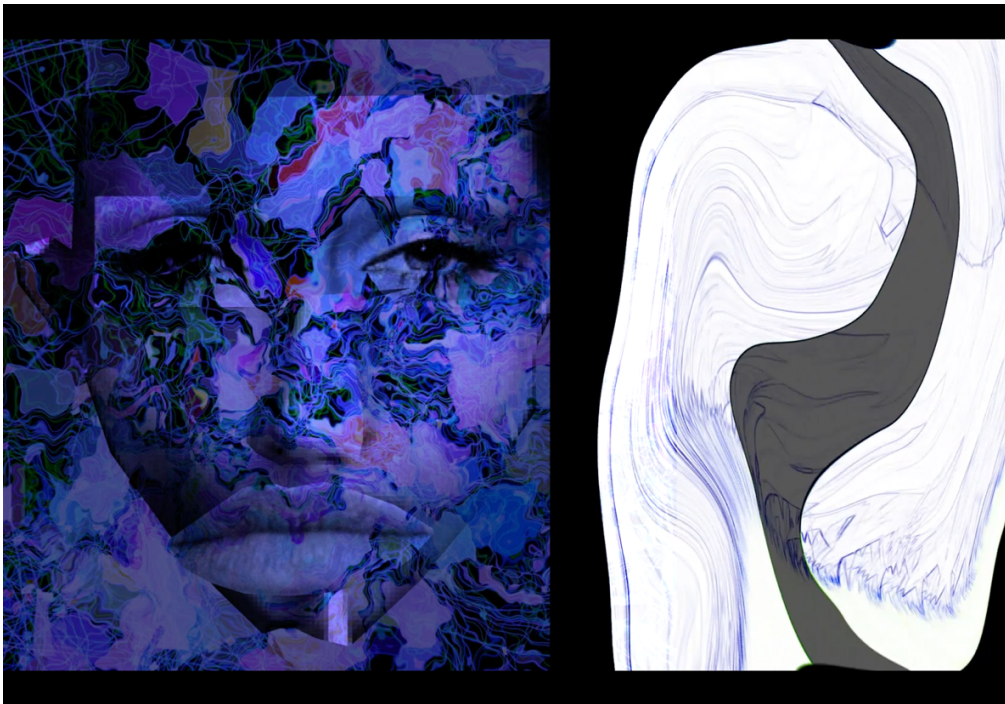


Fig. 27 Patterns, duplication, cloning, stars, tribalism and the mass of audio.





Fig. 28  
Culmination of knowledge, the mass of accessible history and human knowledge, represented sonically and visually.

END  
Posthuman

At this point in the composition, Fig. 29, the human can no longer understand the trans/post human. Analogies vary, but one often used analogy is between the ant and human. Humans have knowledge of the world, the universe, science, philosophy, cars, streets, churches, etc. Ants do not have any of this knowledge. They do not know about science, DNA, the universe, etc. Humans for the most part do not concern themselves with communicating with ants, or care for their welfare on a small scale (i.e. stepping on them, using pesticides to get rid of them, etc.). The same relationship will exist between the transhuman and human, between the human and post-human. The world in which the transhuman and posthuman live will be so different and unrecognizable to the

“natural” human, that this human will be the ant.



Fig. 29 Rapid growth, pure energy, posthuman is beyond current understanding



Fig. 31 Cloning, thought, acceleration of Transhuman technologies, higher facility in manipulating the environment and universe, remnants of the old human still remain.



Fig. 32

### Return to the present

The final section slowly takes the viewer out of this posthuman world and refocuses on the present time. This section serves as a grounding mechanism for reflecting upon the power of the human species, with regard to thought, cooperation and common goals, versus divisive thought, and what is possible through cooperation. Additionally, the section is meant to calm the viewer. The audio is a set of notes played as harmonics on an acoustic guitar. Visually, there is a strobe effect from red and white. The piece is done.



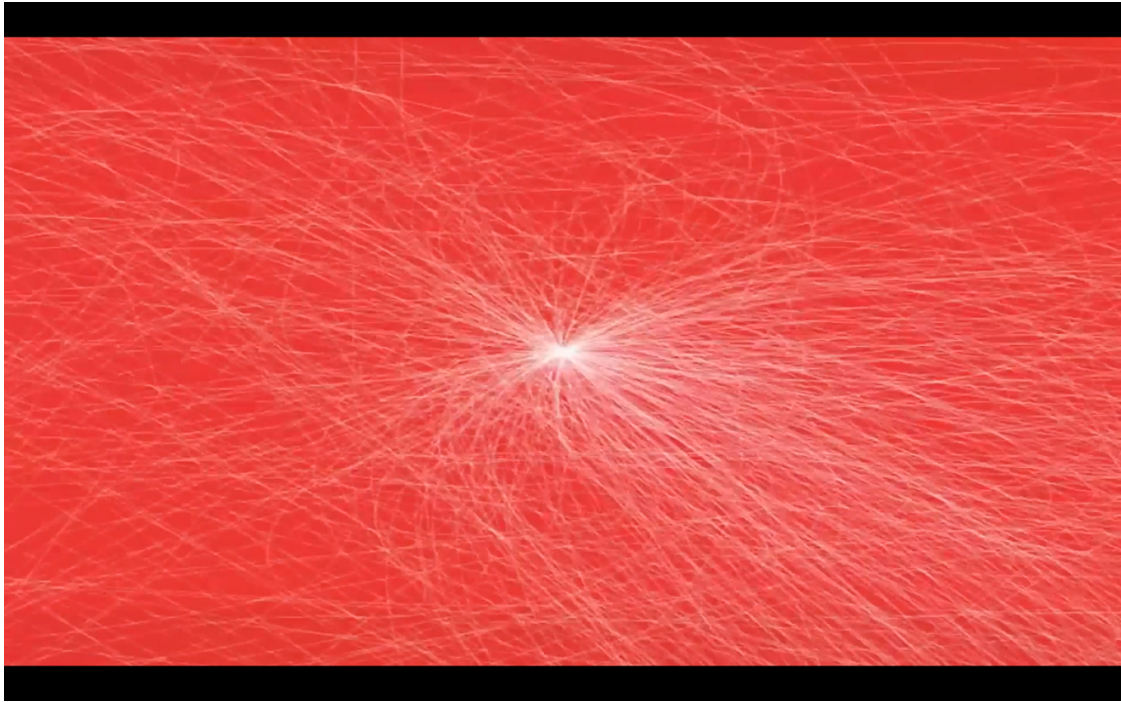


Fig. 33

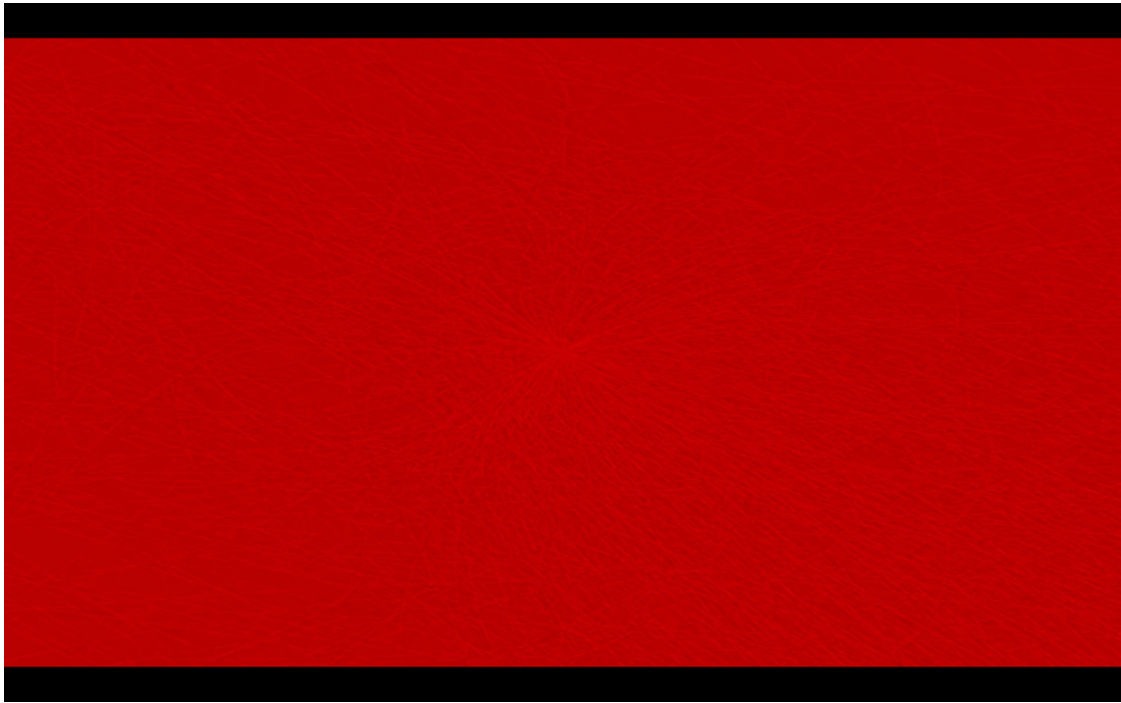


Fig. 34

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APPENDIX A  
BLOOD CELL OVERVIEW

## Blood Cell Overview

Initial sketch, solitary blood cell, in various stages.

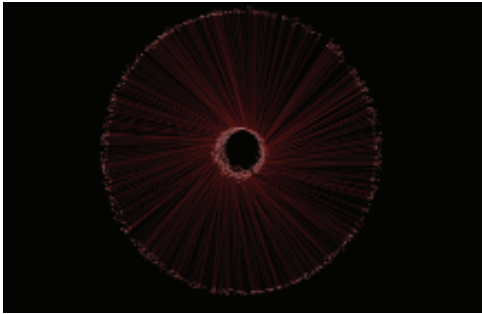


Fig. 35

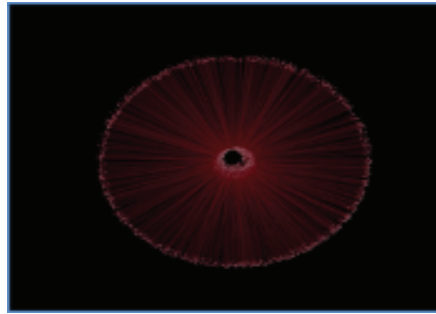


Fig. 36

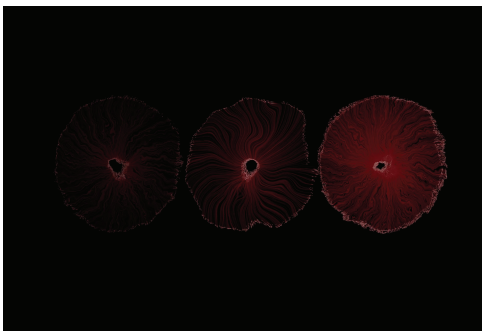


Fig. 37

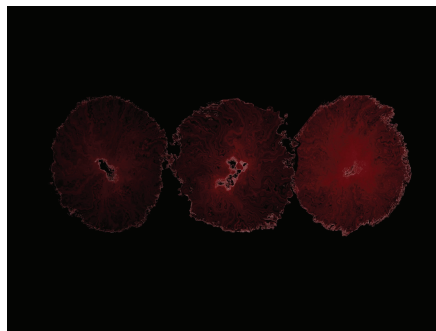


Fig. 38

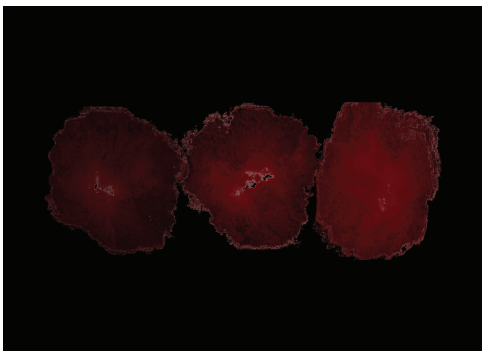


Fig. 39

The blood cell was programmed in Processing 3. First, the shape (blood cell) was constructed. The shape is revealed through animation. By revealing several lines in a rapid manner, the blood cell moves from a thin ambiguous shape to one that is thick in texture. (see code for method of construction)

Notice that smaller representations of the ellipse are used thematically both as a contrast in color but also in size. In other words, the overall red shape is circular and elliptical in shape. There is a center hollow portion that is circular in shape and the extending lines (radii) each has elliptical ends which are outlined in white. Lastly, the blood cell is morphed, varied, rotated, multiplied, given a series of different visual textures, from a very organized and intentional shape to a more organic appearing shape. The texture changes from a very sharp, angular, appearance to a smooth, shiny, wet, blood cell.



APPENDIX B

BLOOD CELL CODE

## Blood Cell Code

Filename: CENTER\_blood\_cells\_1\_copy

Code begins here:

```
//This section declares variable type, and sets the initial value of the
//variables
float x=0.0;
float y=50.0;
float angle=0.0;
float speed =.5;
int direction=1;

void setup() {
  size(displayWidth, displayHeight);
  background(0);
  stroke(100,20,20,130);
  smooth();
  frameRate(60);
}

//This section uses the global variables listed in the beginning to create
//animation. The variable of the x and y coordinates are changed through
//the following lines of code:

void draw() {
  angle +=randomGaussian();
  x+=cos(angle)*speed*direction;
  y+=sin(angle)*speed*direction;
  translate (x+displayWidth/2, y+displayHeight/2.45);
  rotate(angle);

  /*This section is important because the beginShape() and endShape()
  encapsulates the code that makes sure that the shape that is constructed is
  of two very small grey ellipses separated or joined together by a single red
  rod or line:*/

  beginShape();
  line(x, y, 100, 350);
  fill(255, 50);
  ellipse(x, y, 5, 5);
  ellipse(100, 350, 5, 5);
  endShape();
  //saveFrame("blood-cell-center2/Gaussian_blood_cells-####.png");
}
```

APPENDIX C

ANDROID WOMAN

## Android Woman

The purpose of the android woman is to suggest the distortion that may occur from good intentions. A quote used from Fukuyama earlier in this paper mentioned the unforeseen negative repercussions from altering features of the human being. The Android Woman represents a possible outcome from combining the perceived beautiful parts of different objects. All humans are objects, that is, material things that can be sensed in the everyday world. This next set of constructions is to simply take parts that are out of angle and proportion to one another in various ways, such as angle, size, ratio, etc. This will always create the desired effect of distortion of what is real.

Fig's. 40-43. Examples of some of the steps taken to create the Android Woman:



Fig. 40 photo by Mert Alas & Marcus Piggott



Fig. 41 Photo by Annie Leibovitz, March 2016

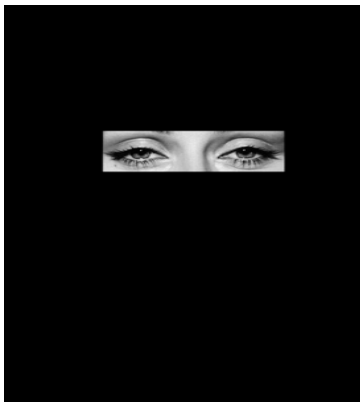


Fig. 42

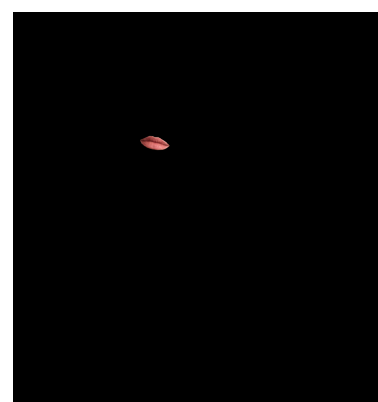


Fig. 43