Spring 5-1-2017

Virtual Futures: Transfiguring Borders and Transcending Boundaries

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VIRTUAL FUTURES: TRANSFIGURING BORDERS
AND TRANSCENDING BOUNDARIES

By

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Submitted to the Faculty of the Graduate College of
Arkansas Tech University
in partial fulfillment of the requirements
for the degree of
MASTER OF LIBERAL ARTS IN COMMUNICATIONS
May 2017

Permission

Title: Virtual Futures: Transfiguring Borders and Transcending Boundaries

Program: Communications

Degree: Master of Liberal Arts

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Abstract

This project argues that mind uploading and virtual reality are the most likely solutions to the human-driven climate change that will render the Earth unlivable. Drawing on scientific research, the speculations of science fiction, and critical theory, this project first argues that this solution is most probable because it exploits current capitalist trends and does not demand the sacrifice of luxury; concomitantly, it functions as a solution to problems outside of climate change and human survival regarding human health, progress, evolution and [interstellar] exploration.

This project further explores: 1) what problems mind uploading could solve and to what extent; 2) how the dissolving distinction between human and machine will affect human identity individually and collectively; 3) how it will affect the way humans interact with one another as well as the natural world and universe; 4) what kinds of economic, political, and social systems would emerge in a virtual environment largely relieved of the necessity of material production; and finally, 5) the ethics of this solution.

While this project is speculative in nature, its aim is to explore human identity in relation to technology and technology in relation to nature, to interrogate the pervasive critical conception of technology as corrosive to human nature and to "the natural," to question the very idea of an essential "human nature," and to critique human practices and current systems of economic, political, and social organization with the goal of approaching possible solutions to manifest problems.

Keywords: mind uploading; virtual reality; climate change; capitalism; science fiction

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I. Introduction

Four years ago, journalist and author Annalee Newitz published her book *Scatter, Adapt, Remember: How to Survive a Mass Extinction*, a compendium of survival strategies for a species threatened by an impending sixth extinction. At the time of writing this, *New Philosopher*, a bestselling magazine which frequently features interviews with leading intellectuals, had entitled its newest issue "The Future of Humanity." The issue tackles topics ranging from the post-human, virtual reality, and artificial intelligence (AI), to the possibility of extinction and questions of *whose* future it is that exists within the discourse of *what* future may manifest; what future humans will *make* manifest and which humans it is that possess and exercise influence over the future. On April 21 of this year, everyone's favorite "science guy," Bill Nye, will premiere a new show, *Bill Nye Saves the World*, the title of which operates on the assumption that the world is indeed in danger and requires saving. *Travelers*, a new Netflix show, features future consciousness sent back in time to inhabit the bodies of humans living in the present with the aim of saving humankind from its bleak future; thus, it posits that the twenty-first century is one on which the future of humanity hinges.

Preoccupation with the future is obviously not a new phenomenon: many religious master-narratives demonstrate humanity's anxiety about the end of times, which they then propose a solution to via salvation through an overarching, omniscient entity or energy. The secular, scientific reincarnation of the fundamental religious preoccupation with impending apocalypse does not, however, come equipped with a solution. The narrative of climate change and the death of our mother planet, as it requires a collective action and a collective solution, necessitates a collective belief on which

religious narratives have never had to depend. While scientists, like Bill Nye, encourage a sense of optimism about our future despite continual failure to address the causes and consequences of climate change, or even to accept that it exists, a media that imagines possible human futures betrays an overwhelming sense of resignation to the catastrophic.

Since the 1970s and 80s, visions of dystopian futures have proliferated, particularly within science fiction. Where once the genre speculated about the limitless possibilities of humankind's future, it now extrapolates "current sociocultural, political, and scientific developments" into the often near future and "follow[s] [them] to their potentially devastating conclusions" (Otto 180). In other words, sci-fi now imagines only one possibility for humankind: cataclysmic change often resulting in our species' near or total extinction. Even those fictions that ultimately show humankind overcoming extreme environmental and social degradation, either as a result of development and climate change or warfare, still posit that humans must reach a "tipping point," a point at which society suffers irreparable deterioration as a result of human action and which ultimately transforms the way in which society operates. Indeed, this tipping point often renders Earth inoperably uninhabitable and necessitates human evacuation. Science fiction is thus left to speculate only how humankind will react to and survive this cataclysmic change rather than if it will occur.

Interstellar, for example, posits a future in which industrial agriculture and the consequent lack of crop diversity results in a blight which wipes out nearly all crops excepting corn and thus decreases the amount of oxygen in the atmosphere. This, compounded with frequent dust storms that ravage humans' lungs as well as their homes, destines humanity to suffocate. As an inhabitant of a future Earth devastated by poverty

and resource scarcity, Laren, believes is humankind's destiny in Octavia Butler's *Parable of the Sower*, humans in *Interstellar* literally "take root among the stars." They inhabit space stations orbiting Saturn and other planets, while continuing to search for planets suited to human needs. In *After Earth*, as in *Interstellar*, humans have found a new home after an ecological disaster forced them to vacate Earth. In *Wall-E*, fleets of obese, zombified humans float around a megacorporation's starliner in hoverchairs while only sentient, trash-compacting robots remain on Earth, attempting to unbury the planet from beneath human garbage. Few narratives exist in which humankind recognizes the dangers inherent in current developments and systems in time to adapt them to prevent further ecological, social, and political consequences without first reaching this tipping point. *Snowpiercer* is perhaps one of these few, though it remains true to the pessimism of contemporary sci-fi while underscoring the uncertainty in "geoengineering," or the "use [of] technology to shape geological processes" (Newitz 216-17). In the film, CW-7, a substance developed to cool the Earth, is released into the atmosphere, effectively cooling Earth until it enters a new ice age.

While many of these fictions, particularly eco-dystopian fictions, exist as "part of the utopian project to imagine and bring about positive social change" and thus display an "impulse towards hope" if not for humanity then for individual humans, the burgeoning of these dystopian narratives reveal the growing resignation of scientifically literate thinkers to the likelihood that we will destroy ourselves, the planet, or both (Otto 180). While the way in which we respond to impending ecological disaster and social chaos varies between narratives, all share the conviction that we will face a man-made disaster to which our survival demands we respond. Contemporary science fiction thus reflects

the certainty that we will reach a tipping point, and many scientists maintain that we already have.[1]

Thus, little is being done to mitigate the consequences of ceaseless and accelerating development despite our recognition of them and despite scientists' increasingly urgent warnings that the human species must unite against climate change and environmental degradation. Many Individuals maintain that climate change either does not exist or is not as serious a threat as purported to be. The election in the United States of Donald Trump, a president who claims that, "the concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive," and who has appointed a climate denier and ally of the fossil fuel industry, Scott Pruitt, as the head of the EPA, seems a prescient warning of the world's inability to reach a consensus in the face of ever-accelerating change. Yet, Trump's espoused views on climate change suggest something much more insidious about humankind's relationship with Earth and its impetus, or lack thereof, to transform this relationship so that it is less parasitic and more symbiotic: that human innovation is dependent on an increasingly dominant capitalist economic system that encourages—or more accurately, necessitates—competition and exploitation.

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[1] See: Max McClure, "Earth May be Approaching 'Tipping Point,' Stanford Scientist Says," *Stanford Report*, Stanford News, 7 June 2012, http://news.stanford.edu/news/2012/june/earth-tipping-point-060712.html.
David Briello, "State of the Earth: Still Seeking Plan A for Sustainability," *Scientific American,* 12 Oct. 2012, https://www.scientificamerican.com/article/planet-seeks-plan-for-sustainability/.
Annie Leonard, The Story of Stuff: How Our Obsession with Stuff Is Trashing the Planet, Our Communities, and Our Health-and a Vision for Change, Free Press, 2010.
Naomi Klien, This Changes Everything: Capitalism vs. the Climate, Simon & Schuster, 2014.

Because human innovation is dependent on capitalism and capitalism on consumption, and thus the exploitation of natural resources, it is implausible that we can innovate ways to conserve natural resources while maintaining the competition necessary for business to thrive. While humankind may innovate new "green" ways to harness and produce energy and to manufacture goods, this "greening" of industry will only slow climate change, not reverse or mitigate its effects. In the words of Bill Nye, we would only be taking our collective foot off the accelerator, not pressing on the brakes (Nye). Furthermore, our economic systems still necessitate mass production and mass consumption to endure. We cannot simultaneously conserve and consume at the rates necessary to stabilize both the planet and the global economy. The two are mutually exclusive, and adapting our current systems to accommodate ecological health is evidently such an economic threat that a future President of the United States has reduced the notion of climate change to a competitive economic strategy. That humans will reach a tipping point is no longer speculative; it is certain.

Imagining Solutions: The Emergence of Mind Uploading

While humankind indisputably approaches ecological disaster, many sci-fi writers, scientists, economists, and historians suggest that we are on the verge of some other tipping point, as well, though exactly how this will manifest or what it may look like is contentious. As development necessitates growth, or endless increases in consumption, many thinkers question how this system can sustain itself when its ends, the eradication of poverty and a universal increase in the standard of living, are met. How will these ends be met on a planet with a finite amount of resources? Finally, if progress is linked to consumption, what will we do now that our consumption is largely

responsible for our impending demise? What will happen when we no longer need to

consume? In other words, where is all of this progress, this development, leading? This

is the precipice that we are approaching. If humans do unite against climate change, we

will have to fundamentally, and quickly, overhaul our current economic systems, which

will in turn upend our social and political systems of organization. Insofar as democracy

itself requires development, dominant Western political systems may dismantle as we

confront the end of development. How will humans cope with this shift and what other

systems will emerge?[2]

Some thinkers propose that before this comes to pass, humankind will face the

"singularity," a moment in which the invention of an artificial superintelligence will kick

start the "ever accelerating progress of technology and changes in the mode of human

life, which gives the appearance of approaching some essential singularity in the history

of the race beyond which human affairs, as we know them, could not continue" (Ulam 5).

Proponents of this theory maintain that the singularity will be a primarily positive

development in the history of humankind, though they recognize the potential for it to

create a dystopian future, perhaps most accessibly envisioned in the popular *The Matrix*

Trilogy.[3] While the exact tenants of this hypothesis vary among its proponents and each

tenant in its plausibility, one technological possibility that arises tangential to many of the

hypothesized developments of the singularity is the divorce of intelligence from biology.

In other words, the rise of artificial intelligence and the artificial augmentation of the

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[2] For more information on the end of economic growth and development, see:
Christopher Doll, "Our World Without Economic Growth," *Our World*, United Nations
University, 14 April 2010, https://ourworld.unu.edu/en/the-end-of-the-growth.
[3] The titular matrix refers to the simulated reality in which most humans live while an
advanced race of sentient machines exploit their biological bodies for energy.

human body and brain, when conflated, may ultimately result in mind uploading or whole brain emulation.

Mind uploading, however, does not necessitate the creation of artificial intelligence. [4] Indeed, the opposite may be true; the ability to upload human minds to computers may be the only way to spawn artificial intelligence, perhaps through some sort of reproductive process that occurs through the transmission and conflation of information within a computer, a digital analog to reproduction through the transmission of fluids between biological bodies, rather than creating intelligence from "scratch." In this sense, I, and many critics of the concept of the singularity disagree with John Von Neumann, Stanislaw Ulam, and Kurzweil's hypotheses. This is where mind uploading diverges from the popular notion of the singularity, though only in the sense that it does not require, as Kurzweil's singularity does, the advent of artificial intelligence or its resultant ever-accelerating rate of technological change. It would still, undeniably, result in the transcendence of the "limitations of our biological bodies and brains," thus "irreversibly transform[ing]" human life (Kurzweil 6 and 9).

In that it must precede the creation of artificial intelligence, mind uploading, the transferring of our consciousness to machines, either to live in a simulated world as in *The Matrix*, or to inhabit cyborg bodies as in *Ghost in the Shell*, is a somewhat more plausible manifestation of the singularity if we accept, as I do, Axel Cleereman's Radical Plasticity Thesis, in which he theorizes that consciousness develops out of both natural neural processes in the brain as well as the brain's "continuous attempts at predicting not

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[4] Mind uploading, also referred to as whole brain emulation, refers to the ability to upload human consciousness, an individual's "self" to computers as software.

only the consequences of its actions on the world and on other agents, but also the

consequences of activity in one cerebral region on activity in other regions"

(Cleereman).[5]

Thus, mind uploading arises as an alternative to Kurzweil's proposed singularity

in that it harnesses what intelligence currently exists (our own), and augments this

intelligence both physically and intellectually, rather than insisting we invent a new,

original intelligence that rapidly evolves. The recent invention of mind-operable

prostheses that harness neural impulses to augment the human body and allow the user to

"feel" texture exemplifies the likelihood that humans will embrace technology as a way

to protect their humanity from degradation and to correct damage inflicted on their

bodies. This type of prosthetic has the ability to make patients feel, as Les Baugh, a man

who lost his arms as a teenager and now participates in clinical research, states, "not so

much robotic as . . . back to human; being a whole person" (Canepari et al.). While mind

uploading would perhaps suggests the opposite of what Courtney Moran, a clinical

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[5] In his thesis, Cleereman recognizes the importance of emotion, which he believes is "sorely missing from contemporary discussions of consciousness," as a learning tool; in his words, an experiencer must not only learn, it must *care* about what it is learning and how that affects it and the world around it (Cleereman conclusion).

This suggests that while consciousness could likely survive a substrate shift and exist in computerized environments by mapping the brain's functions (as what the brain has learned has shaped how it functions), consciousness perhaps cannot come into existence without having first evolved *naturally*; thus, AI must be a continuation of our own human consciousness – our consciousness produced within machines – but cannot be *created* independently of it. As John Searle states in his review of *Superintelligence: Paths Dangers, Strategies* and *The 4th Revolution: How the Infosphere is Reshaping Human Reality*, computers have "no [real] intelligence, no motivation, no autonomy, and no agency;" all psychological behaviors are only programmed functions that have no basis in real psychology (Searle). Without any sort of emotion and thus motivation, computers can never evolve an intelligence beyond what is programmable; they cannot *learn* outside of their programming.

prosthetist, states is her hope for individual patients, i.e. that "the limbs should become a

part of [the patient], not [the patient] becoming part of the machine," it would still

function as a means of preserving humanity from degradation, and perhaps even

extinction (Canepari et al.). Humans, rather than leaving the human world, would be

joining a world created by and for humans; a world more human than our current home.

Mind uploading thus reaffirms rather than threatens human nature. Perhaps Crake, of

Margaret Atwood's *Oryx and Crake*, rightly suggests that humans should not think of

technology as separate from human nature, but rather a logical and inevitable extension

of it.

Just as Kurzweil proposes that the singularity will occur around 2045, researchers

invested in mind uploading hope that we will know enough about consciousness to begin

uploading our minds by that same year (Piore).[6] Certainly, humans should hope so; as

human activity continues to warm and pollute the planet,[7] the window of time for humans

to act preventatively against political instability and global warfare or a sixth extinction

event is quickly narrowing. Even human actions, as in *Snowpiercer,* that could prevent

or slow climate change and environmental degradation might result in environmental

and/or political instability; for example, embracing green energy while heavily taxing

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[6] However, if consciousness is a quantum mechanical phenomenon, this may not be
possible until the advent of quantum computing, a development not likely to manifest by
2045 (Lewis).

[7] The warming caused by human activity is then accelerated by a number of positive
feedback loops. For example, as the polar ice caps melt, the planet is less able to reflect
the sun's rays (i.e. to ward off heat), and the increase of water vapor in the air caused by
warming results in further warming. For more on climactic positive feedback loops, see:
Guy Mcpherson, "19 Ways Climate Change is Now Feeding Itself," *Transition Voice*, 19
August 2013, http://transitionvoice.com/2013/08/19-ways-climate-change-is-now-
feeding-itself/.

fossil fuels might destabilize an oil-dependent Middle East. While possible solutions abound,[8] each with their own set of criticisms and drawbacks, mind uploading is perhaps the most plausible solution to date. It may even be the most ethical.

Considering Plausibility: An Argument for Mind Uploading

Let us begin with plausibility. There are two primary reasons that many of the solutions described in Annalee Newitz's *Scatter, Adapt, and Remember* and elsewhere strike me as implausible. The first is that many of these solutions (e.g. terraforming earth; creating underground, domed, or living cities; colonizing Mars or other planets) require vast human-driven changes to the environment, of either our planet or others, that may either take too long to develop to save humanity or will have unintended consequences that are equally as bad or worse for humans and animals than climate change. The second is that many of these same solutions require vast overhauls to current political and social systems or a consensus that a divided global population will never be able to reach to achieve them. I do not have faith, as some optimistic scientists do, that humankind will unite against a common enemy—in this case, climate change— unless that enemy can be tangibly fought via warfare. The enemy that we humans must fight is the aggregate of progress via development, capitalism, democracy, and industry; the very systems and principles that have come to define the modern era and modern values.[9]

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[8] See Annalee Newitz's *Scatter, Adapt, and Remember: How Humans Will Survive a Mass Extinction* for a brief overview of possible solutions, some more far-fetched than others.

[9] I recognize that these are primarily Western values. However, modernity is, for all intents and purposes, a Western construction/invention. As society becomes global, it becomes homogenously Western.

But this does not necessarily have to be our enemy; we do not have to struggle against it, to continue to define ourselves as biological beings living within and dependent upon our biological ecosystems. This is where mind uploading emerges from the dark, dusty corners of speculative science fiction. To that extent, I doubt our ability to ever change these systems or to collectively foster a willingness to abandon them—a requisite of remaining on a planet with a sensitive ecosphere and finite resources—the only plausible solutions are those that embrace or exploit this aggregate as a means of change. Mind uploading, unlike terraforming and sustainability practices, can exist simultaneously as the progeny of development as well as its end; while its realization necessitates exploitation of the environment additional to current consumption, its achievement would ultimately trigger a sudden and dramatic decrease in the consumption of natural resources. Mind uploading would divorce human consciousness—human life—from biology; humans would no longer require food or water to live, and plant and animal agriculture would vanish.

Furthermore, I posit that a machine, no matter its size or computational power, would be easier to support in terms of energy use than all that it takes to sustain biological, human life, both in terms of actual survival (e.g., food, clean water, clothing, and shelter) as well as humanity's trajectory of development and progress. Human development, except for enhancements to and maintenance of the mother computer, would exist entirely within a virtual world and thus would no longer exploit or pollute the natural environment. Depending on how exactly this concept manifested, humans might only need to affix a vast array of solar panels and wind turbines to the mainframe to power the human world. Perhaps we would launch our new world into orbit around the

Earth or other planets, harnessing solar radiation to power our existence.[10] Maybe we

would turn the universe, as Nick Bostrom suggests, into a series of computational

substrates (Newitz 254). If humanity uploads itself to a machine, the possibilities, as for

science fiction writers of yore, become endless.

Furthermore, while the idea of mind uploading may currently be too outlandish to

receive direct funding, much of the research necessary to realize mind uploading is

conducted indirectly as medical researchers study and image the brain to understand and

treat neurodegenerative diseases like Alzheimer's and dementia (Quinn). As medical

technology advances, our ability to map the human brain and understand human

consciousness will accelerate. Researchers are already conducting simulated experiments

involving a brain-computer interface, or neuroprosthesis, to "resurrect consciousness," or

to "restore consciousness that is lost due to brain damage, degeneration, or decay"

(Astakhov 245-246). That mind uploading could serve as a blanket solution to a

multitude of problems nearly ensures that research will, in some form, be executed, even

if it can only be executed "bit by bit," if you will. Scientists and developers will likely

conduct much of the research requisite to mind uploading as they find commercialized,

(i.e. profitable, purposes for it) whether they be for entertainment, education, or medical

intervention.

Much of our technology is already heading in this direction and will lead quite

naturally to mind uploading. *Pokemon GO* is a rudimentary example of how virtual

reality has and exceedingly will come to manifest in our lives, thus normalizing life in a

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[10] Indeed, we have the technology. See: https://www.newscientist.com/article/dn13545-nanomaterial-turns-radiation-directly-into-electricity/

world enhanced by technology and in which most of what we see is simulated rather than materially real while developing mapping technologies and computing power in increasingly smaller machines. It is my sincere hope that this technology comes to manifest as Jeff Vandermeer envisions in his essay, "Are We Alone?" Suggesting that someone develop a virtual reality program which allows us to see the "chemical signals in the air from beetles and plants, pheromone trails laid down by ants, and every other bit of the natural world's communications invisible to our primitive senses," as well as, "every trace of pesticide . . . and other human-made intercessions on the landscape," Vandermeer shows how virtual reality technology, rather than subverting the reality of human existence, ultimately enhances and reaffirms it. As virtual reality programs that capitalize on the natural world—our neighborhoods and suburbs, cities and nature trails winding around mountains in remote regions of the world—proliferate, the mapping necessary to simulate the home seamlessly and realistically we hold dear as we all upload into a single mainframe and sequester ourselves from the damage we have done to the earth will already be done.

While Vandermeer's vision would no doubt provide entertainment, it also serves as a powerful example of how we might harness virtual reality for educational purposes; this technology could be used to enhance history lessons by projecting users into the past, and, as in Vandermeer's proposal, enhance scientific understanding of the natural world. Part of development's agenda is the eradication of poverty (though, its ability to achieve this goal is contended), and that necessitates education. As we strive to develop globally, virtual reality could be revolutionary to the education of those living in remote areas without the resources necessary to receive an education (ideally) equal to those in

developed areas. Mind uploading, specifically, could help to facilitate interaction with peers and trained teachers, while providing virtual access to laboratory equipment, libraries, computers,[11] gymnasiums, and linguistic and cultural immersion. Uploading into a simulated reality to perform science experiments would conserve resources even if in a developed nation, and any human could access, if simulated, the world's best libraries.

Again, many of these ideas translate back to entertainment: humans could embark on virtual vacations, projecting ourselves into the past or perhaps other simulated, fictional worlds. We could shrink down and explore all the life that exists in a patch of grass and battle or ride on ants. We could live out an entire lifetime as a fictional character, seeing how the choices we make affect our happiness, achieving high scores based on how long the character lives, as in the *Rick and Morty* episode, "Mortynight Run." Or we might exploit virtual reality within the criminal justice system as in the "White Christmas" episode of *Black Mirror*, locking people into virtual prisons or manipulating simulated reality as a means of eliciting confessions. If developed, the ability to "pass over" into a simulated reality for good once we die and thus attain immortality, as in another episode of *Black Mirror,* "San Junipero," would perhaps draw the greatest revenue or investment. Indeed, this would be, I posit, the first step in humanity's permanent dispossession of their biological bodies. While I embrace a utopian vision of mind uploading in which all humans are uploaded to a mainframe

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[11] Here, I am assuming that, to be plausible, virtual reality in undeveloped nations would require students uploading to a single mainframe solely intended for mind uploading. Thus, computers for actual personal and educational use would exist only within the simulated reality. Every student having their own personal computer seems implausible.

regardless of their ability to monetarily contribute to its maintenance, and in which all humans contribute equally in terms of labor, I recognize that the plausibility of an interchangeably virtual and cyborg existence necessitates its initial commercialization and profitability. That it palpably benefits us and perpetuates development is what renders its realization more practical and probable than, say, sustainability.

Considering Ethics

While mind uploading's ability to work in tandem with development is primarily responsible for its plausibility as the best, or only, solution to humanity's current predicament, so too is its shift in emphasis away from the environment and towards the culprit of environmental degradation: humans. As established, humans can never be sure how our intervention in geological processes, no matter how well-intentioned, will affect the Earth. It is not as if we have the ability to test out solutions, except through simulations—through virtual realities—that may or may not be accurate. We have only one earth, and as of yet, we do not possess the ability to permanently leave it; we cannot afford to effect change without the certainty that it will succeed, or at least, that it will not backfire. Furthermore, no matter how we intervene in geological processes, humans can never overcome planetary resource limitations. Insofar as we will always consume, we will always need to ceaselessly expand, but every planet will have its limit. Excepting a simulated reality, no reality exists in which humans can *create* new resources. Every planet we terraform and inhabit, we will exhaust, and the rate at which we exhaust them will increase geometrically in tandem with population growth. Any solution that focuses on the state of the environment, rather than humans' role in it, can only be a short-term solution.

Furthermore, changing humans to suit a multitude of environments seems a bit more manageable task, as well as a richer experience, than changing a multitude of environments to suit humans. Many scientists and science fiction narratives envision these changes taking place on a biological level. However, just to survive the radiation we would suffer to reach other planets, humans would have to undergo immense biological changes or else craft unreasonably expensive and resource-dependent spaceships.[12] Once we reach those planets, we would have to adapt to each unique atmosphere. To survive in an environment inhospitable to human life, Juna, in Amy Thompson's *The Color of Distance*, must physically, and thus biologically, transform into a member of the amphibious alien species she and her lost team of surveyors intended to study. However, these changes do not apply, as with mind uploading and virtual reality, strictly to human survival; often, these are explored in relation to human improvement. Crake, in *Oryx and Crake*, genetically engineers a new "type" of human more suited to Earth's changing environment and, as herbivores with their penchant for war "edited out," less likely to contribute to its degradation (Atwood 354). His primary purpose, however, in creating the Crakers was to have "floor models" that display the possible genetic manipulations parents could choose for their future children; it was profit-driven (Atwood 363-64). The option to genetically engineer children nearly exists now, a possibility that frighteningly harkens back to the Eugenics movement of the early twentieth century, which ultimately spawned the Nazi program to create a "master race."

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[12] For more information on the biological hazards of space, see: Phil Mckenna, "Nanomaterial Turns Radiation Directly into Electricity," *New Scientist*, 27 March 2008, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2832349/.

But we humans are reticent to tamper with our DNA. Like with terraforming, we can never be certain that alterations to our genome will manifest as we intend, and once the gene is out there, there is nothing that we can do to stop its proliferation short of impeding human rights and preventing reproduction; again, enacting a eugenic agenda. Even if the genes did manifest as intended and our genetic manipulation met with riveting success, it would take entire lifespans to reap the benefits of these changes unless, as in *Oryx and Crake*, we commit genocide against the inferior, unmodified humans. Thus, genetic engineering in humans leads to the potential creation of a genetic underclass that becomes biologically—and thus, socially—subordinate to a genetic superclass or a situation similar to that farcically envisioned by Aldous Huxley in *Brave New World*. This is especially true if these genetic modifications are only affordable to the wealthy. If genetic engineering leads to this extreme, only genocide of one side of the other could rectify the situation. While I recognize the possible dystopian social stratification inherent in mind uploading based on the possession of cyborg bodies of varying quality—or no body at all—that these bodies are not extensions of or inherent to our consciousness allows us to retain our ability to recognize the inferiority being imposed upon us and to rebel against it. In a simulated reality in which we all have equal, infinite access to our entire, collective knowledge, we might instead achieve a sort of unparalleled egalitarianism. The blurring of boundaries between humans that a cyborg existence facilitates, and its ability to divest humans of identity to transcend these borders and unite humans based on affinity, as Donna Haraway posits, insists that we abandon, rather than strengthen, demarcations in genetic identity. This blurring can undermine the societal stratifications founded on gender, race, and sexuality, rather than strengthening

them as genetic engineering would. Furthermore, reflecting humans' historical shame of the body, and for other reasons difficult to conceptualize and articulate, humans would ultimately find it easier to abandon our flesh and our blood, to allow it to remain "pure," than to alter it.

Furthermore, just as is more ethical to abandon our biology than to alter it, it is more ethical to abandon our planet than to continue altering it. Already, we have devastated the diversity of life that exists on Earth; human activity has caused the loss of 100 to 1000 species per million per year (Dell'Amore). We torture many more in animal agriculture and through medical and scientific research. Perhaps a world like the one Rosemary envisions at the end of Karen Joy Fowler's *We Are All Completely Beside Ourselves* is the best solution for both animals and for humans; a world in which humans are quarantined, and animals and nature are left to do as they well, unimpeded, unimpacted, only observed. Though we initially accelerated climate change without knowing, that we did not immediately lift our foot from the accelerator upon the discovery of the havoc we are wreaking is unethical. But insofar as our intervention has been damaging, we must evaluate the ethics and risk of intervening further. Given that it was an extinction event that may have given rise to us, it may not necessarily be ethical to prevent a sixth extinction if we discovered ourselves capable. We cannot anticipate the consequences of impeding the natural cycle of the Earth; we may impede its ability to regenerate and heal. We could prevent numerous other species with the potential for intelligence from rising from the remnants of a human Earth.

Further Considerations & Science Fiction as Testing Grounds

Ultimately, we are no more unsure of our ability to upload our minds to computers than we are of our ability to terraform Earth, Mars, or any other planet, but at least the consequences of mind uploading would be limited to our species. And of course, there are consequences and dangerous implications inherent in all the possibilities and potentialities of mind uploading that humans must explore. Moreover, all of these potentialities and dangers depend on what exactly a world in which we have the ability to upload our minds to computers and robotic bodies might look like. Exactly what problems will it solve and to what extent? How will mind uploading and the blurring of the distinction between human and machine affect our identity as individuals and as a species? How will it affect the way we interact with one another or the way that we explore the universe?

Before we can begin to imagine the subversive potential of virtual reality(ies), it is important to locate what depictions of virtual reality and cyberspace already exist. Thus, to answer these questions, the remainder of this project will explore existing representations of virtual futures in science fiction to investigate how mind uploading might manifest, what kinds of world(s) humans could and would create for themselves, how it would change human culture and identity, and how it might endanger humans or perpetuate the same dystopian pessimism currently assigned to human-driven climate change. Using these visions as catalysts, this project will then draw upon critical theory to explore the subversive potential of cyberspace and virtual futures, utilizing an interdisciplinary approach to inform a Marxist and feminist standpoint.

Science fiction provides, as Genie Nicole Giaimo argues, a platform on which "humanities scholars [can] intervene in the philosophical and practical conversations" of

science, enabling them to "bring historical, political and cultural theories to bear" on scientific concepts and innovations as well as their implementation. Science fiction is inherently transdisciplinary, and works belonging to this genre function as models through which we can hypothesize the cultural, political, economic, and philosophical ramifications of scientific endeavors.

　　For example, William Gibson, anticipating the "emerging ecosystem sprouted by computer networks," prophetically coined the term "cyberspace" in his short story "Burning Chrome" in 1982 (Popova). With the publication of his seminal novel *Neuromancer*, Gibson pioneered a subsect of science fiction dubbed "cyberpunk," and popularized both the term "cyberspace" as well as the concept that it simultaneously represented and anticipated: the World Wide Web. Gibson anticipated, and perhaps even influenced, the invention of firewall software, which he referred to as ICE (intrusion countermeasures electronics). However, while Gibson's vision of cyberspace foresaw the World Wide Web, it also projected beyond it, into a historicized future where cyberspace is not only accessible, but habitable; where humans inhabit machines and machinery penetrates human bodies, allowing technology to modify, perhaps even usurp, human biology. Thirty-five years after Gibson coined "cyberspace," Western culture has still not shaken his particular vision of cyberspace, and his coinage has become synonymous with the internet. Indeed, others have built upon Gibson's vision, further engraining it into cultural visions of the future.

　　Neuromancer, then, serves as a prime example of how science fiction, whether in the form of novels, short stories, graphic novels, films, visual art, or video games, allows writers and readers to envision, enact, investigate, and encourage or warn against

potential futures. This project, therefore, will engage science fiction and cultural texts, in addition to critical theory and scientific literature, to explore the potential of virtual futures, and the ways in which virtual realities can undermine the polarizations of race and gender to subvert the discourse of power that produces them.

Clarification of Terms

Cyberspace, while almost always connoting a complex web of data, possesses many denotations. When Gibson first coined the term, he says that, "it was evocative and essentially meaningless. It was suggestive of something, but had no real semantic meaning…" To Gibson, it was little more than an "effective buzzword" (*No Maps for These Territories*). Thus, the term became a blank canvas onto which others projected their own notions of what they term cyberspace evoked. Don Slater once described cyberspace as a sort of "social setting" that exists within computer space, digital space, "a space of representation and communication". Since then, the term has become a synonym for the Internet, which has become a synonym for the World Wide Web. In essence, "cyberspace" has become an umbrella term denoting any sort of digitized space that houses networks of data, and often, that allows communication between distant and disparate networks. For the purposes of this project, the term cyberspace will specifically denote a digital space in which users can become immersed, with and in which they can simulate physical interactions; a virtual environment capable of facilitating and interactive experience either between the user and data or the user and other user via data.

II. Case Studies: Current Representations in Science Fiction

> "Cyberspace. A consensual hallucination experienced
> daily by billions of legitimate operators, in every nation, by
> children being taught mathematical concepts... A graphic
> representation of data abstracted from the banks of every
> computer in the human system. Unthinkable complexity.
> Lines of light ranged in the nonspace of the mind, clusters
> and constellations of data. Like city lights, receding."
> -William Gibson, *Neuromancer*

If it is possible for humans to inhabit virtual spaces, and if it is then probable that we must if we wish to continue living, then the next question for humans to consider is whether or not these virtual spaces will be worth living in. Virtual futures present a unique opportunity for humans to exert previously unimaginable control over their future. But who will exert this control and to what end? To whom will a virtual future belong? While some critical theorists like Donna Haraway have exalted technology and its ability to deconstruct the damaging binaries on which sexism, racism, colonialism, etc. operate, most depictions of virtual reality and cyberspace are dystopian and strengthen, rather than dissolve, the divisions between man and machine, technology and nature, or "the natural." To imagine the subversive potential of virtual futures and their ability to undermine, rather than merely uphold, oppressive systems and ideologies, I will present and respond to three texts that contain what I consider foundational depictions of virtual reality and cyberspace: 1) the aforementioned *Neuromancer* by William Gibson, 2) The Wachowskis' *The Matrix*, and 3) Ernest Cline's *Ready Player One*. In delineating the depiction of each text, I will investigate the subversive power inherent or lacking in each work and how they contribute to dialogues concerning human futures and the relationship between human and machine.

Neuromancer

Having already introduced and established its significance, I feel it is only appropriate to take *Neuromancer* as our first catalyst for the investigation into the potentialities of virtual space given its impact on both the genre of science fiction, and specifically cyberpunk, as well as, and more pressingly for my purposes, on conceptions and depictions of cyberspace. Because it has generated a plethora of scholarship and has influenced nearly every text that succeeds it, Gibson's depiction is fundamental to any discourse regarding virtual reality and cyberspace as an inhabitable space.

In Gibson's bleak historicized future, geographical boundaries are as blurred as the boundaries between virtual and physical, "real" spaces. As a result of unmitigated urban sprawl, nearly the entire east coast of the United States has congealed together into a single urban center called the Boston-Atlanta Metropolitan Axis (BAMA), known colloquially as The Sprawl. Yet, the blurring of the geographical boundaries, of city and state limits, within the east coast strengthens the distinction between metropolitan and non-metropolitan spaces. Enclosed in geodesic domes, The Sprawl possesses its own climate and an artificial ever-gray sky, emancipating it from regular night and day cycles; in essence, The Sprawl has become its own distinct world, or at least, a biome emancipated from the world[13] (Gibson 43).

For instance, Henry Dorsett Case, Gibson's drug- and cyberspace-addicted protagonist, communicates the incomprehensible size and busyness of the megacity by

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[13] Spaceship Earth, an attraction at Epcot that also serves as the park's emblem, is perhaps the most famous and recognizable geodesic dome. See: "Spaceship Earth," *Walt Disney World*, Siemens, https://disneyworld.disney.go.com/attractions/epcot/spaceship-earth/.

rendering it in cybernetic language:

> "Program a map to display frequency of data exchange, every thousand
> megabytes a single pixel on a very large screen. Manhattan and Atlanta burn
> solid white. Then they start to pulse, the rate of traffic threatening to overload
> your simulation. Your map is about to go nova. Cool it down. Up your scale.
> Each pixel a million megabytes. At a hundred million megabytes per second, you
> begin to make out certain blocks in midtown Manhattan, outlines of hundred-
> year-old industrial parks ringing the old core of Atlanta…" (Gibson 43).

This passage serves three distinct purposes. First, it expresses the immensity of both
these future metropolises and of the volume of information available—or unavailable—to
any user of cyberspace, the volume of information penetrating any user. Second, if Case
is representative of the larger population, it demonstrates the linguistic dependence of this
future populace on cybernetic language to understand and conceptualize the physical
world around them. Third, insofar as The Sprawl necessitates a blurring of geographical
demarcations while originating a more rigid conceptual and physical distinction between
metropolitan and non-metropolitan spaces, this passage, in comparison to Gibson's
description of cyberspace, complicates or blurs another binary opposition or demarcation
on which human conceptions of the world begin: the distinction between physical space
and cyberspace or "nonspace." In what is one of the first, if not *the* first, descriptions of
cyberspace, Gibson writes:

> "Cyberspace. A consensual hallucination experienced daily by billions of
> legitimate operators, in every nation, by children being taught mathematical
> concepts... A graphic representation of data abstracted from the banks of every

computer in the human system. Unthinkable complexity. Lines of light ranged in

the nonspace of the mind, clusters and constellations of data. Like city lights,

receding" (Gibson 51).

Yet, even as this distinction is dissolved, it solidifies: a reversal of material form occurs.

Case and other characters "jack in" to this "hallucination" to become and interact with

pure data that is represented as palpable structures, vast, architecturally complex cities

bricked with data, and ultimately, to steal valuable data from mega-corporations that hold

more power than actual governments. They are released from their physical, material

form, from their "meat," and become pure information, pure data, interacting with other

data. Pure data, information disembodied, is thus demonstrated to be inconceivable

without a physical analog. This analog underscores and makes palpable the distinction

between the physical and cyber spaces seeming blurred through their comparison.

The differences between The Sprawl and Night City further strengthen this

distinction. While Case considers BAMA his home, Case spent the majority of his time

as a "console cowboy," or hacker, prior the events of the novel in Chiba City, Japan,

home to Night City. Night City is defined by the distinction that The Sprawl, which

exists somewhere in the space between night and day, defies. During the day, Night City

is dead and gray, empty of signs and signifiers, of features or character, but at night, the

city explodes into a diffusion of neon light and noise and crawls with criminals, pimps,

gangsters, and hitmen (Gibson 11). These criminals enact violence and perpetrate crimes

materially, within physical space, whereas the Panther Moderns of The Sprawl

manipulate data and perpetrate crime within cyberspace. Through their actions in

cyberspace, the Panther Moderns avoid physical action by manipulating others in the

material world to act on their behalf.

Spatial oppositions are not the only demarcations strengthened within Gibson's

novel. While Donna Haraway imagines the potential of technology to disintegrate the

rigid boundaries based on reifications of gender and race, Lauraine Leblanc, in her article

"Razor Girls: Genre and Gender in Cyberpunk Fiction," argues that Neuromancer

upholds, rather than upends, constricting constructions of gender. She reads

Neuromancer alongside two other literary texts, *Mindplayers* by Pat Cadigan and *Glass

Houses* by Laura J. Mixon*,* to investigate gender and how (or if) women can use

technology to undermine male domination in cyberpunk fiction, centering on the

"breakdown of categories through the use of technology which is at the root of cyberpunk

authors' rethinking of gender" (Leblanc 3).

Specifically interrogating the representations of each novel's main female

protagonist, Leblanc argues that the cyborg characters of cyberpunk fiction "transform

gender" in two ways: through "transgendered representations," which fail to revise

gender, or through a "radical change of subjectivity, of embodiment, and of gender."

While technological and surgical implants allow her to emulate masculine qualities (i.e.,

toughness, quickness, and strength) that typically elude "natural," unaugmented female

bodies, Gibson's Molly thus embodies this sort of transgendered representation. Indeed,

because she lacks typical "womanly" attributes, she evades categorization as either a

"whore" or a "Madonna" (Leblanc 3). Furthermore, she rewrites the "whore" image and

narrative by using the money she made as a prostitute to afford the augmentations that

allow her to now hire herself out (i.e. to sell her body) as a mercenary and bodyguard

rather than a prostitute. However, Molly, just as she is no longer human, is only nominally a woman; it is only through her assumption of a male role that any "revision" takes place, rendering it not revision, but mere role-reversal, which ultimately functions to uphold the gender it seeks to revise through technological augmentation (Leblanc 4).

The way in which Molly and Case perpetrate their cybercrimes upholds both physical/cyber, or spatial, as well as male/female, or gendered, divides. Further instantiating male/female as mind/body, as many theorists and philosophers throughout history have done,[14] Case jacks in to the matrix to execute his portion of their mutual task within "the nonspace of the mind," while Molly physically breaks in to whatever databanks or corporations Case is hacking in to. Case even inhabits Molly's body through simstim (i.e. "simulated stimulation" that allows somebody jacked into the matrix to tap in to another person's physical experiences), seeing and hearing all that Molly does and experiencing the brutal beatings and pain she suffers and that ultimately forces Case out of Molly's body because it is too intense to withstand (Gibson 63). Thus, Molly becomes pure flesh, doing only as Case tells her, and acting as a receptacle for Case's consciousness and will. Indeed, when Molly works as a prostitute, she possesses an augmentation that allows her mind to go blank so that she does not remember what transpires between herself and her clients; she become pure flesh, pure body. Additionally, Gibson's text explicitly values the mind over the body, and thus the masculine over the feminine. Case continually derides the body, referring to flesh as a prison, and when he jacks into the matrix for the first time after his operation renders him able to do so, he revels in "bodiless exaltation" (Gibson 6): "And somewhere he was

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[14] Freud and psychoanalysts who build on Freudian psychoanalysis, for example.

laughing in a white-painted loft, distant fingers caressing the deck, tears of release

streaking his face" (Gibson 52). Furthermore, to the extent that both mind and body are

required to complete all of Molly and Case's missions, the divisions between mind and

body, between real and virtual and material and immaterial, are accentuated.

Finally, Leblanc concludes that, of the three texts that she examines, only

Mixon's *Glass Houses* radically revises gender in that the female protagonist can shift

her subjectivity from machine to human, and from masculine to feminine, and back

again. Thus, she traverses and occupies multiple consciousnesses, multiple identities,

multiple genders, while consolidating them under a single consciousness, or a single "I."

She thereby collapses any "artificial division of concepts into dichotomies," while

pluralizing the basis of her identity (Leblanc 6). Only *Glass Houses* rewrites or revises

traditional female narratives based on the masculine/feminine dichotomy, thus liberating

the protagonist from the restrictions inherent therein. Though Gibson fails to articulate a

cyborg existence that possesses revisionary powers, it is important to note that Laura J.

Mixon is able to conceive of a cyborg existence, of a virtual existence, that does.

Thus, cyberspace in *Neuromancer* strengthens the very distinctions that Haraway

posits cyborg existence has the potential to blur. Rather than a revolutionary existence,

David Brande reads the cyborg, particularly Gibson's cyborg, as a symptom of the larger

late-capitalist structure that Gibson's novel expresses. He maintains that the "denaturing

of the subject" must be understood as a consequence of the "historical-economic

transformations," the isomorphic shift and changes, "described by Marx and Engels…as

characteristic of bourgeois socioeconomic life;" i.e., the of "constant revolutionizing of

production," and thus of the "relations of production" and thereby "the whole relation of

society" (Brande 512). Technoscience, the cyborg and cyberspace, is thus another iteration of the "coercive [internal] laws of the market," of this constant revolutionizing, and Gibson's characters' struggle to keep up with technology epitomizes the struggle to keep up with the internal laws of the market, the perpetual transformation and revolutionizing of the modes of production, and concomitantly, social conditions; i.e., a struggle to adapt to "the rapidity of cultural change" (Brande 514). The first thing Case sees when he jacks in to the Matrix for the first time after his operation are the cornerstones of capitalism as the virtual world unfurls and whirls past him, and a sense of unattainability overwhelms him:

> "And [cyberspace] flowed, flowered for him, fluid neon origami trick, the
> unfolding of his distanceless home, his country, transparent 3D chessboard
> extending to infinity. Inner eye opening to the stepped scarlet pyramid of the
> Eastern Seabord Fission Authority burning beyond the green cubes of Mitsubishi
> Bank of America, and high and very far away he saw the spiral arms of military
> systems, forever beyond his reach" (Gibson 52).

To Brande, cyborgs are the very thing that allows capitalism to wreak havoc on the world and on its subjects. He explicates "the 'interpellation' of the cyborg," arguing that the cyborg is "the ideological 'dream-work' of [Gibson's] fiction;" that they are the reflection or representation of the ideological fantasy of cyberspace, which answers capitalism's "immanent contradiction," "the very source of its power," and its incentive for constantly revolutionizing the means of production: that "its limit is its impetus for development" (Brande 528; 536). In that it becomes a means to "reterritorialize the deterritorialized flows of advanced capitalism," cyberspace becomes a new frontier, a

new New World, but one of limitless space, limitless expansion (Brande 536).

Cyberspace thus becomes a commercial, capitalist, rather than revisionary, realm.

Furthermore, this ideological fantasy of limitless space and endless expansion, "does the essential ideological work of constructing (cyborg) subjects who are invested in an 'objective belief' in [cyber]space, who will structure their behavior as if this fantasy was true, whether or not they "believe" it theoretically" (Brande 532). Insofar as cyberspace also symbolizes future opportunity, much like the "Old West" myth did, it becomes the "*jouissance* of the cyborg" (Brande 532). Building on Žižek's definition of ideology, Brande argues that this is the ideological fantasy that structures the "'impossible' totality" of *Neuromancer*'s reality, the basis on which this "reality" functions, and which constitutes the nature of the cyborg's identity (Brande 526).

Ready Player One

Welcome to the "Ontologically Anthropocentric Sensory Immersive Simulation," more commonly known as the OASIS, Ernest Cline's vision for humanity's future. Aptly named, the OASIS in Cline's near-future functions as a refuge into which humans around the globe in 2044 escape. In many ways, his analog to Gibson's matrix, the OASIS supersedes its predecessor. Just as Gibson's matrix "has its roots in primitive arcade games" (Gibson 51), the OASIS began as a massively multiplayer online roleplaying game (MMORPG), and while it has retained its initial function, it has also evolved into a multinational virtual society on which "real," physical society depends. Even more than Gibson's matrix, the OASIS, though palpably a copy that builds on its original, has displaced reality in an undeniably Baudrillardian[15] way. However, the OASIS does not

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[15] See Jean Baudrillard's *Simulacra and Simulation*.

aim to replicate the physical world exactly so as to be indistinguishable from it. Part of

the great appeal of the OASIS is that it is *not* a replication of the energy and resource-

depleted, poverty-ridden world that its users live in. Users do not have to inhabit the

virtual space merely as faithful digital copies of themselves, performing the same

mundane tasks that they do in the "real" world. Instead, users can wield swords, guns,

arrows, and amulets; purchase private planets and construct personal sanctuaries; craft

spaceships to fly between planets, discover new worlds, complete quests; vanquish foes

and battle monsters; and users can become heroes and heroines. They can become almost

everything that they cannot in real life, though often at the expense of "real" roles.

Yet, OASIS users still cannot escape the mundane, even the contemptible, aspects

of "real" life. While Wade, Cline's protagonist who is known as Parzival within the

OASIS, can use the system to overcome his circumstances, others, like his mother, are

limited to the same jobs as they would be in "real" life. To make end's meat, Wade's

mother, Loretta, worked "two full-time OASIS jobs, one as a telemarketer, the other as an

escort in an online brothel" (Cline 15). While Loretta's job as a virtual escort improves

upon Molly's job as a "meat puppet" in *Neuromancer*, in which clients essentially rented

her body while her mind went blank, Loretta's job, which requires her to talk dirty to her

clients is still demeaning, and evidences the persistence of misogyny even against virtual

bodies (Gibson 142). Though her body is relieved of the work of an escort, her mind is

not. Furthermore, because Loretta had to work these jobs within the OASIS to provide

for herself and Wade, she is unable to fulfill any roles outside of the OASIS, e.g. her role

as Wade's mother. Because she is too busy fighting for her and her son's economic

survival, programs within the OASIS raise Wade; she often relies on these to distract her

son while she performs her duties as an escort. Insofar as the OASIS becomes a space in which it Loretta is demeaned, it can no longer function as a refuge, and Loretta turns to drugs to escape the degradation of her mind within the OASIS and of her body, through economic strife and unfulfilled basic human needs, without.

Certainly, those economically limited outside of the OASIS are economically limited within it; just like real-life, almost everything has a price. Clothes and accessories, for example, still function as markers of status and wealth, and so social mobility within the OASIS is inextricably tied to economic status without. While attending school within the OASIS drastically decreases the severity of the bullying, at least the physical bullying, that Wade experiences, other kids with whom he attends virtual school, like Todd13, still tease him about the "free default skin" that Wade's avatar wears, and Todd13's snobbery is linked to his "expensive designer skin" (Cline 29-30). This not only replicates exactly the economic component of social relations, but perpetuates the economic condition of the labor class, insofar as they are now trading material labor for immaterial goods, goods which only benefit them within the OASIS, rather than in "real" life. Rather than purchasing clothes to protect their bodies and keep them warm, laborers who have access to the OASIS funnel their labor power into a system powered by their exploitation, which ensures they never amass physical capital, never have the means to escape or even better their material situation. Thus, the OASIS ingeniously answers the question of how to continuously expand, develop, and profit in a resource-depleted world. Thus, much or all of Brande's analysis of *Neuromancer* applies to *Ready Player One*, especially insofar as the OASIS serves to "reterritorialize the deterritorialized flows of advanced capitalism" (Brande 536). The OASIS may

exemplify Brande's analysis more so even than Gibson's cyborg characters or his vision of cyberspace. Certainly, it exemplifies and upholds my position that capitalism will serve as the impetus for any virtual future, and that its ability to answer, again, to capitalism's "immanent contradiction," that "its limit is its impetus for development" renders it the most likely solution to the threat of climate change (Brande 528; 536). However, the efficacy of the solution, whether it will be palliative or restorative, depends on how this solution might manifest and if it can be divorced from the impetus for its development; i.e. the salvation of capitalism.

Furthermore, while at first the narrative of Wade, an archetypal "underdog," overcoming immeasurable odds to become a millionaire by exploiting the very thing meant to placate him and others like him may seem revolutionary, even superficial analysis reveals it as a simple reincarnation of the "American Dream." Wade is able to overcome his circumstances, not by overthrowing the system that oppresses and exploits him, but by conforming to it entirely. The contest that OASIS creator James Halliday devises, in which OASIS users search for a hidden egg by solving riddles and completing quests based on a sort of "cultural canon" assembled by Halliday, is essentially an exercise in cultural capital. At first this may seem in some way revolutionary, especially insofar as egg hunters, "gunters," are literally pitted against a megacorporation who employ millions of avatars in pursuit of the egg, the reward for which is millions of dollars and control of the OASIS. However, it is the hunt's reliance on this cultural canon/capital that undermines its revolutionary potential, its potential to mobilize a revolt against dominant hegemony, insofar as it merely rebrands the dominant hegemony. As Megan Condis argues, "*Ready Player One* reproduces the social system that produced it,

a social system in which true archetypal geeks are modeled on their progenitors: white males" (Condis 9). Insofar as this cultural canon is the text on which all of Halliday's tasks and tests are based, a canon most familiar to Western white males insofar as it reflects their cultural identity, it perpetuates the hegemony of white males even if in different terms. It may allow Wade to overcome his lack of economic capital to discover the egg, but only insofar as he embodies this white male ideal, that he is a product of this very capital.

Thus, Wade figuratively "pulls himself up by his bootstraps" by spending nearly every waking moment studying the cultural canon that is natural to and representative of him as a white male. In an innovative new rendition of the American Dream, but a rendition all the same, he overcomes his meager economic standing through hard work and devotion. But, in a pertinent reflection of the reality of this ideological snare, his identity as a white male is requisite to his ability to achieve this dream. "Aech," a black lesbian, hides her identity beneath a white male avatar in order to support herself as a professional sponsored gamer. Like Gibson's Molly, she is a "transgendered representation" insofar as she emulates masculine qualities rather than subverting the distinction between feminine and masculine or blurring racial boundaries. She explains to Wade that:

> "Her [Aech's] mother, Marie, worked from home, in an online data-processing center. In Marie's opinion, the OASIS was the best thing that had ever happened to both women and people of color. From the very start, Marie had used a white male avatar to conduct all her online business, because of the marked difference it made in how she was treated and the opportunities she was given.

When Aech first logged into the OASIS, she followed her mother's advice and created a Caucasian male avatar…A few years later, when she started attending school online, her mother lied about her daughter's race and gender on the application." (Cline 320)

Furthermore, the rest of Cline's main characters and the final contenders for Halliday's egg keep the appearance of their avatars identical to their physical selves, fixing only their flaws. For example, Wade makes his avatar's nose smaller, his body thinner, and does not recreate his acne, while Art3mis' avatar is identical to her physical appearance, except that she does not replicate the birthmark that stretches across half of her face (Cline 28 and 291). While Daito and Shoto look nothing like their avatars, they at least retain their sex and ethnicity. Aech, whom Wade continues to refer to as "he" within the OASIS suggesting that the Aech he has met in real life and the one he has known for years virtually are not the same individual, is the only one of Cline's main characters that drastically changes her appearance so that it is no longer representative of her identity as a black female, suggesting that these aspects of her identity are, in themselves, flaws to be corrected.

Insofar as a "real" virtual reality of this magnitude would likely have its origin in video games (e.g. simulation games like The Sims franchise, Runescape, Guild Wars, World of Warcraft, etc.), and indeed, current virtual reality innovations are funded by their application to video games and films, it is fair to assume that it would replicate gaming culture and the culture of those who can afford the initial expensive investments in virtual reality systems. While perhaps the canon would eventually expand, as has happened with the literary canon, it would still be founded in the dominant hegemony of

global, capitalist, white patriarchy. Additions to the cultural canon representative of the rest of a virtual reality's inhabitants would be, as they are in real life, peripheral.

Thus, just as in *Neuromancer*, this virtual future does not blur any boundaries so much as it reinforces them to detrimental ends. If all people of color and women concealed and abandoned their identities in favor of more privileged identities, then those identities would eventually cease to exist, along with others that are dependent on gender and race. While the erasure of all essential identities is not necessarily damaging, and indeed may actually be beneficial, as Haraway argues, the erasure of certain identities in favor of privileged identities, or certainly, a single identity is unquestionably a dystopian prospect akin to the eugenics movement's project to create a master race. The novel further accentuates the importance of white male identity in achieving the American Dream or overcoming economic strife in that, if it were not for Aech's gaming career, she never would have been able to afford to make the progress that she did in the hunt for Halliday's egg, as it costs money to acquire items and to travel to the different planets across which the hunt is spread in the OASIS. Furthermore, out of the diverse cast of the main contenders for Halliday's egg, it is the white male in both real space and virtual space, Wade/Parzival, that achieves this gamified "Holy Grail." While the possibilities within the OASIS seem endless, it is still a program with social, cultural, and economic parameters as hardcoded into its virtual world as they are in the "real" physical world.

These parameters are further concretized through Cline's privileging of the construction of the heterosexual couple above any discourse concerning the changes Parzival, Art3mis, or Aech could make to the OASIS to ensure that it is accessible and equitable to all, or how they would utilize the reward money to "fix" Earth, as Art3mis

had planned to do if she won, or to build a rocket ship to leave the planet, as Wade had considered. Despite Art3mis's noble and safeguarded incentive to win the egg, this prospect vanishes from the end of the novel once Wade has won the egg with the help of his friends, which inspires him to split the winning equally among the final contenders. Insofar as the final four could not have reached the end without the help of the gunters that gathered to defend them against the megacorporation Innovative Online Industries (IOI), Wade might logically extend a portion of the prize to them, as well. The ultimate dismissal of the gunter community's collective action to prevent the corporate takeover of the OASIS eerily echoes the continual dismissal workers' resistance by labor, socialist, and other party leaders who betray the collective resistance of workers by accepting only palliative, rather than revolutionary or revisionary, reforms for personal gain.[16]

The Matrix

The Matrix franchise, written and directed by the Wachowskis, is perhaps the most popularly familiar depiction of virtual reality and mind uploading. These films portray a vastly different impetus for simulated reality's development than either *Ready Player One*'s OASIS or *Neuromancer*'s matrix. The Wachowskis' matrix, the simulation to which humans are connected, is not a direct product of capitalism. Rather, it is its by-product, a product at a remove, in that it is the consequence of the humans' creation of artificial intelligence. In their conceptualization of the technological singularity, the Wachowskis posit a future in which robots have overthrown their human creators. Because they attempted to disrupt the machines' solar power by blanketing the sky with

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[16] For detailed examples of the demeaning of laborer's resistance, see: Sharon Smith, *Subterranean Fires: A History of Working-Class Radicalism in the United States*, Haymarket Books, 2006.

thick clouds, humans now function as batteries for the robots who harness their thermal

energy and bioelectricity. To prevent revolt, they lock humans' minds into a simulated

reality, completely obscuring their true reality, while their bodies generate energy within

womb-like pods.

Needless to say, *The Matrix* films depict perhaps the most dystopian

conceptualization of virtual reality of the three examples presented in this paper. Yet, it

simultaneously posits a wealth of subversive potential inherent in simulations. Like the

OASIS, the matrix's purpose is to delude an entire species into submission, docility, and

obedience, though this purpose was not intended by Halliday, the creator of the OASIS.

In this way, the Matrix comes to embody Louis Althusser's notion of ideology, as

ideology's purpose is to make its subjects complicit in their own control and surveillance

so as to exert control over subjects without provoking revolt.[17] When Morpheus first

explains the Matrix to Neo, he references the institutions that Althusser claims function

as ideological state apparatuses, such as governments, churches, popular culture, and

media:

> "The Matrix is everywhere. It is all around us. Even now in this very room. You
>
> can see it when you look out your window or when you turn on your television.
>
> You can feel it when you go to work, when you go to church, when you pay your
>
> taxes. It is the world that has been pulled over your eyes to blind you from the
>
> truth."
>
> "What truth?"

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[17] See Althusser's "Ideology and Ideological State Apparatuses."

"That you are a slave, Neo. Like everyone else you were born into bondage, born

into a prison that you cannot smell or taste or touch. A prison for your mind."

(The Matrix)

The Matrix, then, literalizes ideology. Ideology, like the matrix, imprisons the

mind to the extent that it predates the subject and informs subject formation. We are, in

Louis Althusser's vocabulary, interpellated. There is no outside of ideology; all is

contained within it. The very languages that we speak and use to conceive all of

existence are produced by and reproduce ideology. The Guardian recently published an

article about "An artificial intelligence tool that has revolutionized the ability of

computers to interpret everyday language [and which] has been shown to exhibit striking

gender and racial biases," which suggests that any artificial intelligences we create will

form the same ideological precepts as whatever culture produces them (Devlin). Every

notion about ourselves derives from an ideological construct. We do not produce culture,

but rather, culture is inscribed on our bodies and minds, and we reproduce it; we are born

into it and are slaves to it, just as humans are to the Matrix. Thus, Morpheus aptly

describes what remains outside of the Matrix, and thus outside of ideology, as "the desert

of the real" (*The Matrix*). The figurative frontiers outside of ideology, of The Matrix, are

disordered, chaotic, and barren.

The totalizing nature of the matrix, however, renders it slightly less insidious than

the virtual spaces of either *Ready Player One* or *Neuromancer,* which exist as extensions

of realities so entrenched in oppressive ideologies as to become inseparable from them;

indeed, it is less insidious than the ideological institutions that currently exist. While at

first the totalizing simulation of the matrix seems a bleaker, more hopeless prospect than

a virtual future in which users voluntarily jack in and out of a simulation, The Matrix's all-encompassing nature localizes all oppressive forces into a single, recognizable system. Once humans swallow the red pill, the simulation is revealed in its entirety. Ideological apparatuses and physical repressive apparatuses congeal into one undeniable locus against which humans are able to revolt, if they so choose. Unlike the many, proliferating, entangled and intangible ideological apparatuses that pervade and constitute our "reality," the localization of all human control to a single apparatus, The Matrix, allows humans to trace any notion taken for granted as true, any notion that defies questioning, back to this single locus of control and to reveal it as a method of control rather than an essential truth. The Matrix is thus a double-edged sword: we could all be living within The Matrix and not know it, and we would have very little way of knowing it; but if we came to know it, we could know all and defy all systems of control.

There is, then, a sort of power inherent in The Matrix for humans, despite its use against them, and this power is derived from its complete usurpation of and separation from reality, from the fact that it is no longer dependent on or informed by the "real" world. This assertion may at first seem misinformed, as The Matrix replicates exactly the world at the end of the twentieth century, just before "…all of mankind was united in celebration. [Marveling] at our own magnificence as we gave birth to AI…A singular consciousness that spawned an entire race of machines" (The Matrix). The Matrix thus replicates the ideology of that period, a period whose reality is as deeply entrenched in ideology as any other. Yet, because that reality no longer has a concrete, physical, "real" analog, because it no longer reciprocally interacts with the "real," it is not obliged to it. The simulation is not founded in any "essential truth(s);" it has no basis in nature that,

once humans swallow the red pill and see that their reality is constructed, confuses them as to which pieces of The Matrix are real and which are simulation. Paradoxically, The Matrix's subversive potential is that which allows it to obscure reality: its constructed nature and complete rejection of reality.

"Reality" is the basis for essentialism. The belief in Reality substantiates the claims that disparate ideological beliefs are all essentially true, that they all are embedded in nature, that they are not simply beliefs, but "fact." Yet, our very ability to comprehend and convey fact is both obscured and limited by our very language.

Inversely to The Matrix, then, rejecting Reality is the only way of rejecting ideology and of reclaiming our subjectivity and the process of subject formation. By choosing to permanently remove ourselves from Reality and all of its constituents, including our own bodies (and our planet and physical universe) on which Reality/Ideology inscribes itself, and choosing to occupy a reality that never obscures but makes always already apparent its non-reality, its simulative and virtual nature, we may reach the kernel of true selfhood that Butler and Althusser posit does not exist, in that a subject is always already interpellated and cannot predate culture's inscription.

Of course, this is somewhat optimistic; humans would have to create this reality insofar as it is separate from and supplants nature. Thus, virtual futures cannot escape ideology. Still, the recognition that all that exists within a simulation is ideology would allow humans to reject the ideology, to bend it and blur it. When humans in *The Matrix* swallow the red pill, when they become aware of the non-reality of the Matrix, they can then learn how to manipulate the physics on which the simulation is based, to bend its laws, and ultimately, to overcome the agents that enforce its laws and become impervious

to the mental and bodily penetration of ideology. Neo literally prevents its penetration when he stops the bullets that three agents fire at him, leaving them to levitate in midair. He plucks a bullet from the volley, and after dropping it, the rest fall to the ground. When he looks around, the simulation is revealed for what it truly is: mere sequences of code. He then infiltrates the bodies of the agents capable of infiltrating any digital manifestation of any human—thus, reversing subject and agent/object, penetrator and penetrated—and destroys him from within (*The Matrix*).

While the simulation cannot escape the ideology out of which is what created, the recognition of the simulation as ideology allows humans to overcome its constrictions and prescriptions and to not merely replace them with some other ideological mechanisms, but to rewrite the ideology individually, multiplying and pluralizing meaning and meaning making. Yet, a simulated reality also renders possible the reconciliation of the individual and collective, the distance between which has increasingly polarized humanity since the Reformation.[18] Neo's last words underscore this multiplicity and the role of the individual within a collective world:

> "I know you're out there. I can feel you now. I know that you're afraid... you're
> afraid of us. You're afraid of change. I don't know the future. I didn't come here
> to tell you how this is going to end. I came here to tell you how it's going to
> begin. I'm going to hang up this phone, and then I'm going to show these people
> what you don't want them to see. I'm going to show them a world without you. A
> world without rules and controls, without borders or boundaries. A world where

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[18] See Larry Siedentop, *Inventing the Individual: The Origins of Western Liberalism*, Harvard UP, 20 October 2014.

anything is possible. Where we go from there is a choice I leave to you." (The

Matrix)

Real Vs. Virtual

Despite their differences, these texts share one fundamental tenet: the exaltation

of the return to the "real" over life in virtual spaces. Yet, each text also shows its

protagonists returning to a bleak, ravaged, dying and degraded reality that, as of the ends

of the novel or film, they have no means of escaping. After Wade/Parzival possesses the

egg—officially lifting him and his friends from the clutches of poverty both within the

OASIS and without—resurrects his friend's killed avatars, and physically meets his long-

time virtual sweetheart Art3mis/Samantha in *Ready Player One*, he states: "It occurred to

me then that I had absolutely no desire to log back in to the OASIS" (Cline 372). Despite

his world being in ruins while people are living in trailers that they share with twenty

other people in stacks twenty trailers high, Wade, having risen above such a living

situation himself and having found love, no longer requires the OASIS. His rejection of

the OASIS after stumbling upon staggering wealth reveals Cline's virtual reality as

merely palliative; a distraction for the poor, oppressed, and hopeless.

Likewise, though the mind is privileged over the body in *Neuromancer*, Case

simultaneously privileges the real over the virtual: when Neuromancer attempts to seduce

Case into living inside of the matrix with his dead but possibly digitally resurrected

girlfriend, Linda Lee, Case chooses to return to the physical world. The novel's ending

does, however, suggest a sort of ambivalence about his return. While logged in to the

matrix, Case glimpses himself, his girlfriend, and Neuromancer, suggesting that

Neuromancer created a copy of Case that now lives in the matrix indefinitely. Thus,

Case exists in both spaces, as both a physical and virtual entity. Though he chooses to return to the "real," he also cannot escape the simulation. Furthermore, once resigned to the real world, Case undergoes surgery to restore his body's ability to metabolize and so be affected by drugs; he still seeks to escape from the physical conditions of the world, but through tangible, physical means.

At the end of *The Matrix* trilogy, humans are given the choice to leave The Matrix, and while the movie seems to favor a return to the real, it fails to acknowledge how humans would adapt to the environmentally devastated world that they are inheriting. Certainly, the humans involved in the overthrow of the machines celebrate the human species' release from captivity via The Matrix at the end of the trilogy, but the physical world is still in shambles and the sky still obscured, leaving the viewer to wonder whether or not the Earth is capable of producing a food source abundant enough to feed a possible influx of humans who will require a transitional period as well as muscle regeneration. Humanity, collectively becoming aware of their existence, will have to create new systems of organization amidst the chaos of a population explosion. The Matrix rejoices in the truth unveiled at the revelation of the "real" and in human freedom and choice without acknowledging the consequences of the return to the physical world. Thus, in its exaltation of the "desert of the real" over cyberspace, the film devalues virtual existence despite also offering a reading of cyberspace as a tool to subvert systems of oppression, to overcome constrictive ideology/Reality.

While these depictions of cyberspace ultimately disparage or devalue cyber existence, each of these texts shows us what virtual reality cannot be if it is to improve our lives rather than simply save them. Additionally, they provide glimpses of what

characteristics a simulated reality with subversive potential and the potential to create a positive, progressive future might possess. While both *Neuromancer* and *Ready Player One* depict cyberspace as a product of late capitalism that inures humans to the violence of the marketplace as well as the environmental degradation that threatens their wellbeing, Cline suggests some ways in which a virtual future could improve individual conditions within in a world ravaged by poverty.

The OASIS, for example, allows everybody with access to a console access to an education that far surpasses that which they are able to receive in physical classrooms. Teachers, no longer charged with acting as disciplinarians or babysitters, can spend their time actually teaching (Cline 47). Because the schools are software, they are not financially constrained or even beholden to the laws of physics and so become "grand palace[s] of learning," with "polished marble hallways, cathedral-like classrooms, zero-g gymnasiums, and virtual libraries containing every (school-board approved) book ever written" (Cline 31-32). Even so, teachers may spend little time within the pseudo-physical confines of the classroom because of the ease of taking students on virtual field trips that are far more stimulating than simple lectures. Cline presents a vivid example of what a day inside a virtual classroom could look like:

> "During our World History lesson that morning, Mr. Avenovich loaded up a stand-alone simulation so that our class could witness the discovery of King Tut's tomb by archaeologists in Egypt in 1922 AD…
>
> In my next class, Biology, we traveled through the human heart and watched it pumping from the inside…
>
> In Art class we toured the Louvre while all of our avatars wore silly berets.

In my Astronomy class, we visited each of Jupiter's moons. We stood on the
volcanic surface of Io while our teacher explained how the moon had originally
formed. As our teacher spoke to us, Jupiter loomed behind her, filling half the
sky, its Great Red Spot churning slowly just over her left shoulder. Then she
snapped her fingers and we were standing on Europa, discussing the possibility of
extraterrestrial life beneath the moon's icy crust." (Cline 48).

Schools even issue OASIS consoles and visors so that no student's financial standing
impedes their access to an education. Furthermore, geographic location, school funding,
access to materials, etc. does not impede the quality of their education.

Unfortunately, this type of education is still restricted to school-age children who
meet a certain grade-point average, though this average is relatively low. With virtual
libraries and educational simulations available to all OASIS users, everybody with access
to the OASIS would have access to most media and books. Thus, regardless of race,
nationality, sex, disability, etc., anybody with access to the OASIS has within their reach
the whole of human knowledge. If somebody has a disability that might otherwise render
them unable to work, they can assume a digital body within the OASIS and attend
meetings, more easily hold and read books, handle and organize information, etc.
Despite geographic isolation, nobody would have to be socially isolated or rendered
unable to attend school or work. Additionally, while natural landscapes are fading from
existence, marred by environmental degradation as population growth causes urban
sprawl to encroach on nature preserves, simulations like the OASIS would allow users
geographically isolated from nature and natural landscapes to interact with the natural
world. For example, while eating lunch, Wade remains logged in to the OASIS as

"sitting in the green fields bordering the school, staring at the scenery while [he] munched on a protein bar," "beat staring at the inside of [his] hideout," an old van buried beneath a junk heap (Cline 47). Recent studies have found that representations of nature are almost as therapeutic as nature itself: "Like other researchers, Ulrich has found that simply viewing representations of nature can help. In a study at a Swedish hospital, for instance, he found that heart surgery patients in intensive care units could reduce their anxiety and need for pain medication by looking at pictures depicting trees and water" (Clay).

Access to material, planets, and simulations within the OASIS is limited, however, by social class. While access to the OASIS is free, transportation within the OASIS is not. Gregarious Simulation Systems (GSS) draws their revenue primarily from teleportation fees and charging for virtual fuel. Wade, for example, cannot leave Ludus, a planet comprised primarily of various schools, until he attains the first key, and in doing so, also attains valuable items and OASIS credit. Teleportation costs more than fuel because traveling within the OASIS is also dangerous, and traveling from one safe planet to another requires crossing into combat zones, where users risk allowing other users or non-player characters (NPCs) to kill their avatars. When a user's avatar dies, that user loses all items and OASIS credit, as well as any experience they have gained. Because OASIS currency is more stable than any real currency, death within the OASIS is devastating. Thus, users who cannot afford to travel within the OASIS reap few of the benefits of the virtual universe. Furthermore, the quality of a user's OASIS experience depends on the quality of a user's haptic technology and internet speed, both of which require sometimes substantial monetary investment. Even though the OASIS improves

quality of life in some small ways, it functions largely as a recapitulation of capitalist

social organization, as users are hierarchized based on class, which in turn reflects and

reinforces their class standing outside of the OASIS. Thus, before we can further explore

the possible benefits of living within a virtual reality, we must consider whether

cyberspace can accommodate or function as an alternative to current political systems

and other systems of organization.

III. Virtual Futures: Structuring Power

"I'm going to show them a world without you. A world without rules and controls, without borders or boundaries. A world where anything is possible. Where we go from there is a choice I leave to you." (The Matrix)

"We do not need a totality in order to work well. The feminist dream of a common language, like all dreams for a perfectly true language, of perfectly faithful naming of experience, is a totalizing and imperialist one. In that sense, dialectics too is a dream language, longing to resolve contradiction." – Donna Haraway

As *Ready Player One* proves, the meager palliative benefits of the OASIS can only superficially improve the conditions of its users. As *The Matrix* proves, virtual reality can only radically revise human existence if it demands a substrate shift, a divorce of itself and its users from physical reality and the ideology that founds itself on this reality. Without a radical revision of human social organization, living conditions will continue much as they are. Supplemental virtual reality, much like small political reforms that effect small, gradual changes to the system but fail to address the failure of the system as a whole, can only alleviate suffering enough to placate sufferers, to distract them from demanding change. Thus, before we begin to explore the myriad ways virtual reality can alleviate and enhance human experience, we must first explore potential manifestations of virtual reality that can affect the ways in which we structure power and how it might affect the structure and organization of power. Without a radical revision power discourse, all other benefits of virtual reality become superficial.

In a recent Big Think video, Slovoj Žižek posits that the recent wave of populism in both the United States and elsewhere results from the vacuum in the political left after the fall of communism. He states, "I would sell my mother into slavery to see a movie

called *V for Vendetta* Part II," proposing a sequel to the film in which English citizens collectively gather against the state and overtake parliament. "Okay, guys," Žižek continues, "People took over. What would they have done a day later? How would they reorganize the power? …How would they restructure the power?" (Žižek). Žižek draws on this film to illustrate his point that "…the ultimate cause of all of this populism and so on…is the left doesn't have a model; it's all empty praises. People should decide more through democracy, blah, blah, blah, but what does it mean? …How [do we] re-organize the state?" (Žižek). Having established the foundation of his argument, Žižek advances two critical points.

First, while the left advocates for a diffusion of power, Žižek warns that "The majority is not automatically right," nor does it share the principles of that same political left that argues for the majority's empowerment. Furthermore, that majority's opinions may be so disparate and diverse that the "majority" may constitute only a small portion of a populace; there may never be, as I argue in the introduction, a significant portion of a population in agreement. Here, Žižek draws on a right-wing critique of Angela Merkel after she decided to welcome one million immigrants into Germany, despite the resistance of the majority: "Where is her sense of democracy?" (Žižek). To Žižek, Merkel's actions and the resultant criticism demonstrates that democracy, that heeding the voice of the majority, does not ensure ethical action, thus legitimizing a "mistrust…of the will of the majority." This leads to his second critical point or opinion: that "the big task today is precisely to reinvent large scale very strong social, political agents [or] structures with strong authority," and he seems to propose this as a defense against corporatization, as a means of regulating unmitigated corporate power and control. Žižek

mentions that humans are approaching the ability to reconstruct man through biogenetic interventions; who, he asks, will regulate this?

Many sci-fi narratives envision the world at the end of humanity's reign as ruled by corporate entities. In the era of globalization, multinational corporations are able to transcend shaky geographic and cultural/ideological state boundaries and to exercise power based solely on profit, on capital, without adhering to religious, ideological, or moral restrictions.[19] Diffusing power, rather than concentrating it in (a) large scale structure(s) that can rival the monetary power of multinational corporations, renders individuals incapable of regulating corporations. As Žižek points out, the idea of consumer power, of exerting power through purchasing practices, is largely ineffective; it is a corporately-devised distraction. Thus, insofar as the left suggests only a diffusion of power, there are, as the title of the video suggests, "no viable political alternatives to unbridled capitalism" (Žižek). At the end of the video, Žižek even points towards Hollywood science fiction narratives, as a clue to what is coming. "I always trust Hollywood," he states. "Hollywood is warning us all the time: Hunger Games, Elysium, and so on. That's the society we are approaching. Twenty percent of people live in the privileged zone, [and] the majority is out. That's the future" (Žižek).

Yet, while I agree that the left currently presents no viable political alternatives, Žižek here only recapitulates the twentieth century binarism between the state and democracy and the centuries old binarism between the collective and the individual. Both dualisms merely reinvent totalizing master narratives that pit two opposing forces

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[19] States can try to embrace diversity, but in doing so, risk alienating citizens whose stated-based identity relies on a strict conception of their state as possessing particular cultural, religious, or ideological characteristics.

against each other in eternal battle, suggesting that there are only ever two options, particularly in our increasingly globalized and assimilated world. Perhaps Western thinking's foundation in binaries is based on our conceptualization of life versus death and of life versus the afterlife. Some Eastern master narratives blur this distinction; there is life as a human, death, and then life again, whether animal or human. If we further blur this distinction so that it becomes not only possible for a human to live and die and then to live again as animal, but to live again as a machine or within a machine entirely devoid of a physical body outside of a microchip, or to never die at all, then perhaps it will become possible for us to unlock ourselves from the strict constraints of binary thought.

Donna Haraway embraces the metaphor of the cyborg as a "powerful infidel heteroglossia," capable of producing "a way out of the maze of dualisms in which we have explained our bodies and our tools to ourselves" (Haraway 2299). She suggests that technoscience and the conflation between animal, human, and machine is truer to reality than "the production of universal, totalizing theory…that misses most of reality," such as that to which Žižek seems to subscribe (Haraway 2299). While Žižek here deals with political structures, particularly political structure informed by class and capital, and Haraway deals with identity, class and identity interact, they inform one another, and they are commensurate. I agree with Žižek that power diffused among a population cannot compete with power concentrated in the hands of corporations that possess immense capital in a political structure driven by the possession of capital. Yet, power concentrated into a large state structure, as Žižek suggests, will inevitably produce a totalizing structure that misses the reality of the people who submit their power to this state.

Mind uploading and virtual reality present a solution to this dichotomized narrative. Whereas we seem pitted between serving our individual selves or serving humanity, holistically a system like The Matrix (that we humans, rather than robots, control) could be at once both totalizing and individualizing. Žižek rightly argues that the "majority is not automatically right," and indeed, the majority is often ill-informed, scared, and in their fear, self-serving. As Althusser argues, ideology feeds ourselves and our opinions to us, and it keeps us subservient and submissive to existing structures, to dominant, totalizing hegemony. In this sense, the multiplication of language, of identity, of theories and narratives becomes imperative. Yet, it also risks disorganizing our collective power, as it multiplies the loci or the axes along which we align ourselves. We can collect, as Haraway suggests, according to affinity rather than identity, but insofar as we collect against something, we face the same situation as the English citizens who toppled parliament in *V for Vendetta*. Whose ideology replaces the dominant hegemony (Althusser 1488)?[20] Who produces a new totalizing structure with a totalizing theory that cannot possibly capture the whole of humanity and reality?

Divorced from our precarious reliance on material resources, from the "essence" of nature and biology, perhaps human thought could transcend the binaries that constrains it. Divorced from geography and physical edifice, perhaps power could diffuse; perhaps it would not require ideology to maintain it because it would not need to be maintained. Perhaps it could flow more freely through a collectively inhabited integrated circuit if the

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[20] Althusser argues in "Ideology and Ideological State Apparatuses" that the proletariat must seize State power, replace it with "quite a different, proletarian, State apparatus" before "set[ting] in motion a radical process, that of the destruction of the State" (Althusser 1488).

loss of power were not commensurate with death or suffering, with the inability to fulfill one's biological needs and imperatives.

Virtual reality could manifest in infinite ways. It could be an exact replica of the world in which we currently live, work, interact, exchange goods, and struggle to survive. We could replicate exactly our laws of physics, our environmental, political, and social situations, the age of our sun, the asteroids aiming for our planet, etc. Or it could look something like the OASIS or *World of Warcraft* or *Runescape* or *The Sims*. It could replicate the earth and the universe at exactly the moment that human species began to evolve; we could abandon all hope for ourselves and see if humanity might turn out differently a second time. We could replicate, as in The Matrix, the age that we believe to be the pinnacle of our species' existence. Or a virtual reality could be all the possibilities at once. Like the OASIS, we could all inhabit different planets within our simulation, or flit between different servers that all contain the same simulation made different by those who choose to inhabit it. Virtual reality does not demand we agree. It is open to plural narratives, to the multiplication of identity. It does not demand a single future or a single reality. Everyone could inhabit their own, individually created reality, if they so choose.

No matter how it manifests, virtual reality has the unique ability to make undeniably, tangibly visible what is invisible. I proposed that The Matrix was at once the ideology and key to escaping ideological hegemony. Think again of Neo seeing The Matrix as code, the laws of his reality manifesting before his eyes. If we were to inhabit a virtual reality, we could have this same ability. The "nature" of our world could be always readily visible to us: strings of code replacing patches of brickwork in buildings,

etched into palm leaves, or visible in DNA sequences under a microscope. We could

switch between seeing the world as we have programmed it to be and the program itself.

We could, as Jeff Vandermeer suggested of augmented reality, allows ourselves to see

the "natural" laws that underpin the world we have simulated, the particles and elements

that constitute the mainframe that holds our simulation and simulated selves. Our

ideology could be always already apparent, and we could always already question

everything. For example: is my religion, my sex, my gender, my race, or my humanity

itself programmed or are these characteristics reality? Unlike in the OASIS, the

egalitarianism of a virtual reality separated from biology does not necessitate the

relinquishing of identity. Rather, it forces us to question the difference these

characteristics make. Are they a true difference at all? Are they even true? It reveals

that truth is merely programming; it is only what we conceive and code it to be.

Finally, returning to Žižek's admonition that "the majority is not automatically

right," I posit that in a virtual future, they could be, if not right, exceedingly more

informed than they are now. The most egalitarian virtual future that I can envision is one

in which every inhabitant of the simulation has equal say in the programming of the

simulation; each person's equal ability to affect the world hardcoded into and

unchangeable within the programming itself (excepting, perhaps, our individually

possessed realities or planets). At first, drawing on Žižek's argument, this seems to

exemplify his assertion that fully realized democracy is exceptionally dangerous. This

seems terribly disorganized, out of control, and terrifying. Yet, the same virtual reality

that allows this democracy also allows unparalleled equality both in its ability to expose

hegemonic ideology and its ability to imbue every consciousness with equal knowledge,

or at least, to allow equal access to all knowledge and all perspectives. Information could be downloaded directly into people's consciousness. Like in Mixon's *Glass Houses*, individuals in the simulation could experience others' consciousness, assimilating differing perspectives and different conceptions of being based on gender or race into their one consciousness, while still remaining an individual and exerting an individual will. This will, however, would be more informed, more sympathetic, more considerate of the collective without being forced to submit itself to the collective, as in Žižek's answer to unbridled capitalism. Thus, mind uploading uniquely creates a truly informed majority all of whom literally have equal "say" coded into a virtual simulation. We could all at once retain our individual consciousnesses while belonging to, or having access to, a collective consciousness that echoes the Buddhist conception of the non-self, a "non-manifestative consciousness;" in essence, of omniscience (Walshe 242). All languages, literal and figurative, could be made common without the imperialism that Haraway fears; our common language could be, and must be, the culmination of all languages.

IV. Conclusion

The purpose of this project is not to create a totalizing theory of virtual reality and what it can or should be. In that this brief essay is part of a larger, ongoing project, I make no claims to address all ethical concerns or all possibilities of a virtual future, the opening up of human consciousness, the pluralizing of human identity and reality, or blurring the demarcations between individual subjects. Rather, my aim was simply to implore readers, thinkers, writers of the future and of science fiction to envision this future, to explore its possibilities not merely to alleviate or distract from dystopian futures, but to radically revise the future. The proliferation of dystopian science fiction both presents and perpetuates a resignation to the collapse of our planet's ecosystems, its biodiversity, and consequently, of civilization itself.

Yet, though it is perhaps intended to warn humans that our future, if we do not actively fight to change it, will be bleak, it also serves to inure us to environmental devastation and the conditions that produce it. There is a two-way street of interaction between literature—rather, between all media—and the culture that produces it. While literature reflects the world, it is also a site through which we negotiate and write the world. If the discourse concerning climate change and its depiction in various media may be desensitizing us to it, perhaps the solution is, rather than portraying the inevitable, to imagine what is possible; to excite ourselves in the imagining of innovative solutions that address not only climate change, but the myriad other social, political, and even medical problems we face. Or, perhaps the solution is to tap in to our human drive to migrate, explore, and discover, or our desire for immortality and eternal youth. Perhaps the

solution is to imagine a solution, a future, that renders all of these considerations insignificant. Perhaps the solution is a virtual future.

To this end, I will present some questions concerning mind uploading and virtual reality that myself and others can perhaps speculatively answer in the near future. Hopefully, our speculations can soon after be corroborated, qualified, or discredited. My goal is not to be correct, it is merely to generate a conversation about the possibilities of virtual reality and about our ability to solve the political, social, and environmental problems we face. I hope that this project has raised as many questions as its argument has attempted to answer.

To conclude, I will explicitly raise just a few more questions that I or you or someone else can someday answer: If capitalism and development are the impetus for the realization of uploading our minds to a virtual reality, how can we overcome this impetus to realize a more egalitarian future? In addition to realizing immortality, how can abandoning our biological bodies and inhabiting a virtual realm benefit us medically? Along with increasing our access to information, how might uploading our minds to a machine affect the way that humans learn?[21] How might humans living in a virtual reality form their own subjectivities and identities? How would it change the ways that humans interact? How might it enable us to explore the cosmos more easily? What would a mainframe storing all of humanity look like, and how might it function?

Innumerable questions remain to be asked; even more to be answered. As we address these questions, I hope that we also consider how the answers might bear on our

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[21] Consider the way that children's brains form new neural connections when learning new information, whereas adults incorporate new information into existing neural structures.

present as well as our future. Many scientists and philosophers suggest we may be living in one now (Bostrom 243). If we look closely enough, perhaps we can see the code underlying our existence and begin to question our natural assumptions about our biology and what it means to be human. Perhaps we do not have to overcome our biology before reaping some of the benefits of uploading our minds.

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