

Disentangling the Posthuman: Broadening Perspectives of Human/Machine Mergers through
Inter-relational Subjectivity

by

Judy Ehrentraut

A thesis

presented to the University of Waterloo

in fulfillment of the

thesis requirement for the degree of

Doctor of Philosophy

in

English

Waterloo, Ontario, Canada, 2019

© Judy Ehrentraut 2019

Examining Committee Membership

The following served on the Examining Committee for this thesis. The decision of the Examining Committee is by majority vote.

External Examiner	Dr. Isabel Pedersen Title: Associate Professor
Supervisor	Dr. Marcel O’Gorman Title: Professor
Internal-external Member	Dr. Daniel Vogel Title: Associate Professor
Internal Members	Dr. Aimée Morrison Title: Associate Professor
	Dr. Neil Randall Title: Associate Professor

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

In the conclusion of *How We Became Posthuman*, N. Katharine Hayles states that the terror of posthumanism comes from its dual connotation of superseding the human and coming after it, implying that the days of being human are coming to an end. Certain branches of posthuman discourse suggest that the intersection of humans and advanced technologies has already resulted in the dissolution of essentialist understandings of the human to make way for the posthuman. While some theorists interpret this emergence as marking the human's fall and subsequent rise as a transcendent being imbued with technological adornments, others rightly see it as the disbanding of the human of Enlightenment philosophy. Yet as this dissertation argues, even iterations of posthuman thought that attempt to reject anthropological and sociocultural essentialisms inadvertently re-affirm humanist ideologies. This is mainly due to normative and dogmatic ideas about technology's place in the human world that frame it as dehumanizing and oppositional on the one hand, or transcendent and empowering on the other. In both cases, the human/technology relationship is pre-coded by the assumption that technology gesticulates a dislodging of "natural" human purity, which encourages the fear that human agency predicated on self-possession is at risk.

Engaging with the works of Hayles, Rosi Braidotti and Karen Barad, I propose that agency is not something one possesses, but an outcome of entanglements where identity is formed when the subject recognizes difference over assimilation. My contention is that humans typically approach potential connections with technologies as opportunities to extend the individual unitary self, rather than exploring the self as open, incomplete and always emerging. When technology is perpetually seen as an intrusive addition to the human, a false dichotomy develops where authentic self-representation is endangered by technological mediation. As well,

the rhetoric that technology possesses the power to make us “more human” (Case 2010; Hauskellar 2013; Taylor 2011; Casey 2013) frames it as a vehicle with which the normative able-bodied human elevates its control over the world. Thus, in response to the increasing demonization of communication technologies, my critique of digital abstinence initiatives reveals the ableist, racist and classist underpinnings that discount the varied ways all humans entangle with artifacts to participate in subject-making.

Rather than theorizing how posthumanism represents the promises of technological extension, I evaluate the underlying exclusions that assign certain humans as lacking and needing improvement. Building on Braidotti’s ethics of becoming and the movement from a unitary to nomadic subject, my conception of “inclusive posthumanism” disengages from the idea that the human’s purpose is to progress. By rejecting individualism and self-interest to promote a larger inter-relationality with other human and non-human artifacts, I see the inclusive posthuman as an opportunity to theorize subjectivity as a decentralization of the human’s role within a larger system. This both recognizes the human’s importance without implying its obliteration, and offers constitutions of a collective self that is uncovered through chance encounters.

Acknowledgements

First and foremost, I need to thank my family for their limitless patience while I completed this PhD. None of you quite understood what I was doing or why, but you were all on board from the beginning, and I can't thank you enough for being there throughout my journey and continuing to encourage me for all these years.

I'd also like to thank the English department at the University of Waterloo, and my supervisor Dr. Marcel O'Gorman for his long-standing support of my research, going back to my second year where he oversaw me in a directed reading course where I wrote my first book chapter that ultimately helped shape this dissertation. Thank you for helping me train for this marathon, and for including me in the Critical Media Lab's many ventures in its many locations. I'm especially grateful that I was able to host the Posthuman Film Club (and thank you from the bottom of my heart to everyone who attended, no matter how weird the films were). Thank you to Dr. Neil Randall for his unwavering support dating back to my first year in the program, and through the many changes this project went through. A big thank you to Agata, the VR Working Group and everyone at the Games Institute for giving me the green light every time I proposed a research project. Also, thank you to Dr. Aimée Morrison for her invaluable insights and for helping me take on a very challenging but necessary perspective in the later stages of writing.

A profound thank you to my many friends in Toronto, Kitchener, and Hamilton. I couldn't have done this without you. Thank you all for letting me spend the night whenever I needed to, for helping me take the breaks I desperately needed to take, and for excitedly asking me how the work was going every time I showed up to things. You made these last few years easier and helped me see the importance of work/life balance. I'm forever grateful for the music, the forest, and the good vibes. Lastly, thank you to Bean, who was there the whole time.

Table of Contents

Introduction: Technology for the People	1
Chapter 1: The End of the Human: Extricating Posthumanism from Humanism	25
Chapter 2: Bad Posthumanism and Fearful Wish-Fulfillment: Androids, Cyborgs, and Uploaded Consciousness	57
Chapter 3: The Promise of Mobile Telephony: ‘Real’ Connections and Individual Spaces of Control	90
Chapter 4: Assembling with Technology: Considering the Incomplete Body	133
Chapter 5: Unpredictable Encounters with the Technological Kind	169
Conclusion: Future Speculations of the Human in a Posthuman World	208
References	222

Introduction:

Technology for the People

We need to become the sorts of subjects who actively desire to reinvent subjectivity as a set of mutant values and to draw our pleasure from that, not from the perpetuation of familiar regimes.

Rosi Braidotti, *The Posthuman*, 93

“Mobile phones, once created to connect, are now putting more distance between us.”

This is what a European start-up company called *Mudita*¹ believes is the greatest consequence of telecommunication technology, an otherwise exciting cultural enterprise that has put all the world’s information at our fingertips. As their mission statement explains, “this paradise of endless options is turning into a hell of anxiety” because people can no longer enjoy moments of solitude without incurring boredom. As a solution, *Mudita* advocates “technology of the present moment” intended to “bring balance and quality to your life.” They advertise “humane products that put well-being first” by creating a minimalistic phone that blocks apps and has a screen made of electronic ink to reduce eye strain. The product claims it “supports your conscious use of technology” and is “inspired by your wise choices.” It is intended to bring smartphone usage back into the control of the individual, helping users “find deeper focus, get more done and build authentic relationships” (*Mudita*).

Mudita is not the first company to try to solve the problem of attention deficit by reducing smartphone functionality, and their product is merely symbolic of a larger mindfulness

¹ “Mudita” is a Sanskrit word that roughly means “sympathetic or unselfish joy in the good fortune of others. . . . English-speaking teachers broaden the definition of *mudita* to include ‘empathy’” (O’Brien).

movement that Silicon Valley has been popularizing for over a decade.² *Mudita* advocates for meditation practice as a pathway to self-awareness that can only begin by alleviating distraction and regaining control of our devices. Yet despite their campaign for mental calmness, the underlying message is carefully centered on efficiency. *Mudita* juxtaposes smartphone mobility, which has allowed us to “finally fulfill all our potential and make profitable use of every minute,” with a new social model that encourages a repossession of our time and energy so we can accomplish more. With this comes an understanding of agency as something we must also possess, predominantly over the very devices now thought to be holding us back. But what exactly are we being held back from, and why does the conversation begin with the design of these devices, rather than on their societal conception and cultural use?

The Cyborg Conversation

When we speculate about the seamless integration of pervasive devices and human life, we are engaging in a conversation about modern-day cyborgs, whether we realize it or not. A person may claim they can barely tell the difference between their hand and their mobile phone, and wonder what measure of authenticity and human experience they lose through digital engagement. Their conversation partner might remind them we have always been cyborgs, for the distinction between organic and inorganic has always been blurred, as Donna Haraway tells us in her 1985 manifesto. Despite this awareness, the proverbial “cyborg conversation” is often informed by a debate over the differences between natural and artificial, and whether advanced technologies are contributing to the growth of that gap. The aforementioned conversation is a picture artist Sara Hendren paints in her article “Towards an Ethics of Estrangement,” where she claims that despite the boundary between humans and technology being consistently blurred,

² See Zen master Thich Nhat Hanh’s talk at Google Campus in Silicon Valley on Nov 9, 2011.

“drawing the distinction tends to be an instrument of domination” (2013: 53). In other words, we are comfortable with machines so long as we believe they are both different and subordinate to us, but speculating on this periphery can also be an exercise in confirmation bias. This is because as humans, we tend to approach both the hype and the fear of our relationship to technology with the expectation that machines exist to serve us.

Hendren notes the trend in technological research that has long been geared towards the functional range of devices, asking, “what will this allow us to do?” when what could be asked is, “what kinds of lives do we want?” (2013: 54). This is an important distinction, as the former is predicated on human extension through the instrumentalization of tools, while the latter offers a broader examination of technology in terms of quality of life. This second aspect formulates my approach to human/technology relationships in this dissertation, noting that quality of life does not necessarily center on “tools for enhancement” or even “tools for restoration” (2013: 56). Hendren uses these terms to differentiate between technologies that offer us ways to digitally manipulate environments, as opposed to technologies that replace lost functions. Both variations involve viewing technology as a tool that augments reality in some way by extending human will. Yet what if technology could be considered for its interactive and creative affordances instead of for its enhancement qualities?

The necessity of this question is informed by the fact that the human experience with technology is often framed through betterment and perfectibility. Devices are designed to pose solutions to problems, falling into what Hendren calls “narrow functionality traps” (2013: 62) that serve to empower users through what their technology can enable them to accomplish. In her work, Hendren approaches this issue from a disability standpoint, arguing how the varied ways people engage with their devices are ignored when certain technologies are coded to “allow”

disabled people to participate in society. “Assistive technology” represents a branch of medicalized technological design that Hendren thinks must be more socially-minded and inclusive, as all technology assists everybody in some fashion (2014). Yet technologies developed to maintain the status quo of normative productivity are not usually attentive to alternative experiences outside of total mastery. Though this dissertation is not centered on disability studies, Hendren’s proposal creates a valuable framework with which to assess the extensionist implications of the cyborg conversation. But before I set out to interrogate the idea of technology as extension, it is necessary to recognize the reasons and effects of the development and critique of technology as situated in relation to human progress.

Progress and Technoanxiety

In “Resistance is Futile: The Posthuman Condition and its Advocates” Langdon Winner points to a belief commonly held by progress skeptics: the domination of nature through technology for the betterment of humans has been doomed from the start. We are simultaneously threatened and fascinated by technologies that modify us while forcing nature to adapt to our consumption. Winner argues the once-terrifying vision of the “abolition of the human” (386) has become desirable the more we have begun to think of ourselves as living in a transcendent age of posthuman and transhuman futures. Despite their frequent interchangeability, these two terms are not synonymous, a point I discuss further in Chapter 1 of the dissertation. For the time being, I will clarify that while posthumanism is intended to critique anthropocentrism, it often does so by proposing a new evolutionary path for humans that takes on the characteristics of transhumanism, an ideology involving the technological immortalization of humans.

Winner points to an acceptance amongst modern scientists and biotechnologists that see humanity’s continuous upward trajectory as unstoppable. Futurists including Marvin Minsky,

Ray Kurzweil and Hans Moravec, who see humanity as being in its infancy, advocate for the “radical retailoring of the human species and ‘progress’ toward a posthuman successor species” (Winner 388). With progress as the driving force for technological advancement, the abolition of the human has become an inevitable, acceptable outcome when coupled with the promises of the posthuman. Posthuman enthusiasts, whether they be scientists, businesspeople or technophiles, are invested in the prospect of a new frontier that will either be led by augmented humans or an entirely unique species. While for some, “the goal of ‘improving’ or transcending humanity is appealing simply because it is there to be done” (391), the enterprise of human perfection is acutely embedded in how we self-identify.

Writing in 1954, French sociologist Jacques Ellul envisioned autonomous technology that would function as “a buffer between man and nature” (1964: 428), meant to serve mankind in his quest for controlling the chaos of the known universe. Yet in this future, humanity’s framework for life would also become skewed to serve the “organized technical intermediary” that would result in “a new dismembering and a complete reconstitution of the human being so that he can at last become the objective (and also the total object) of techniques” (1964: 431). In 1964, Lewis Mumford similarly argued the “megamachine” would act as a manifestation of a technocratic society driven by advancement, “even though man’s vital organs will be cannibalized” (Mumford 453). These dire predictions, though somewhat unpopular and seemingly exaggerated at the time, represent a larger trend in anxieties that can be applied to technological advancements of today.

I would like to address two conjoining points in Ellul’s statement to clarify my own position, the first being the conceptualization of technology as an instrument in man’s pursuit of nature. Human progress has persistently been linked to the domination of other humans, non-

human species, and environments through the assistance and employment of modern technology. The accuracy of Ellul's assertion that humans are driven by their compliance to technique is not something I aim to definitively quantify in this project, but it does help to assess the cultural fixation on technology as a foreboding, unstoppable force. The philosophy of technology (phil-tech), as Don Ihde observes, has emerged from "under a somewhat dark cloud of technophobic colors" (113). He attributes this "congenital dystopianism" (113) to Ellul as well as to Martin Heidegger, for their views of technology as "a sort of transcendental dimension that posed a threat toward culture, created alienation, and even threatened a presumed essence of the human" (113). This is but one way dystopianism has historically framed technology as an invasive force that interferes with a presumed "natural" path of human nature, which has contributed to the rigid binary logic separating organic from inorganic, human from machine.

Mergers and Separations

Much of the tension surrounding advanced technological breakthroughs, from artificial intelligence to mentions of cyborgism regarding our usage of personal telecommunication devices, stems from this separation between humans and machines. Unlike the implications of the dualist Cartesian debate concerning the division of the human mind and body, our misunderstanding of the concept of merging has kept the human and technology categorically apart, despite proclamations that we are closer to machines than ever. Today, the human/technology relationship is being continually redefined through the merging of nature and artifice in an attempt to disintegrate the boundary, but it still very much exists. My contention is that what we recognize as technological merging is very much based on extensionism, framed by the notion that humans were created with inadequacies technologies are meant to compensate.

Marshall McLuhan, in his monumental work *Understanding Media: The Extensions of*

Man, discusses technology as an extension of self, an empowering rhetorical framework that classifies technology as an artificial construct existing separately from the organic human. When modern theorists speak of cyborgs, they are describing a human extended and enhanced by tools, suggesting a transformation or transcendence from “natural” *Homo sapiens*. Rather than embracing this idea as some cyborg enthusiasts suggest, I propose the reiteration of dualisms only widens the gap between technophiles and Luddites, propelling a “technoanxiety” (Heim 72) that Michael Heim believes began some time ago.

In *The Metaphysics of Virtual Reality*, Heim recalls the 1983 issue of Time Magazine that replaced the typical Man of the Year with a “Machine of the Year,” a desktop computer. This, he argues, sparked our eternal relationship with machines that began with our assigning them as appliances on which we could offload tasks. Though in the 1980’s many believed computers would simplify life and increase productivity, Heim argues computers have only multiplied activities and brought forth attitudes of addictive overwork. Our close working relationships with machines have culminated in time spent waiting for or directing machines in a perpetual “grid of social time-space” (Heim 73). Yet rather than resigning to the possibility that we are slaves to technology, Heim offers acceptable terms for technology’s presence in our lives framed by human-centric philosophy: “Instead of removing people from their work, our technology connects us to our work, putting us directly into our activities. Devices attach to every aspect of life, creating a technological culture. Our marriage to technology embraces production, transportation, and communication” (75). This impression of technological culture represents extensionist philosophy at its core, as technology is conveyed as an object used to enhance humans through productivity and efficiency.

Studies on cyborgs and artificially intelligent beings have begun to broaden the potential intersectionality of humans and machines, but much of this discourse still centers on human enhancement. In her discussion of Norbert Wiener, N. Katherine Hayles argues that the era of cybernetics has historically framed technology as a means to amplify our sense of control. The importance placed on tool-bearing and technological extension has contributed to a forgetfulness, as Mumford argues, of the centrality of symbols and language in human evolution. For Mumford, “the myth of the machine [...] was the worshipful obsession with technology, a pathological obsession that deflects people from recognizing other, more hopeful dimensions of human creativity” (Winner 395). Imagining the potential of these dimensions of human creativity involves broadening our conception of technology beyond the dichotomy of humans extended by their tools. Yet the transhumanist branch of posthuman discourse is too entangled in the promise of a techno-utopia that will allow for “the transcendence of the human shell in quest of more exquisite ways of being. . . . Hence, the focus of revolutionary aspirations no longer rests on cumbersome institutions so notoriously difficult to change, but rather on the physical composition of the body one inhabits” (404). What this suggests is the need for societal restructuring is deflected onto the goal of perfecting the human being.

In *How We Think: Digital Media and Contemporary Technogenesis*, Hayles suggests that rather than defaulting to the argument that our devices separate us from a sense of physicality, “our interactions with digital media are embodied, and they have bodily effects at the physical level” (2012: 17). She claims our physical actions while working with digital technologies involve a type of embodiment that “takes the form of extended cognition, in which human agency and thought are enmeshed within larger networks that extend beyond the desktop computer into the environment” (2012: 18). Embodiment plays an important role in my

conception of posthumanism, insofar as it involves humans interacting and engaging holistically with machines through the body and the mind as one. Too often are digital engagements thought to help the mind break free of the body, so it is my intention to disregard such dualisms.

In this dissertation, I also avoid associating any human behavior towards machines as inherently “natural,” for this can quickly fall into essentialist trappings that make it difficult to discuss human/technology relations in ways that are not pre-coded. It is my goal to approach the co-evolution of humans and technologies, and thus the concept of the posthuman, in ways that stray from a universally accepted narrative that places human betterment and superiority at the forefront. When we imagine superiority in “our dance with machines” (Hendren 2013: 59), we proclaim ourselves masters and our technologies as subordinates, neatly fulfilling a humanist ideology based on our acceleration with tools as our aids. Yet these cyborgian technologies do not consider the potential for different types of human/technology relationships based on mutual interdependence, for they are focused on extension for the purpose of enhancement . Thus, being critical of the conditions through which tools are designed is an integral part of reconceptualizing our relationship to technology. Hendren’s “tools of estrangement” (2013: 56) interrogate human need and broaden our expectations of technology’s place in our lives, and my goal is to formulate disruptive questions about technology regarding what can happen when we entangle with it. As Hendren argues, when we “re-program familiar objects in speculative ways, we understand ‘technology’ more appropriately as ‘techne’ - as articulation of new and possible applied knowledge that is animated by disruptive questions: questions of ethics, or equality” (2013: 62-3).

The framing of my argument stems from the idea that our individualistic society’s willingness to even entertain posthumanism is guided by first denouncing humanity as an

experiment that needs improving. Building upon Hayles' unearthing of how we became posthuman, as well as Cary Wolfe's probing of what posthumanism entails, the question I hope to answer is how to *be* posthuman in a world where technology can be something other than a tool for human betterment. The main thesis I hope to demonstrate is that posthumanism offers an opportunity not to improve humanity by following the guidelines set by humanism per se, but to rethink what being human means and what opportunities exist through relationships between humans and machines. Achieving an understanding of posthumanism that refashions the human's relationship with technology as one of symbiosis requires a departing from the extensionist thesis. The challenge I face in this endeavour is twofold: first, denouncing the Western humanistic conception of "Human" theorized as a conqueror of nature and master of machines; second, departing from the categorization of technology as a tool the humanist individual utilizes to magnify the self. In the chapter summaries that follow, I outline the key points that will be examined.

Chapter Summaries

Chapter 1 begins by offering a literary overview of cultural and theoretical conceptions of posthumanism and its relationship to humanism, echoing Wolfe's own investigative questioning in *What is Posthumanism?*. Like Wolfe, other well-known scholars already engaged in how we are becoming or apparently already have always been posthuman (Hayles 1999; Braidotti 2013) claim we have never been human in the traditional way humanism defines it, and there is no human essence that distinguishes us from non-human animals. Yet after a millennia of tool use, extension and enhancement have blurred the boundaries between organic and inorganic elements so thoroughly, posthumanism is often regarded as a vision anticipating existence after humanity in the form of technologically augmented humans. This assumption sees the human

forming a bond with technology, resulting in a transformation that renders the human unrecognizable. As a result, posthumanism has come to be associated both with utopian promises of technological enhancement, and with the end of the human, which is irreversibly altered by technological encounters that threaten to dislodge a perceived human essence.

The tensions that emerge from this dichotomy enclose the human subject in a precarious state of fragility, leaving little room for new conceptualizations of the human alongside technological developments. Rather than providing a new definition of posthumanism, I aim to rework its potential in a way that departs from the destruction of the human or the transformation of the human qua body, where human/technology mergers result in post-biological assemblages manifested as new species. My undertaking involves the disentangling of the posthuman from the humanist understanding of self as guided by Rosi Braidotti's three strands of posthuman thought. Braidotti's first strand attempts to extricate humanity from essentialisms shaped by Western humanism. I demonstrate that humanism has been rationalized as an ethical stance that emphasizes the agency of humans based on critical thinking which is also responsible for the elevated status of the Human as the master of all non-human artifacts.

In questioning the boundaries between human and non-human, I seek to unravel basic assumptions about human uniqueness that essentialist ideology has presented as fact. For example, humanism has encouraged the view that humans are meant to overcome or extend the boundaries and perceived limitations of their existence through enhancement. Some theorists attempt to depart from this model, but ultimately return to it by upholding humanist and transhumanist values misconstrued as posthumanism. By exploring transhuman and extropian ideas popularized by theorists such as Nick Bostrom, Max More and Ray Kurzweil, I demonstrate how both represent "an outgrowth of secular humanism and the Enlightenment"

(Bostrom 202) built on the radical improvement of humanity through technological means. I also show how transhumanist discourse attempts to combat human finitude by preserving an assumed “essence” of humanity that is based on enhancing positive traits while eradicating undesirable ones.

This leads into Braidotti’s second strand, where she underlines the necessity of an ethically-informed designation of the human’s status in light of technological advancements, beginning with the dissolution of the liberal humanist subject. By employing Wolfe’s anti-speciesism approach, I show that posthumanism must reject anthropocentrism and re-imagine the human’s place alongside other beings, particularly when technological advancements are introduced. As humans, we must depart from an insular and closed conception of selfhood so that technological interactions become relationships. Yet because technology is often seen as an infiltrative and disruptive force, many have difficulty moving beyond the totalizing, universal conception of the human extended by machines.

The chapter’s last section conveys how the cyborg has been incorrectly envisioned as an accelerator of human life via technological enhancement. To counter this, I refer to Donna Haraway’s cyborg trope to show the posthuman’s potential to expand opportunities for the human’s existence as symbiotically interconnected with technological apparatuses, rather than extended by them. This nuance is what differentiates the enclosed, unified human subject from the open, collective subject that can participate in dynamic interactions and exchanges. Here, I argue against constructivist claims about the body as a boundary while engaging with Francesca Ferrando’s pluralist approach, which offers a basis for the spiritual interconnectedness of posthuman becoming that is never complete and always evolving.

I conclude this chapter with Braidotti's third strand, wherein she invites scholars to participate in the "Posthuman Challenge" (2013: 37), intended as a space to create alternative and inclusive models of the human subject. Braidotti's affirmative posthuman represents the decentralization of subjectivity based on individualism in favor of collectivity. Building on this work as well as Karen Barad's concept of intra-action, I propose an inter-relational human that takes part in the discursive practice of entanglement and becoming, which I call "inclusive posthumanism." The methodology for reaching this concept involves re-imagining human/technology relations that depart from technoanxieties rooted in humanism. As I expand on in the next chapter, many concerns regarding technological entanglements stem from the culmination of humanist principles and misinterpretations of posthumanism in popular media.

I begin **Chapter 2** by establishing how technological utopianism has influenced the formation of posthumanist thinking that pushes the idea of transcendence. Through Wolfe's conception of "bad posthumanism" (xvii), I demonstrate how technology is presented as a solution to perceived human limitations, promising the correction of certain aspects of human nature and the eradication of others. Douglas Rushkoff's evaluation of technological utopianism at its most optimistic focuses on increasing efficiency and choice while promoting individualistic control as a natural human progression. I contrast this with Braidotti and Hayles' approach to humans co-evolving with technology and relinquishing control, to illustrate a dichotomy that causes humans to feel absorbed and simultaneously threatened by the potential of advanced machines. Bad posthumanism is the culmination of misconceived human/technology hybridizations that reinforce binaries between natural and artificial constructs. This is often portrayed in expressions of art and literature that speculate on imagined futures of androids, cyborgs, and fantasies of uploaded consciousness. Rather than focusing on whether human

enhancement should or should not be a necessary supplement to life, I explore what each of these three figures reveals about humanity's attitude in the face of technological advancements.

The fictional works I explore in this chapter offer a cultural analysis of the ways mainstream media theoretically experiment with the notion of becoming posthuman, to show the underlying discomfort that interferes with understandings of interdependent relationships between humans and machines. The prospect that humans will face elimination at the hands of their technological creations has inspired hundreds of literary and filmic science-fiction works that, while appearing to celebrate such endeavors, cautions against them. The message readily apparent in these fictions is that we as humans fear our obsolescence, and the drive to remodel and control the world must begin with improving ourselves. I refer to Heidegger's infamous question concerning technological "essence" (1977: 3) to clarify the indeterminate role technology plays in human life. As Heidegger's treatise suggests, rather than seeing technology's essence as something to obtain, its revelatory nature should be given more attention. By dissecting filmic representations of androids, cyborgs, and uploaded consciousness, I hope to expose the detriments caused by the self-conscious-inspired belief that humans were created with inadequacies that need correction.

The first figure I identify is the android, a product of human uncertainty and the perceived dissolution of identity and agential power. I critically engage with Rodney Brooks' discussion of human "specialness" to illustrate how amplified exceptionalism influenced by Western humanism informs our need to replace religious validation with rationalism and the centralization of man. In media, the introduction of artificially intelligent machines both intimidates and convinces us that our physical inferiorities stand in the way of our full potential. Thus, the portrayal of humanoid robots maintains human specialness by justifying the placement

of the Human at the top of a hierarchy, deciding who or what is part of the “intimate circle” (Brooks).

The second figure I critically analyze is the cyborg, which demonstrates the humanist resistance to the hybridization of body and machine, despite the onscreen popularity of these beings. Of the many filmic representations featuring this figure, the works I reference all attempt to address issues relevant to posthumanism, including questions surrounding the nature of the self and how human identity is affected by technological encounters. What I hope to exhibit is the consistent thematic narrative that portrays technology as an infiltrative force, compelling a division between human and machine. This division is repeatedly represented onscreen by human subjects permeated by cyborg appendages threatening to uproot their autonomy and free will.

While the cyborg narrative emphasizes the biological enhancement of the human through technological attachments to the body, the final posthuman figure I identify is a slight departure from exceptional augmentations and disembodiment fantasies. Uploaded consciousness represents humanity’s desire for the preservation and extension of life, but rather than portraying bodies visibly supplemented and enriched by technology, this figure seeks to replace its body entirely. Here, the emphasis is placed on the purified status of the flesh-and-blood human, who gains refuge by moving into young healthy bodies that are typically white. Not only does this suggest that bodies can be interchanged as if they were no more than vessels, but that survival depends on the whims of the privileged. Overall, the three figures in this chapter epitomize what Pramod Nayar calls “pop posthumanism” (6), a subset of transhumanism that contributes to a deluded view of agency through human/technology mergers that elevate the possessive individualistic self.

In **Chapter 3**, I apply this impression of posthumanism to the rhetoric of being “more human,” an idea touted by humanist critics describing the individual’s extended reach (Hauskeller 2013; Taylor 2011; Casey 2013). I evaluate this concept by surveying the interconnectedness of humans and technology through ubiquitous mobile devices and their affordances. By analyzing criticisms of mobile devices as detrimental to authenticity, I expose normative biases towards technological interactions performed by able-bodied users. My contention is that mobile phone designs prioritize identity formations that are reliant on the magnification of the individualized self and the elevation of functionality and efficiency. This privileges the needs of only certain types of users while discounting the mobile phone’s capacity as a device of inclusion and access.

The notion that technology should be utilized to facilitate extended reach is linked to a Western humanist desire for a personalized mobility structure that defies space and time and centers on the projection of the individualized self. I trace this idea back to a unitary idea of selfhood that encourages us to see ourselves apart from others, which prevents us from entering into relationships of mutual exchange with devices. I evaluate Andy Clark’s conception of the “human-technology symbiont” (3) that sees the human subject as a product of technological attachments organically imbued through neurological processes. The amplification of the individual self through technological extension allegedly makes us “more human,” and I contrast this with Braidotti’s conception of subjectivity. My position on human/technology mergers is informed by Braidotti’s interpretation of selfhood that is based on collectivity rather than individualism. This collectivity emerges via the creation of relationships through entanglements, which rejects the notion that humans exist independently.

The latter half of this chapter is devoted to the alleged detrimental effects of communication technologies according to critics who blame the decline of face-to-face conversations on digital connectivity. I employ Kenneth Gergen's notion of "absent presence" (227) to show that normative preoccupations with controlling tools of authorship have encouraged the idea that digital engagements are inauthentic. Screens are criticized as interfering with direct access to the physical world, and I problematize the ableist overtones that define these notions of embodiment and presence. By drawing on the thinking of Turkle, I reveal how her criticisms of digital connectivity perpetuate ableist digital dualisms that privilege physicality. Dismissing the varied ways that users engage with one another and with the world creates narrow parameters for what constitutes authentic identity performance, just as demonizing technology as an opponent that must be remastered only expands the gap between humans and machines.

To show the propagation of this gap, I survey the writings of ex-Google ethicist Tristan Harris and his work on mobile phone addiction to provide a critical overview of digital detox initiatives claiming to put human needs first. Using various examples, I aim to show that these initiatives strive to recuperate an essentialist idea of humanness thought to be under threat by highlighting technology as a humanist instrument that only considers the needs of users with certain bodily constructions. The last section of this chapter responds to both Turkle's and Harris' claims against mobile connectivity by providing examples of hybrid spaces that encourage community building. I engage with Jason Farman's work on the rhetoric of disconnection to explore technological mediation apart from the realm of distraction, to re-imagine presence as a state of awareness not dependent on physicality. In order to present a more inclusive measure of presence that offers a broader understanding of the human, I argue it is

necessary to define the inclusive posthuman in terms of its ongoing relationality and becoming alongside other human and non-human entities.

In response to the previous chapter's evaluation of mobile technologies as promoting extensionist philosophy, **Chapter 4** examines human relationships with machines, as opposed to through machines, using Bruno Latour's conception of technological mediation as a point of contact for being in the world. The normative and universalized understanding of technological mediation is a contrivance of controlling spaces through the amplification of the individualized self. I aim to dismantle the assumption that technology removes us from enacting in the world, arguing we can no longer consider mediation as a method for facilitating our possession and control of environments through technology. By upholding Braidotti's insistence that ethics remain at the forefront of human/technology relations, inclusive posthumanism imagines a human subject of multiple belongings, constituted by multiplicity and an embodied sense of collectivity.

Returning to the interplay between the decentralization of the self and the practice of entanglement I refer to at the end of Chapter 1, inclusive posthumanism pulls the human from its enclosed unitary position so it can participate in symbiotic relationships with other "actants" (Latour). I return to Barad's work to show the relationship between humans and non-human actants as phenomena acting within a larger apparatus where the human is no longer in the center. My assertion is that technological artifacts are, from a normative point of view, seen as passive tools that humans instrumentalize to fulfill their desires, rather than as actants with which they can form dynamic bonds. Thus, I strive to disengage actants from artifacts and objects, moving beyond what Barad calls "thingification" (2013: 812), which debases the way we understand our connections to various elements in the world.

My objective is to determine how best to establish an ethical accountability that departs from a humanist instrumentalization of technology that contributes solely to development and progress. Heidegger's assertion that technology's essence depends on its use is dependent on how we reveal the truth (*aletheia*) to ourselves in order to possess it. Conversely, Charles Sabatino interprets Heidegger's concept of enframing (*gestell*) as a perilous justification by which humans utilize technology to exercise their will. This has classified our instrumental regard of modern technology as omnipotent rather than inter-related, which prevents us from participating in an ongoing "becoming."³ For Deleuze and Guattari, "becoming-" (272) is a process of change and movement within an assemblage featuring multiple elements, which is how entanglements offer an alternative vision of open subjectivity.

Entanglements also offer the opportunity to view technological mediations as experimental rather than enhancing, but this must begin by re-purposing technologies of the body from prosthetic improvements to exploratory mergers. Just as Chapter 2 theorized technologies of the body in terms of cyborgism in science-fiction, the remainder of this chapter focuses on technological prostheses in daily life. By drawing on what Marquard Smith and Joanne Morra refer to as the "prosthetic impulse" (4) this chapter explores the intersection of the teleological fantasy of improving one's body through attachments and the transhuman vision of perfection. When humans come into contact with mechanical or artificial limbs, prosthetization is considered a fashioning of external tools onto the body. To reconsider this definition, I look at David Wills' technological turn that acknowledges the prosthetic articulation of the human, but resists the anthropocentrism of seeing the human as the master of those appendages. I then

³ This instance refers to Braidotti's usage of the term throughout *The Posthuman*, and Barad's *Meeting the Universe Halfway*, 335.

employ Wills' idea to deviate from the assumption that human/technology mergers are incontrovertibly forward-moving.

In the latter half of this chapter, I evaluate the prosthetic expression of the body by re-imagining the body-as-prosthetic argument put forth by Hayles. My goal is to divert from divisive interpretations of the internal self and the external tool, to argue that the body is not an encasement of the self. By considering prosthesis outside of its demarcation towards attachment, technologies need not be viewed as assistive devices that restore people with disabilities. Drawing on the work of Sarah Jain, my contention is that prosthetics intended to perfect bodies actually expunge those bodies' differences, which culminates in an erasure of bodies deemed faulty by cultural standards. In thinking about bodies entangling with technologies to embrace difference over progress, I build on Alison Kafer's profiling of artist Chun-Shan (Sandie) Yi who engages in "crip kin-making" (1) through technologies that depart from pure functionality and rehabilitation. I then intersect this with Jay Dolmage's analysis of disability through the Greek god Hephaestus to survey embodied differences through non-linear movement. Looking at the unique relationships disabled people have with technologies, the last section of this chapter examines the possibilities for individuals within Deaf communities to participate in collective subjectivity. In light of certain prosthetics that tend to dictate disability for the Deaf, I explore the ways in which entangling with technology affords participation within assemblages that broaden identity.

Chapter 5 of the dissertation is devoted to applying my conception of inclusive posthuman entanglement to various projects that hinge on technological mediation in an exploratory capacity of chance encounters. My purpose is to re-conceptualize the human's negotiation of agency by participating in "events" with other actants and letting go of its

centralized position in these relationships. Building on Wills' discussion of the technological turn from the previous chapter, Richard Grusin's non-human turn offers an inclusive platform for resisting anthropocentrism, but as I will demonstrate, agency is still very much linked to a sense of human rationality. Inclusive posthuman existence proposes letting go of the assumption that everything exists to further human will, which involves replacing rational thinking, a calculative methodology for approaching the world, with contemplation. The writings and influences of theologian Thomas Merton provide a basis for contemplation as an opportunity for the collective subject to experience openness. I relate contemplation as an acceptance of the interdependence of all things through the concept of "beingness" (Heidegger 1977: 79) as a gathering of humans and non-humans. Through an application of Heidegger's notion of meditative thinking as an alternative to calculative thinking, I redirect the potential for technological entanglements from progressive to detached. This does not imply an uncaring attitude that leaves things be, but rather an attitude of "releasement" that responds to the world's offerings without the expectation of possession.

In terms of technological mediation, Grusin's non-human turn conceives of the human losing its way instead of moving forward, which I relate to Wills' concept of "dorsality" (2004: 38) as a shift towards the creation of unexpected relational emergence. Hayles asserts that the body and embodiment, two inter-related but different aspects of the self, are steadily merging when encountering phenomena. The first media project I review in this chapter exemplifies this co-constitution between humans and technics through Mark B.N. Hansen's "media theory" (2006), which imagines media artifacts as correlates of embodied action. As an example of an emergent event, I refer to Hansen's use of the interactive art project *Son-O-House* (2004), a structure participants can enter that generates sound patterns according to movement. The

participant's movements are not directly generated into sound, but influence the creation of a feedback system where sound develops from the human's assemblage with the sensors. The idea is for the human to re-interpret their relationship not only with technology, but with a living environment that responds to the mediated experience.

The second project I review is *Very Nervous System* (1986-1990) by artist David Rokeby, who endeavors to dismantle the idea that media is a direct extension of the self through an interactive platform that subverts the desire for direct computational control. *Very Nervous System* is comprised of an encounter between the artist as participant who engages with his transformed reflection relayed by a video camera that renders movements into sound. Rather than promoting authority, Rokeby seeks to facilitate indirection, but not passivity, with a new perspective of self-imaging. Like *Son-O-House*, emergent sounds are created by the entanglement of the participant and the video camera, not as a direct reflection or extension, but as a type of mediation only possible if the participant is open to systems they do not control.

This brings me to the virtual reality (VR) component of this chapter, which Rokeby contrasts with his work on the grounds that VR is traditionally founded on the participant maintaining control of their environment from an omniscient standpoint. VR is largely considered for its transcendent affordances where users can access spaces previously inaccessible through a type of disembodiment, which I address. My inclusion of VR in this chapter engages with its social enticement of connecting with others in virtual spaces, which has translated into a mechanism for encouraging empathy-related closeness. I am careful to avoid overstating VR's capacity to induce empathy, despite the mainstream enthusiasm for its potential to achieve this. Rather, the projects I review in this section highlight VR's encouragement to divert from the individualized self by merging with the lives of others through "perspective-

taking.” I engage with projects from Stanford University’s Virtual Human Interaction Lab, the United Nations’ film *Clouds Over Sidra* (2018), and *BeAnotherLab* to show how users can interrelate through the sharing of narratives. To further explore how two individuals can connect with each other and with actants, I present another art piece by Lisa Bufano that rejects normative assumptions of such mergers as functional.

My last exploration of entanglement applies ideas proposed earlier in this chapter regarding mediation and indirection to explore human/technology relationships through Wills’ interpretation of Jacques Derrida’s “politics of friendship” (1997). In Chapter 2, my portrayal of posthumanism in film is meant to exemplify transhuman influences on stories that follow a human instrumentalization of technology. These films illustrate the damaging aspects of technology as infiltrating a perceived sense of humanness, because they focus on enhanced individuality rather than exploratory collectivity. In contrast, Wills theorizes that friendship between humans and machines can consist of an entanglement of reciprocity that benefits both actants.

The Spike Jonze film *Her* (2013), which features a unique relationship between a human and an artificial being explores prosthetization from the perspective of interdependent exchange by levelling the human Theodore with the non-human Samantha. Though this film begins as a somewhat transhumanist presentation of technological convenience, it evolves into a narrative of symbiotic inter-relatedness. My overall purpose is to convey posthumanism as a methodology for humans to discard individualism and embrace community through entanglements with machines that encourage their decentralization, without the dystopian nuances of human elimination or takeover. I will conclude this dissertation by providing an overview of the arguments presented as well as offer conjectures relating to future explorations of

human/machine mergers. Using the film *Bicentennial Man* (1999) as well as a series of paintings by Sunaura Taylor, I build on ideas of backwards and sideways articulations that divert from progress to propose how posthumanism can be positioned alongside existing prejudices of human-centric philosophy.

Chapter 1:

The End of the Human: Extricating Posthumanism from Humanism

Spiritual practice can be viewed, from a posthuman perspective, as a technique which offers hybridization in a context where essentialism has been employed to configure fixed categories and hierarchies.

Francesca Ferrando, "Humans Have Always Been Posthuman: A Spiritual Genealogy of the Posthuman," 254

The Seven Definitions of Posthumanism

If one were to search for a definition of the term "posthumanism," Wikipedia would return a result that states the following: "This article is about a critique of anthropocentrism. For the futurist ideology and movement, see transhumanism" (Wikipedia). Below this, Wikipedia defines posthumanism as "after humanism" and "beyond humanism," and includes seven additional definitions according to philosopher Francesca Ferrando. Ferrando explains that posthumanism has become a general term for various movements including but not limited to "philosophical, cultural, and critical posthumanism; [and] transhumanism (in its variations of extropianism, liberal and democratic" (Ferrando 2013: 26). She claims experts and non-experts have become confused by the term, particularly since there is thought to be some overlap between posthumanism and transhumanism. The Wikipedia article provides four definitions that relate to posthumanism: Antihumanism, Cultural posthumanism, Philosophical posthumanism, and The Posthuman Condition. Following this, the remaining three interpretations are Transhumanism, A.I. takeover, and Voluntary Human Extinction. I separate these two groups because while the first set centers on critical discourses of human subjectivity, the second is a more accurate representation of what non-academic audiences think of when they hear the term posthumanism.

In mainstream media, the idea of human elimination at the hands of artificially intelligent machines is extreme, but represents a collective anxiety. In academic circles, the posthuman is

often thought to be the next stage in an evolutionary process that sees the human augmented by advanced technologies that fuel a transformation into something new that leaves humanity behind. In *What is Posthumanism?*, Cary Wolfe introduces this topic by pointing to Wikipedia's definition of humanism, explaining it as "a commitment to the search for truth and morality through human means in support of human interests" through "universal human qualities - particularly rationality" (xii). He also concludes, perhaps to placate the anxieties stemming from the possibilities introduced by this confounding but oft-used term posthumanism, that "humanism is alive and well" (xi), after citing a Google search where the word "humanism" yields 3,840,000 hits, over "posthumanism," which comes in at a mere 60,200. In "Posthumanism in Film and Television" Michael Hauskeller, Thomas D. Philbeck and Curtis D. Carbonell update this search to report that posthumanism results have risen to five times as many as before, while "humanism" yields less than three times the results. Considering this data, Hauskeller et. al agree with Wolfe's assessment that humanism prevails, while also arguing that posthumanism is becoming more established as a term both inside and outside of academia. There are also approximately ten times more hits for the word posthuman, suggesting an emphasis on the *post* prefix signifying a departure from what we have conceivably established as the human condition.

Scholars in the sciences, social sciences and humanities have given the term posthumanism multiple definitions ranging from anti-humanism to cultural and philosophical posthumanism, to transhumanism. Overall, posthumanism as a concept has never had a stable, agreed-upon definition in either mainstream or specialist discourses; the mainstream media tends to misconstrue it as a futuristic set of scenarios that merge humans with machines, thus implicating technoculture as a gateway to dystopian cyborgism. This impression of

posthumanism suggests the post-human or after-human ending of our perceived conception of “natural humanity.” This idea of an organically definitive natural human (the existence of which I will contest continuously throughout this dissertation) is immediately at risk once the posthuman is associated with the coupling of two opposing elements, human and machine, where the machine is in a position to overtake and infiltrate the human, thus robbing it of its supposedly natural proclivities to make way for something new. I would like to clarify that my usage of the term “human” with regard to the liberal humanist able-bodied subject, a sociological and anthropological normative invention, will be referred to as the “Human” to avoid confusion. My approach to human essentialism is intentionally critical, with full awareness that the idea of “natural” when applied to human capabilities is a construct that coincides with how humanity has been conceived from a Eurocentric anthropological position.

As Bernard Stiegler argues, we must question “the birth of the human” because we constantly question its end, or “the birth of death” (Stiegler 135). It is difficult to conceptualize the human in any alternative way, first and foremost because we “can only respond to that end, without introducing anything new. For the end of the human cannot be investigated without investigating its origin” (Stiegler 135). Stiegler proposes that instead of even thinking of the birth relating to death, we should evaluate “its invention or even its embryonic fabrication or conception, and to attempt this independently of all anthropologism” (136). If we are to theorize the posthuman, we must also consider that we may already no longer be humans in the way we have come to understand them in the past.

The Human Subject and the Construction of Man

The question I aim to answer in this dissertation is not “what is posthumanism?” precisely, as the many theorists I outline in this chapter have already done. Rather, I propose a

conception of the posthuman that broadens our understanding of human relationships with technology that stray from enhancement fantasies. My purpose is to demonstrate how a posthuman subjectivity can be used as a comprehensive method of revealing the human as an incomplete, open structure, rather than a fixed, unified being. The posthuman is something that neither begins nor ends, and is in a constant state of developmental becoming. Thus, it is an opportunity to broaden human complexities not determined by humanist goals, such as attempting to surpass biological limitations through technological intervention. The posthuman need not be viewed as a new evolutionary species born out of its proximity to and appropriation of technology, but can serve as an ideology that helps us see what the human has always been, and will always continue to be.

Rosi Braidotti begins *The Posthuman* by questioning what the posthuman is in terms of its effects on humanity and subjectivity. She admits that there is a “gloomy connotation” to the posthuman condition, as it represents a departure from the age of “anthropocene, the historical moment when the Human has become a geological force capable of affecting all life on this planet” (2013: 5). Rather than viewing the posthuman as an end, Braidotti urges us to consider what we are in the process of becoming. The currently limited discourse that frames the human in terms of cultural construction, thereby distancing it from *Homo sapiens*, restricts the depths with which we are capable of understanding potential human interactions with the world, which affects our entire subject formation. The subtitle of Braidotti’s first chapter, “Life beyond the Self,” illustrates that posthumanism marks the end of the opposition between humanism and anti-humanism, to make way for a refashioning of the human apart from the humanist “self.” Humanism has assembled the erected nature of the Human as an intrinsically moral entity driven towards perfect rationality, which has created a construct for limitless expansion towards that

perfection. Braidotti's posthumanist perspective is less about the crisis of the human's end, but about alternative ways of viewing the human subject as humanism inevitably declines. She is careful to point out that her anti-humanism is not opposed to humanism per se, but builds on the anti-humanism legacy that encourages alternate visions of the self and the human subject.

In this dissertation, I engage with Braidotti's posthuman subject that departs from anthropocentrism to dismantle how unified individuality has severely regulated the ways in which humans can interact with and exist alongside technology. To break down my own conception of the posthuman subject, I follow Braidotti's three strands of posthuman thought, the first of which is reactive towards the Human as the measure of all things. Braidotti cites Martha Nussbaum as an example of this reactivity, who defends humanism on the grounds that it positively influences democracy and encourages respect for human life. While Braidotti acknowledges the importance Nussbaum places on subjectivity, she rejects the universalistic belief in individualism and fixed identity because it offers no opportunity for alternative models of the self and tries to remedy fragmentation. Nussbaum's reactive defense of humanism is the result of cultural anxieties of the erasure of the Human, which stem from ideologies adapted by an expansive, imperialist sensibility. As Braidotti argues, "humanism's restricted notion of what counts as the human is one of the keys to understanding how we got to a post-human turn at all" (2013: 16). Braidotti argues against individualism as an intrinsic part of human nature, seeing it as nothing more than a "historically and culturally discursive formation" (2013: 24), or a kind of individualistic greed. This suggests the individualism of Post-Enlightenment European policy was never actually based on a manifestation of Human destiny, but rather on a kind of cultural paranoia of erasure.

To deconstruct where this paranoia stems from, it is useful to turn to Michel Foucault's idea of "man" as a "recent invention." As he explains in the final chapter of *The Order of Things*, the conceptual "man" has never been something inherently isolated to biology, but "the effect of a change in the fundamental arrangements of knowledge . . . ; an invention of recent date" (421). Foucault opposes the human sciences establishing any inherent nature of humans, asserting that the focus should be on what humans become when they live and speak:

The human sciences thus occupy the distance that separates (though not without connecting them) biology, economics, and philology from that which gives them possibility in the very being of man. It would therefore be wrong to see the human sciences as an extension, interiorized within the human species. (Foucault 385)

The human sciences allow the subject, "a being who owes his finitude only to himself" (386), the position to come to conclusions based on what it already knows. Thus, when Foucault states "man is a recent invention" within sixteenth century European culture, he refers to the Human composing its own figuration amidst the end of a previous understanding of identities and differences. Foucault considers the appearance of this construction as "an effect of a change in the fundamental arrangements of knowledge," and one that is "perhaps nearing its end" (421-22). While many have taken Foucault's foreboding words both literally and also cautiously⁴, his statement draws attention to the precarious nature of the arrangements that have constituted our current understanding of the human. He claims that if some event yet unknown were to cause humans to disintegrate as they previously have, then "one can certainly wager that man would be

⁴ Francis Fukuyama, in his essay "The End of History" (1989) argues that the "end of history" represents "the end point of mankind's ideological evolution and the universalization of Western liberal democracy as the final form of human government" (1989: 3).

erased” (422). If humanity is not in danger of being erased, but the hegemonic understanding of the human might be, it becomes necessary to first trace the human back to *Homo sapiens* to establish its historicity and then detangle it from humanism as Braidotti does, though she is not the only one who has tried.

Ihab Hassan describes the radically changing human form as something that needs revising in “Prometheus as Performer? Towards a Posthumanist Culture.” He claims, “five hundred years of humanism may be coming to an end, as humanism transforms itself into something that we must helplessly call posthumanism” (843). Hassan’s description of the “helpless” shift suggests a transition that is inevitable, implying post-human existence and posthumanism are impending threats we are unable to prevent. While Hassan rightly predicts humanism may no longer be sufficient to define our future, he only understands posthumanism as a transformation that requires the disintegration of the human. Like other theorists, his conception of posthumanism is influenced not only by Foucault’s claim about the erasure of man, but also by Claude Levi-Strauss who states: “The world began without the human race and it will end without it” (Levi-Strauss 397). Hassan is undoubtedly aware that these predictions do not refer to “the literal end of man but the end of a particular image of us, shaped by Descartes” (Hassan 833), by which he means the Cartesian ego that situates itself in the world in order to be molded. Yet his posthuman culture is one that would solve the “inner divisions of consciousness and the external divisions of humankind” (833), meaning the separation of human and non-human, body and mind, natural and artificial.

While I partially agree with the aspect concerning the dissolution of the separation between established dualisms, I do not directly associate the death of man and of humanism with the rise of modern technology. When questioning whether artificial intelligence will “supercede

the human brain, rectify it, or simply extend its powers,” Hassan concludes that these “agents of a new posthumanism” will “help to transform the image of man, the concept of the human” (846). This is where I take issue with his assessment of posthumanism, largely because he claims to speak for “poor humanists like ourselves” who will have to adapt to a world of new beings. My contention is that the posthuman represents a broadening of our limited understanding of the human as it already exists, not the birth of an entirely new species. Yet Hassan speaks of the “transhumanization of the human” (834) and cites Elizabeth Mann Borghese who claims the postmodern man cannot be the same *Homo sapiens* as before. For Borghese, technological advancements such as space travel and organ transplants now blur the boundaries between life and death, making posthumans “different from a species whose members cannot do this” (Mann qtd. in Hassan 847). However, the idea that *Homo sapiens* are only now evolving due to advanced technology disregards the fact that humans have always utilized the tools at their disposal to amend themselves and their world. Hassan may regard the conjunction of imagination and science, myth and technology as a “sudden mutation of the times” (834), but this has already begun.

Technological innovation does not signal the beginning of posthuman culture, but the narrative surrounding technology has shifted from its position as a deterministic force alongside humanity, to how inseparable humans are from their technologies in the 21st century. Hauskeller claims people do not fear this merger as they once did, and have accepted that technological enhancements will challenge the physical and mental limitations of our bodies (2013: 3). Yet this too is a humanist stance because it frames the human/technology relationship in terms of overcoming and transcending biological limitations. Like Hassan, Hauskeller sees posthumanism as a new state of being triggered by modern technological advancements, when it should actually

be a paradigm shift for how we view ourselves existing alongside technology and not how we are irrevocably changed by it. Though there are marked differences between posthumanism and transhumanism, they are often erroneously combined. This creates a misguided conception of posthumanism as representing a continuation of human bodies, which are understood as possessing an indefinable quality that can transcend embodiment via present and future technologies. In the next section, I show how various branches of transhumanism are based on the erroneous notion that the human is destined to overcome its biological finitude in order to achieve perfectibility.

Transhumanism, Extropianism and Transformation

The World Transhumanist Association⁵ admits the term transhuman is “loosely defined” but largely based on the idea that the “human species in its current form does not represent the end of our development but rather a comparatively early phase” (Bostrom 2003: 4). This same document also advocates for the continuation of life beyond its current human form and even beyond posthumans, who “could be completely synthetic artificial intelligences” but could also be “the result of making many smaller but cumulatively profound augmentations to a biological human” (2003: 5). It is significant to note that within the transhumanist doctrine, posthumanism appears to represent a number of topics such as singularity, mind uploading, and human extinction, referring to any future being that is “no longer unambiguously human” (2003: 5). Nick Bostrom, a leading scholar in the transhumanist movement, claims posthumanism informs the ideology of the transhuman as a figure that surpasses human limitations on a biological and cognitive level. He describes the transhuman as possessing “indefinite health-spans, much

⁵ In 1998, David Pearce and Nick Bostrom drafted the Transhumanist Declaration (the founding document of the World Transhumanist Association).

greater intellectual faculties . . . , as well as the ability to control their own emotions” (2005: 203). These beings not only bear little resemblance to traditional humans, but also “inadvertently erode something that is deeply valuable about being human but that is difficult to put into words” (2005: 203). Though this quality remains unspecified, Bostrom insists on its protection by linking dehumanization with technological enhancements that make us “more than human” (2005: 204).

Transhumanism promotes the view that technologies should be available to everyone morphologically and reproductively, but Bostrom lists two factors that serve as cautionary restrictions when considering the parameters of such enhancements: “One is that the state of being posthuman might in itself be degrading, so that by becoming posthuman we might be harming ourselves. Another is that posthumans might pose a threat to ‘ordinary’ humans” (2005: 204). This statement instils a measure of purity within human ordinariness that posthumanity allegedly threatens, first through infiltration and then by takeover or replacement. The idea that an enhanced human could lose all sense of purity when technologically altered suggests that human dignity is measured by being an “authentic” human. I use the term authentic to illustrate the elevated consideration essentialist thinkers give to humans unaltered by technology, with their unique humanness preserved. Yet the very idea of unique humanness also generates several assumptions: 1) being human can involve an existence without technics⁶; 2) human purity will

⁶ See Lewis Mumford, *Technics and Civilization* (1934). Rather than technology, technics describes *tekhnē*: art, skill, craft to mediate the world. “A translation into appropriate, practice forms of the theoretic truths, implicit or formulated, anticipated or discovered, of science” (Mumford 52).

be lost with the introduction of advanced technology; 3) posthumanity is a complete departure from humanity.

I address the first assumption regarding technics in the latter half of this chapter, but the second and third involve the amplification of certain human qualities and the eradication of others. Bostrom cites the bio-conservatist Leon Kass, who writes: “We need a particular regard and respect for the special gift that is our own given nature” (Kass 1), which advocates for the protection of an idealized version of humanity rather than a realistic one. In other words, intensifying “gifts” such as intelligence and youth are encouraged, so long as negative qualities of finite humanity such as aging and sickness are extinguished. This division organizes certain attributes as worthy of preservation while others are relegated as excess baggage the ideal human can and should rid themselves of. In that respect, one issue with imagining an ideal human is that the umbrella of undesirable traits is widened to include inferior genetic dispositions as well as physical and mental disabilities. This is how the transhumanist mindset dictates that humans are not reaching their full potential due to limitations technology must fix. As a result, the relationship between machines and humans becomes determined by a desire for perfectibility that involves the erasure of bodies deemed insufficient.

When it comes to biotechnological intervention specifically, Eugene Thacker offers an interpretation of posthumanism as a wide set of discourses he believes are philosophically determined partly by “extropianism,” the next phase of the human through technological and scientific advances. This is a more technophilic idea of the changes the technology/body merger will bring, and Thacker uses this as a launching point to explore critical posthumanist discourse in light of bioinformatics, the application of computer technology to life science (Thacker 72). He points to Hans Moravec, Ray Kurzweil, Richard Dawkins and Marvin Minsky as examples of

theorists arguing that technological advancements will bring us into a posthuman future. Some notable examples include Moravec's discussion of uploaded consciousness and the transferring of minds to hardware systems unencumbered by biological limitations (i.e. immortalized computer neural networks) in *Mind Children*. Similarly, Kurzweil's writings on singularity propose we can capture the unspecified human quality that concretizes identity, and immortalize it: "[O]ur identity will be based on our evolving mind file. . . . [T]he essence of our identity will switch to the permanence of our software" (Kurzweil 129).

In these examples, the human's *impermanence* is seen as a minor interruption in the quest for eternal identity, where the problem of mortality is solved if the mind is simply transferred to a machine. However, the fact that mortality and finitude are even viewed as problems is what sets both transhumanism and extropianism apart from the potential illuminations posthumanist discourse can offer. As Thacker points out, there exists a "tension between identity and radical change, between visions of software minds and the realities of biological bodies" (75). This has helped to inspire interpretations of posthumanism so far removed from humanity to represent a being that enhances desirable traits while also trying to eternalize the presumed essence that makes us human. *Humanity*⁺⁷ proposes a "lifepath" for transhumanists who wish to transition into this new species, claiming that becoming posthuman is only achievable through technologically-enabled modifications:

Some authors write as though simply by changing our self-conception, we have become or could become posthuman. This is a confusion or corruption of the original meaning of the term. The

⁷ A website dedicated to the dissemination of the "Transhumanist Declaration," a joint effort between scholars within the Extropy Institute and the World Transhumanist Association.

changes required to make us posthuman are too profound to be achievable by merely altering some aspect of psychological theory or the way we think about ourselves. Radical technological modifications to our brains and bodies are needed. (Bostrom, “Transhumanist FAQ”)

Ironically, the aforementioned quote reflects a posthumanist discourse that has the potential to move us away from viewing the future of humanity within the lens of humanism. By casting posthumanism as a continuation of humanist goals, we limit opportunities to broaden our conception of the human, which currently remains quite narrow. As this dissertation will demonstrate, the changes required to make us posthuman are indeed profound and involve shifts in perspective, despite arguments to the contrary.

For transhumanists and extropians alike, *Homo sapiens* are viewed as a species in-progress, framed by auspicious and disadvantageous characteristics that are weighed and balanced in the interest of establishing an ideal human. The notion of the human in-progress is not entirely incorrect, and is conceivable when reframing the human as always evolving. Yet the human is seen as an evolutionary step towards a new non-human species that exceeds its capacities via technological enhancement. This idea is too entangled within a misconstrued idea of posthumanism that Wolfe rightly claims is “an intensification of humanism” (xv). This is confirmed in the writings of Max More, founder of the Extropy Institute, who claims perpetual progress, self-transformation, and intelligent technology are key values that make transhumanism an extension of humanism: “Transhumanists take humanism further by challenging human limits by means of science and technology . . . to accelerate our move from human to a transhuman or posthuman condition” (More). This acceleration is not without its problems, as extropians view

the transformation humans undergo with apprehension: “[W]hat remains unclear for the extropians is the extent to which the human can be transformed and still remain ‘human’” (Thacker 76). For extropians as well as transhumanists, the fear that the coupling of human and machine can taint the human’s pure, “natural” form has had prolonged effects on how technology is perceived as an oppositional force. The posthuman is misrepresented as the futuristic being that amplifies humanist values through technology, thus creating conflict between the unnatural/non-biological and the natural/biological.

The Nature of Anthropocentrism

Posthumanism is a concept that needs to be evaluated not only outside of its associations with the end of man, a hyperbole Jacques Derrida has deemed “apocalyptic” (Badmington 10), but in terms of what it might bring forth. Francis Fukuyama discusses technological determinism in *Our Posthuman Future*, where he proposes biotechnology has the potential to change the kinds of beings we are and propel us from a human to a posthuman world. He speaks about the end of history correlating with the end of human nature as we know it, as he believes human nature to be rooted in our biological being, particularly our genes. Mostly, he argues that interfering with human biology on a genetic level could alter human nature, transforming our values and ultimately undermining capitalism. Though in his book, Fukuyama is referring specifically to genetic engineering and cloning, he argues that attempting to slow down normal aging processes is unnatural and dangerous. He is not so much saying that technological advancements should be prohibited, but that they must be regulated either by individual states or internationally, lest we “disrupt either the unity or the continuity of human nature” (Fukuyama 172). Fukuyama’s book is more than a discussion of the dangers of biotechnology, but of the apparent fragility of the human species. He believes humans possess an inner essence or nature,

which he defines as “the sum total of the behavior and characteristics that are typical . . . arising from genetic rather than environmental factors” (172). In his view, human beings are exceptional, though he admits that non-human animals also have notable traits such as language and reason. It is the essence of humanity, a sense of dignity and of self-improvement that truly sets humans above non-human animals, which he believes must be preserved from the dangers of technological interference. Yet if “human” is a social and cultural construct as Foucault suggests, then anything resembling innate humanness should, by definition, be flexible and transient as well.

Wolfe says it best when describing humanity: “There is no talk of purity. Everything we know (scientifically, theoretically) and say (linguistically or in other forms of semiotic notation) about the body takes place within some contingent, radically nonnatural (that is, constructed and technical) schema of knowledge” (xxv). Wolfe’s rejection of the pure human is very similar to the liberal humanist subject of N. Katherine Hayles. Her posthumanism is post- “humanism,” an understanding of existence beyond the anthropocentrism that highlights the agency and value of human beings. Hayles states:

But the posthuman does not really mean the end of humanity. It signals instead the end of a certain conception of the human. . . .
What is lethal is not the posthuman as such but the grafting of the posthuman onto a liberal humanist view of the self. (1999: 287)

Liberal humanists prefer rationalism and evidence, a result of the Enlightenment that elevated human beings as touchstones of intelligent life at the center of a world that exists to be altered and mastered according to their will. However, this entitled reasoning is what ultimately reduces complex posthuman subjectivity to biogenetic capitalistic greed. In Chapter 2, I will expand on

the aforementioned point in more detail through several media examples, but I emphasize the notion of greed as an impulse that skews the ethical underpinnings of technological intervention. The more we see what alterations are made possible through biotechnologies, the more we frame the future of humanity's relationship with technology through a very contracted and pedantic lens of perfectionism. Moreover, emerging biotechnologies that promise to broaden humanity by bringing us into a posthuman future do not focus enough on evolving our perspective from an ethical standpoint.

This leads me to Braidotti's second strand of posthuman development, which centers on the ethics that play into science and technology and the status of the human. In this analytical strand, Braidotti speaks of a "posthuman agreement" determining how biotechnologies have changed what we think counts as human (2013: 40). In this sense, "technological intervention upon all living matter creates a negative unity and mutual dependence among humans and other species" (40), which I believe helps explain the anxieties surrounding human morality when such technologies are introduced. Braidotti cites Peter-Paul Verbeek (2011) who claims human subjects and technology cannot be kept apart, but criticizes his approach as humanist and normative in terms of how that technology is used. If it is true that "technologies contribute actively to how humans do ethics" (Verbeek 5 qtd. in Braidotti), then Braidotti is right to point out the dangers of ethics being measured by humanist, anthropocentric goals. Essentially, our pride in technological advancements should not cause us to be blind to the ethical inequalities they introduce.

Like Braidotti, Wolfe calls for a reconceptualization of our understanding of the entire sensorium of other living beings in relation to our anthropocentric nature. This means that subjectivity itself must be reconceived in a way that does not privilege the human, as dismantling

humanist ideas of the self can help destabilize speciesism. While Wolfe's anti-speciesism approach refers to non-human animals rather than artificial life forms, it is nevertheless a crucial step in foregrounding the human's re-conceptualization within posthumanism, in a way that does not necessarily hinge on a technologically enhanced being. Wolfe points to the Macy conferences on cybernetics (1946-1953) as a starting point for posthumanism, but reminds us that scholars such as Norbert Wiener and Gregory Bateson theorized a model for "biological, mechanical, and communicational processes that removed the human and *Homo sapiens* from any particularly privileged position" (Wolfe xii)⁸. Wolfe argues that to truly evaluate the human, not surpass it or reject it, we need to move away from the "ontologically closed domain of consciousness"(xxv). This means re-imagining the human alongside other living beings and their own ways of interacting and engaging with the world. Overall, broadening our understanding of the human must begin with a shift away from progress and betterment through developments that are only insular to the self.

The Self Before and After the Human

Throughout this dissertation, I purposely avoid using words such as "transcend," "enhance" or "extend" to describe the changes available to humanity through technology use, as this language has transhumanist connotations that center on improving the human beyond its current iteration. The implications of these words are founded on classifications of the human as organic and pure prior to the introduction of technology as intrusively unnatural/non-biological. If we believe the posthuman to be the result of technological intervention, it will be associated with human undoing. In my attempt to broaden the scope of humanity and its existing spectrum,

⁸ Hayles makes a similar statement that predates Wolfe in the chapter "Toward Embodied Virtuality" in *How We Became Posthuman* (1999).

technology as a concept must be more fully examined. To borrow a definition from American sociologist Read Bain in 1937, “technology includes all tools, machines, utensils, weapons, instruments, housing, clothing, communicating and transporting devices and the skills by which we produce and use them” (860). Foucault’s work on technologies of the self extends the meaning of technology to instrumental reason (1988), and one of Stiegler’s definitions of technology is “the pursuit of life by means other than life” (17). Technology is something humans have always used, and despite the apparent humanist undertones within that framing, it is important to avoid viewing technology in its larger sense as something unnatural.

For Hayles, “the posthuman view thinks of the body as the original prosthesis we all learn to manipulate, so that extending or replacing the body with other prostheses becomes a continuation of a process that began before we were born” (1999: 3). The idea of the body itself as a prosthetic technology has been incorporated into various science-fiction narratives that see it as a replaceable or customizable accessory. In the next chapter, I expand on this trope to show how the body as prosthetic does not suggest a vessel with no real connection to the self. The mind does not make up the entirety of the self, nor does it define human identity, as Hayles argues when she claims consciousness is “an evolutionary upstart trying to claim that it is the whole show when in actuality it is only a minor sideshow” (1999: 3). Rather, the self is comprised of an amalgam of mind, flesh, organic and inorganic elements as well as machines, and none of these are more important than the other. The idea of using technology to perfect the biological body as a container assumes that selfhood rests within the conscious mind alone, rather than also constituted by bodily engagements in the world. This is crucial, as it differentiates between the posthuman as a being made up of flesh, machine, and anything else,

and the transhuman, a human extending and enhancing itself using machines. What is more, a human consisting of a cybernetic and biological system does not make the human less human.

The posthuman is situated within the human body's ability to co-evolve with technologies and engage with the world as a technical being, which comes before the historically named thing called "human" or "man." This coincides with Wolfe's assertion that posthumanism "names the embodiment and embeddedness of the human being in not just its biological but also its technological world, the prosthetic coevolution of the human animal with the technicity of tools" (xv). This is similar to Hayles' argument that the posthuman, and thus the self, is made up of various elements with which it evolves. However, Wolfe also categorizes Hayles' posthumanism as a "triumphant disembodiment," believing she advocates for "the sense of being 'after' our embodiment has been transcended" (xv). Wolfe himself "opposes the fantasies of disembodiment and autonomy, inherited from humanism itself" (xv), but I disagree with his allegation that Hayles' posthuman advocates for disembodiment or opposes embodiment at all.

I will speak more about Hayles' argument regarding putting information back into the body and embodiment in the next chapter, but she comments on this here: "Located within the dialectic of pattern/randomness and grounded in embodied actuality rather than disembodied information, the posthuman offers resources for rethinking the articulation of humans with intelligent machines" (1999: 287). Wolfe criticizes Hayles' idea through R.L. Rutsky, who argues that the posthuman must be something more than just "after" the human, as this is merely a continuation of the humanist narrative rather than a complete mutation (Wolfe xvii). While it is true that the posthuman cannot be a perpetuation or improvement of an older, established mode of thought, Hayles' posthuman *is* a complete mutation, for it involves coming to terms with a subjectivity that is not simply a transition between human and what comes after, but what came

before and will continue to come. This is why the title of her book does not signify becoming posthuman, but rather “how we became,” implying a cyclical idea that we have always been simultaneously human and posthuman, depending on our perspectives.⁹

It is important to establish that the posthuman cannot be theorized as the prolonging of the human via technological innovation, for this merely extends familiar humanist goals. This is why Hayles rejects Moravec’s proposition about downloading consciousness (1988), seeing it neither as posthuman nor as an innovative conceptualization of the human’s future. She states: “When Moravec imagines ‘you’ choosing to download yourself into a computer, thereby obtaining through technological mastery the ultimate privilege of immortality . . . , he is not abandoning the autonomous liberal subject but is expanding its prerogatives into the realm of the posthuman” (1999: 287). The translation of human bodies into information makes the potential for “humanness” too narrow, and with respect to posthumanism, it is ineffective to encourage the extension of the human as it currently exists.

Technological Infiltration and Cyborg Discourse

Posthumanism for Hayles is characterized by a loss of subjectivity based on bodily boundaries, since these boundaries are based on dualisms that place restrictions on notions of humanness. In my attempt to rework posthumanism, I engage with Hayles and Braidotti, who both place emphasis on reworking individualistic subjectivity, as it currently assumes humans are closed systems, which re-enforces the idea that technology is a foreign, infiltrating object

⁹ Hayles admits her title suggests “multiple ironies,” if taken as a transition away from the liberal humanist subject called “human” to its replacement “posthuman.” Yet she also claims, “[. . .] these changes were never complete transformations or sharp breaks; without exception, they reinscribed traditional ideas and assumptions even as they articulated something new. The changes announced by the title thus mean something more complex than ‘That was then, this is now.’ Rather, ‘human’ and ‘posthuman’ coexist in shifting configurations” (1999: 6).

encroaching on human essentialism. For example, Marshall McLuhan may have written about technology and media as the extension of man (1964), but viewing technology as the tool and the body as a separate entity that picks up the tool separates the human from technology. If the tool is only seen as something that extends and enhances, it also suggests a permanent alteration of the body and the removal of the human's purity.

Impressions of the human turning into a cyborg with the introduction of technology is founded on the idea that technology and man were once separate. Despite many misinterpretations that I will review in Chapter 2, Donna Haraway's cyborg does not promote the technological utopian discourse that sees technological advancements extending human capabilities biologically, which is more accurately transhumanism. In the oft-cited *Simians, Cyborgs and Women*, Haraway explores the posthuman by using cyborg imagery to outline how universal, totalizing theory limits the evolving conception of the human. While she argues that "communications technologies and biotechnologies are the crucial tools recrafting our bodies" (164), her rendition of the cyborg inverts the traditional cyborg trope that has come to represent the merger of humans and robots/machines. The cyborg as theorized by Haraway has laid the foundation for the technologically hybridized subject, which can only exist through the blurring of boundaries in a posthuman sense. I position my own argument alongside Haraway, who rejects philosophies of the science-fiction cyborg that provoke images of a being infiltrated and overtaken by technology.

In her article "The Cyborg Habitus: Presence, Posthumanism and Mobile Technology" Julie Czaja sees the posthuman and the cyborg as indicators that "the traditional, organic term human no longer accurately describes the self" (1). This is not to say that a posthuman being equals the obsolescence of the human, but rather that it confirms the need for the devolution of

this understanding of identity. Posthumanism represents an opportunity to correct this and also “participates in re-distributions of difference and identity” (Halberstam and Livingstone 10), suggesting identity is unfixed, particularly when the human can change in tandem with technological advancements. To further understand how the posthuman has been regarded in the mainstream media as well as amongst scholars, we must also detangle the image of the cyborg, which I frame as a human being interconnected with technological apparatuses. Yet the cyborg is often viewed as a human employing technological apparatuses as attachments and extensions, which signifies two things: 1) The human is considered a closed system, bound by the flesh of the body; 2) Technology is an external force that, once penetrating this boundary, transforms the human into a cyborg. These conventions contribute to our limited understanding of the human and, by extension, the posthuman.

I engage with Haraway’s cyborg to show that technological mergers should be taken not as literal permeations, but as disruptions of the ideology of the enclosed human subject that seeks to break free of the body. The posthuman need not involve a technological implant or invasive procedure, but a relationship between humans and technologies. Thus, Haraway’s cyborg offers the potential for “alternative structures of otherness” (201) as it rejects binaries that philosophers once considered intrinsic. Her refusal to demonize technology encourages a framework for a posthuman that adapts to its evolving surroundings and is not in opposition of the natural, which Braidotti illustrates as well:

Technology is at the heart of a process of blurring fundamental categorical divides between self and other; a sort of heteroglossia of the species, a colossal hybridisation which combines cyborgs,

monsters, insects and machines into a powerfully posthuman approach to what we used to call 'the embodied subject.' (2006a)

Here, technology catalyzes interactions that show the failures of categorical divides between humans, machines, non-humans and spaces. In the next chapter, I use film and television representations of the cyborg to illustrate how misguided constraints placed on human/technology relationships prevent these encounters from being viewed as entanglements. When technology is seen as the adversary, humanity is in danger of subversion, but when technology is lauded as the hopeful answer to extending human life, posthumanism as escapism becomes a more acceptable outcome for technology-human mergers. Both of these scenarios still support a dualistic separation between human and technology, and perhaps no better stance exemplifies this position in mainstream culture than the use of mobile phones, which I will explore in Chapter 3.

Diverging from the Enclosed Human Subject

The challenge involved in finding the correct language to describe the shift humans experience when engaging with technology is nestled into a well-established belief system about the human as an enclosed, self-contained subject. Even though Hayles' posthuman is conceived to be "seamlessly articulated with intelligent machines" (1999: 3), if the human's body is considered a boundary, everything the human engages with will become an extension. Yet the assumption that humans are informationally closed has been disproven multiple times. William Winn, in "A Conceptual Basis for Educational Applications of Virtual Reality" refers to the work of biologists Humberto Maturana and Francisco Varela in an attempt to reject constructivist claims about the body as a boundary:

Living organisms, including humans, do not take information in

from the outside, but rather react to “perturbations” in the environment through the adaptation of existing structures within them. Interaction with the environment therefore does not add “ingredients” to an organism’s physical structure or symbols to its mental structure, but causes qualitative and quantitative changes in the structures that already exist. (Winn 4)

What this means is that the environment we perceive is the product of our structural adaptation to various external influences, since there is no standard objective world, no matter the species. Constructivists argue that species learn and evolve from experiences, and Winn specifies that this should not result in the birth of a new organism with added structures. Rather, my approach to the posthuman as a transient being imagines the open system continually forming through such entanglements.

With respect to relationality, Ferrando’s assessment of posthumanism is useful to illustrate how an existence might form through spiritual bonds. She claims, “posthumanism offers a theoretical invitation to think inclusively, in a genealogical relocation of humanity within multiversality . . . and alterity within the self” (2014: 156). For Ferrando, posthumanism is a post-dualistic state of being outside the boundaries of scientific and even technological domains, and is traced back to spiritual knowledge and its all-encompassing signification. The spiritual aspect, she argues, has not been acknowledged in posthuman studies enough, which is why we need a non-hierarchical, ethical approach to “technologies of existence” that do not refer to enhancement technologies such as robotics and A.I. (2016: 243). Ferrando’s spiritual approach illustrates that our relationships to bio-technology within posthuman studies can imagine a

“technology of the self”¹⁰ as well as an “open-source technology of existence” (2016: 253). Open-source technology in this sense suggests humans are not restricted to hegemonies, and spirituality can offer methods of hybridization to challenge fixed categories. It is important to break free of the idea of human as a whole, complete entity, and Ferrando’s approach mirrors my own when she claims, “posthumanism does not recognize humans as being exceptional, nor does it see them in their separateness from the rest of beings, but in connection to them” (2016: 246). I point to this to illustrate the importance of rejecting individualism in favor of collectivity and centering posthuman discourse on an interconnectedness that includes post-anthropocentrism.

Like Braidotti, Ferrando calls for a re-evaluation of subjectivity and non-hierarchical view of the human, non-human and earth, as a “post-individualistic notion of the subject, which is marked by a monistic, relational structure” (2013: 87). Relationality is conceivable when existence, as Ferrando argues, “contemplates a non-separation between the inner and outer worlds” (2016: 244). This point is significant to my formation of a human that rejects the polarity of an internal and external identity, a topic I will expand on in Chapter 3 when discussing the individualized self. Ferrando’s methodology is particularly helpful because it explores post-dualistic structure within the Indian philosophical concept *advaita*, which translates to “non-two” and “non-dual” (Rambachan 2006; Timalisina 2009 qtd. in Ferrando 2016: 247). In this sense, the self is made up of the inner essence of an individual (*atman*) as well as transcendent existence (*brahman*), which are viewed as equal and non-hierarchical. Though I will not be examining the pluralistic sense of self in the same way that Ferrando does, I support her assessment that the diversity of posthumanism sees pluralism as the manifestation of

¹⁰ Here, Ferrando refers to Foucault’s post-mortem publication in 1988, “Technologies of the Self: A Seminar with Michel Foucault.”

the one, which she sees as the “pure potential of being” (2016: 247). Though the word “pure” is problematic with its essentialist undertone, in the same vein as Wolfe, Ferrando claims: “in the post-dual technogenesis . . . there is no pure beginning, everything comes from something else” (2016: 247). This indicates that a spiritual politics of existence is always evolving and relies on interconnections, as “the machine is not the other, since the human itself is seen as a process developing within a material net, a hybrid, a constant technogenesis” (2016: 248-9).

The notion of technogenesis offers an alternative structure to the assumption that technological mergers are only meant to propel the human forward. In her newer work, *How We Think: Digital Media and Contemporary Technogenesis*, Hayles attempts to derail this conjecture:

Contemporary technogenesis, like evolution in general, is not about progress. That is, it offers no guarantees that the dynamic transformations taking place between humans and technics are moving in a positive direction. Rather, contemporary technogenesis is about adaptation, the fit between organisms and their environments, recognizing that both sides of the engagement (human and technologies) are undergoing coordinated transformation. (2012: 81)

Here, Hayles demonstrates how dynamic activity between humans and technology in a broad sense need not be reduced to transhumanist advancement, but can manifest as an exchange. In order to engage in this kind of relationship, it is necessary to acknowledge that posthuman ontology should be free from an absolutist model, and no single perspective should be seen as the complete one. Ferrando also argues this when discussing pluralism, which is useful for seeing

posthumanism as a doctrine of non-absolutism that dictates how reality can be perceived through various points of view. She claims, “posthumanism is a perspectivism, according to which every perspective is valuable and should be acknowledged and respected” (2016: 250). I argue that with a perspectivism that does not privilege just one gaze or direction, the posthuman can shift the unitary humanist subject into a subject interdependent on various connections.

The Posthuman Challenge

Braidotti’s “Posthuman Challenge” invites scholars to “combine critique with creativity in the pursuit of alternative visions” (2013: 54), employing posthumanism as a historical moment where humanism and anti-humanism are no longer in opposition. In recognizing that humanism can no longer represent the potentiality of the human subject, I propose a posthumanism that can make room for the always-transient human and its relationship to technology through entanglement, without delineating the end of the human as a species. For Braidotti, the crisis of humanism manifests in the emergence of postmodern structural Others through emancipatory movements, including but not limited to women’s rights, anti-racism, de-colonization, and pro-environment movements. By representing the voices of Others who have been sidelined by the structures of modernity, posthumanism can decentralize the dominant subject-position, not merely by being anti-humanist (2013: 37). This posthumanism allows for the creation of alternative models of the subject intended to bring about the displacement of the Human that occupies a hierarchical position of privilege that is closest to god from its central position.

Building on the first two strands of posthuman development Braidotti outlines, the third major strand does not regard the shift to posthumanism as inevitable. Rather than viewing it with normative ambivalence, Braidotti moves beyond the analytical to create an affirmative perspective of the posthuman subject. Responding to the productive potential of post-

structuralism, anti-universalism and anti-colonialism¹¹, the affirmative posthuman works towards a shared understanding of humanity as a whole. Braidotti leans on environmental theory to formulate an alternative to undo the “humanistic emphasis on Man as the measure of all things and the domination and exploitation of nature and condemns the abuses of science and technology” (2013: 48). This alternative calls for a self-reflexive approach to subjectivity that moves away from the liberal humanist center and into “an eco-philosophy of multiple belongings, as a relational subject constituted in and by multiplicity . . . , an enlarged sense of inter-connection between self and others, including the non-human or ‘earth’ others (2013: 49). Since the posthuman offers a space for the development of a nomadic subjectivity that detaches from a comprehensive sense of self, I argue we can imagine it existing amongst other actants¹² in an interactive capacity.

In the interest of refashioning the decentralized self as relational, Braidotti insists on a rejection of self-centered individualism, as this represents the pinnacle of Western entitlement in the age of globalization. Braidotti’s criticism of the humanist center is valid, but I do not believe the non-unitary subjectivity of the posthuman must always be devoid of a sense of the individual. The individual is what constitutes an embodied awareness that is necessary for the creation of selfhood, and our sense of being in the world comes from establishing a personal sense of belonging that emerges from subjective experiences with humans, non-humans and environments. Braidotti recognizes that with the rejection of self-centered individualism lies the potential for “a new way of combining self-interest with the well-being of an enlarged

11 See Braidotti’s various examples in *The Posthuman*, pg. 46-47.

12 See Latour’s usage of the term “actant” in *Pandora’s Hope: Essays on the Reality of Science Studies* (1999), where a teleological being plays any of a set of active roles in an engagement with other actants in an intertwining system. Rather than actor or agent, actant equalizes humans and non-humans as capable of agency (1999: 180).

community, based on environmental inter-connectedness” (2002: 48). In support of this idea, I approach the relational subject’s sense of agency through this inter-connectedness, which can be ratified through relationships between humans and non-human actants.

For Bruno Latour, there is no need for a hierarchical dichotomy of human subject and non-human object, and I concur with this rejection of the subject-object distinction as it helps to contextualize actants working collectively, as does actor-network theory (ANT). ANT is a material-semiotic approach to the ongoing conversation surrounding society’s relationship to non-human entities including technology, and can be traced back to three major theorists: Latour, Michel Callon and John Law (David). ANT suggests that “everything in the social and natural worlds is a continuously generated effect of the webs of relations within which they are located” (Law 141). One use of ANT in Latour’s work is to broaden notions of the “social,” a word he argues has been used as a blanket statement to describe a stabilized notion of how society functions (2005). In this example, rather than trying to decipher society as something that has already been assembled, ANT encourages re-examinations of the connecting parts within a system that is always changing.

To establish a new vision for posthuman subjectivity, it is necessary to disentangle not only posthumanism from humanism, but human identity from the essentialist Human to create an “inclusive posthumanism” established within a continuous enactment of relations alongside other actants within systems. ANT also allows for the dissection of content within an assemblage, a concept that helps determine relations between human and non-human entities in terms of their performative actions, which I will return to in Chapter 4. Assemblage or *agencement* from Deleuze and Guattari describes a multiplicity of heterogeneous entities that relate in symbiotic union. The assemblage does not have hierarchies, nor does it have an organizing body that

controls the outcome: “The assemblage’s only unity is that of co-functioning: it is a symbiosis, a ‘sympathy’. It is never filiations which are important but alliances, alloys; these are not successions, lines of descent [. . .]” (Deleuze and Parnet 69). My inclusive posthuman framework is modeled on an interpersonal construction of identity involving humans and non-human actants, which the idea of a non-hegemonic assemblage supports. In Chapter 4, I apply this posthuman model to explore the human’s interconnections with technology and environments through an illustration of assemblage that connects to the idea of the apparatus. Foucault considers the apparatus, or *dispositif*, as “a system of relations” (1980: 194) that establishes the bonds between elements. These elements all experience “shifts of position and modifications of function” (1980: 194), suggesting that no element is static primarily because it emerges through interplay. A key point for Foucault is viewing the apparatus as a “formation which has as its major function at a given historical moment that of responding to an urgent need” (1980: 195). I see the urgent need of today being signaled by the changing ontology of the human in flux with technology. This should not imply an inevitable transformation or even a displacement of the human as a species, but the need to move away from measuring reality and relations according to humanist ideas and instead focusing on the configurations between humans, non-human actants, and environments.

In Chapter 4, I also build on the work of Karen Barad to address the relational ontology of the posthuman by recognizing subject and object as interchangeable and existing in reciprocity to construct one another. Barad describes the role of human concepts in scientific practice and in the nature of apparatuses, claiming, “apparatuses are to be understood not as mere laboratory instruments, static instrumental embodiments of human concepts, but as open-ended and dynamic material-discursive practices” (Barad 334). These practices are how I envision the

entanglements that occur when materials, beings and bodies are not viewed as separate or bordered. Rather, bodies are rhizomes¹⁴, always gathering and bonding with multiplicities, moving with dynamisms of intersecting materials. Like Barad, I believe that herein lies the true measure of agency, when the human is conscious of his/her position within a larger system, but with the acceptance that humans have never had control over this position. She believes in “a posthumanist understanding that does not fix the human (human concepts, human practices, human knowledge) at the foundations of the theory” (334). Thus, her apparatuses are made of material configurations that are not human-centric, even though humans still have a role to play, as she argues:

In my posthumanist account, meaning is not a human-based notion; rather, meaning is an ongoing performance of the world in its differential intelligibility. Intelligibility is usually framed as a matter of intellection and therefore a specifically human capacity. ... [I]ntelligibility is not an inherent characteristic of humans but a feature of the world in its differential becoming. (335)

This refashioning of human agency is instrumental to demonstrating the posthuman’s relationships of exchange when engaging with technologies to move about in the world. Humans do not control the construction of apparatuses, but play an integral part in the interactivity between emergent materials. I believe the human’s role is revealed once we separate the posthuman from its humanist counterpart, which emphasizes Braidotti’s earlier point regarding

¹⁴ In Deleuze and Guattari’s thinking, the rhizome is a philosophical concept that sees all manner of things in the world as interconnected and constantly evolving, though these connections are not always visible: “[U]nlike trees or their roots, the rhizome connects any point to any other point . . . ; It has neither beginning nor end, but always a middle (milieu) from which it grows and which it overflows. It constitutes linear multiplicities within dimensions having neither subject nor object [...]” (Deleuze and Guattari 1987: 21).

the individual's conception of community and collectivity over self-centeredness.

Inclusive posthumanism can broaden our understanding of the human by proposing relationships with technology as inter-relational exchange and entanglement. From a humanist standpoint, technology is often posited as an unnatural, infiltrating component that encroaches on our unique humanness, but it is possible to recognize it as part of a larger apparatus within which humans can interact without the expectation of mastery and control. In the interest of human/machine harmony, Masahiro Mori, in "The Buddha in the Robot" (1974) emphasizes, "there is no master-slave relationship between human beings and machines. Man achieves dignity not by subjugating his mechanical inventions" (179). I highlight this passage not only to distinguish between Western and non-Western ontologies, but to point to the need for a shifting paradigm that sees the human existing in a constant state of becoming alongside technology through entanglements that focus on participation and discovery. This becomes possible when the human reacts to disruptions in the environment and adapts in the way that Winn argues, where entanglement causes a shift in perspective and in formation, but does not add elements to the overall structure.

In the next chapter, I show how ideas surrounding technological engagement are often circulated within mainstream culture as methods of radical enhancement through attachment. This is where I believe misinterpretations of posthumanism have re-affirmed humanist-inspired transhumanism instead of moving away from it. The humanist framing of our relationships with machines continues to encourage fears involving technological takeovers and the loss of some arbitrary concept of "natural" humanity. In the next chapter, I demonstrate how these anxieties are readily apparent in cultural critiques as exemplified by speculative literature, film and television.

Chapter 2:

Bad Posthumanism and Fearful Wish-Fulfillment: Androids, Cyborgs, and Uploaded Consciousness

Hollywood routinely tells stories about the end of humanity, be that via alien invasion or via ecological disaster, suggesting both that humans are frail, and also that they are not as dominant or technologically advanced as they think they are.

William Brown, "From DelGuat to Scarjo," 15

Technological Utopianism

In the previous chapter, I provided a deconstruction of various theoretical and academic interpretations of posthumanism, while outlining Braidotti's three strands of posthuman thought as a launching point for my own iteration of human/technology relations. Braidotti's critical posthumanism is a move beyond anthropocentrism and maps the human apart from humanist ideologies that see the posthuman as a futuristic vision of human transformation. In this chapter, I survey the posthuman figures often presented in popular culture: cyborgs, androids, and fantasies of uploaded consciousness, to expose the disquieting anxieties surrounding technoculture that ultimately limit our understanding of the human's capacity to engage in relations with technology. Popular posthumanism is less concerned with broadening the figure of the human beyond its current iteration, than clamoring to keep it deeply enmeshed within transhuman philosophy. Many posthuman theorists (Wolfe, Ferrando, Nayar) have attempted to distance themselves from transhumanism and strive to re-focus the conversation from human enhancement to posthumanist thinking, with Wolfe going so far as to call transhumanism "bad posthumanism" (xx). Yet posthumanism continues to be interpreted as the next stage of transcendent humanity - the idea that technology alters humans to the point where they are

granted enhanced cognitive and physical capabilities that exceed their biological limitations. There are several assumptions that go along with this, primarily that human limitations exist and ought to be corrected through external means. Technology is viewed as something external from the human, so its presence is classified as an intervention that interrupts the organic human condition, an idea which is in itself based on essentialist views. Additionally, because technological involvement is often viewed as progressive, human/machine encounters are always already viewed within a transhumanist lens.

Wolfe's "bad posthumanism" presents technology as a utopian solution that supports our desire to overcome anything restricting us from a limitless existence. The supplemental transhuman classification suggests technology exists as a progressive tool for elevating humans, correcting any perceived barriers that challenge humanist goals. As an ideology, technological utopianism is based on the premise that advancements in science and technology will allow ideal living standards to exist, such as ending sickness, aging and even death. Media theorist Douglas Rushkoff presents multiple claims of technological utopianism, the first being that technology is intended to expand the "best" aspects of human nature, including opening lines of communication, perpetuating collaboration and community, and improving interpersonal relationships through knowledge sharing (2004). Since technology is intended to increase efficiency and consumer choice as it replaces problems created by old technologies, he argues that new devices are designed to allow us more manipulation, choice and control over our interactions. As social interactivity continues to progress, Rushkoff believes even the unforeseen impacts of technology will be in some way positive. At its core, the implication here is that technology fosters individualistic thinking, diluting traditional authority structures and redistributing power to the people. While this idea is democratically promising, this is precisely

the type of individualism Braidotti is against when she argues that we should reject self-centeredness in our re-imaginings of the human.

Rushkoff's techno-utopianism is predicated on technology as a vehicle for self-expression, where individuals are able to reclaim their place within pre-determined social configurations. From this perspective, technology is believed to promote human efficiency and choice, as well as the abolishment of economic scarcity, suffering, and even death. Yet not only does this kind of technological utopianism rely too heavily on ideas of progress, it inhibits technology from being seen as anything but a tool for human advancement. As I suggested in the previous chapter, the role technology plays alongside our understanding of humanity can be much broader and more complex. The *post* of posthuman can be seen as an alternative interpretation of the human and not an entirely new existence, but this mindset is difficult to adopt if we categorize the human and technology as opposing forces. What is more, when technology is glorified as unequivocally advancing, it is heralded as a solution to perceived limitations we believe we must overcome. Our efforts to continually improve technologies intended for human betterment creates a cyclical power struggle: We strain to maintain control over tools that must logically be designed to surpass our limitations if we hope to use them to reach our imagined potential. On the one hand, technology represents the utopian promise of the new Renaissance of cultural, social and political advancements. On the other hand, the more cautionary interpretation of technology envisions an addictive, infiltrating force that threatens to dismantle our sense of humanity, our connection to others, and our sense of presence within physical space. Yet this dichotomy is essentially false, as technology is only viewed in these divisive terms because of its proclaimed separation from human nature.

The prefix *post* in posthumanism suggests a double meaning, signifying a desire or a need to go beyond humanism or the human itself. The latter has a transformative implication, as technology is seen as something added to the human as an extension or enhancement. The human organism is then perceived as undergoing a permanent shift, changing into something entirely new or absorbing the qualities afforded by the technology. Though human/technology mergers technically consist of any interaction between a human being and a technology or tool, the idea of a merger brings forth images of man/machine hybrids such as cyborgs and even androids, which contribute to bad posthumanism. My goal is to show how misconceptions about these mergers reinforce the division between human (natural) and technological (artificial) by portraying technology as an external, otherworldly force that permeates humanity. Though technological innovation has been both positively and negatively received, my focus in this chapter is on its portrayal as an unstoppable force of inevitable change for humans who encounter it.

To explore the trepidations of technological innovation from a sociocultural perspective, it is useful to consider how human/technology encounters are framed through films and literature. Films reflect trends in popular opinion and biases distilled from society, and those within the science fiction genre in particular have a tendency to present views of the future as commentaries on the present. The tropes I will discuss reveal anxieties about the impermanence of humanity's place in the technological present and future, which inform how the posthuman is shaped in the cultural mind.

Three Types of Posthumanism in Film

Science fiction films and television have diverse ways of demonstrating how humans interact and engage with technology, which I classify into three representations of

human/technology mergers: Androids, cyborgs, and uploaded consciousness. It is my belief that these three figures mis portray the posthuman by encouraging an ontological framing that sees humans and technology separated by a natural vs. artificial dichotomy. The classification of technology as non-natural considers the introduction of any artifact as a disruption to a carefully crafted image of humanity. In “Posthumanism in Film and Television,” Hauskeller, Philbeck and Carbonell argue that the “fear and wonder of the posthumanist turn” (2015: 5) has shifted the concern from technology’s place in our world to our place in the technological world: “We, the protagonists of our own historical drama, have been slowly demoted from the leading role of creators and masters of technology to that of technological co-dependents and co-agents” (2015: 5). Yet they also concede that this narrative “has been filled with cognitive biases, blind spots and wishful thinking” (2015: 5) adopted from categorizations and beliefs that have discouraged other considerations.

The initial optimism of technology and its promise to help us control and remodel the world has been discussed at length by Martin Heidegger, one of the foremost thinkers on the topic of ontology, or the study of Being. *Being and Time*, arguably his most influential work, uncovers how humans determine the meaning and characteristics of things within the context of how they are used. Heidegger specifically re-directs this inquiry towards technology in his later work “The Question Concerning Technology” arguing, “everything depends on our manipulating technology in the proper manner as a means” (1977: 5). The purpose of this question with reference to technology is “to prepare a free relationship to it” (1977: 3), as only truth allows us to enter into such a relationship “if it opens our human existence to the essence of technology”

(1977: 5). Heidegger seeks out this essence¹⁵, not through what technology is, but through the way in which it develops its course. The essence of technology cannot be thought of as technological, he argues, and to conceive of our relationship to it is to recognize that it is not neutral because we are chained to it, and evading it will only blind us to its purpose. Whether or not this means that technology has an autonomous purpose of its own, I am more concerned with the two-part definition of technology as means to an end, but also a human activity. These belong together, “for to posit ends and procure and utilize the means to them is a human activity” (1977: 4). For Heidegger, if technology is a means to an end, we see it as something to master, and this need becomes more urgent as it slips from our control. At the same time, technology is more than just a means, but a way of revealing a truth or an opening for knowledge.

My purpose for engaging with Heidegger’s technological essence is to complicate the notion of technology as a tool for human use and explore its potential to reveal alternative entanglements. I will repeatedly return to Heidegger throughout this dissertation to question why technology is believed to have sway over human activity, and it should be noted that I do so with stipulation. In *Ontological Politics in a Disposable World: The New Mastery of Nature*, Luigi Pellizzoni points to the “puzzling” challenge of positioning Heidegger in relation to post-constructionist scholarship. For example, Derrida has notably criticized Heidegger’s privileging of humans as advocating the “profoundest metaphysical humanism” (Derrida 12), which does not depart from anthropocentrism. Indeed, Heidegger differentiates humans from other entities, insisting on an unbridgeable separation of humans and animals based on language. Yet Pellizzoni

¹⁵ Heidegger’s use of the term essence comes from the German noun *wesen*, which translates to “enduring as presence,” or used as a verb, “to come to presence.” Presence here refers to the revealing, the unconcealment that is brought forth by, for instance, nature and art, that both bring truth to presence and to realization (Heidegger 1977: 3).

argues this division does not necessarily suggest a hierarchical supremacy of humans, but makes “a case for a respectful relationship with nature and for a reorientation of technology in a non-dominative direction” (8). As I will illustrate in the examples that follow, when the human is viewed as a complete, closed system that can only evolve when an external element is introduced, technology is reduced to a means to an end, when it can be much more. In contrast, a human/technology relationship that is specifically non-dominative rejects the idea that technology can only be viewed with a lens of human utilization.

In science-fiction films, technologies such as robotics, artificial intelligence and machine learning are presented as solutions to problems that need to be solved from a Western humanist standpoint. Concerns surrounding mortality, including but not limited to aging, sickness and death, are portrayed as obstacles humans can overcome with the right utopian technological solution. Simultaneously, these same films portray technologies as threatening to autonomously overpower or destroy mankind. Many cinematic representations of humans working alongside machines, or humans augmented by machines result in a power-struggle where the preservation of humanity becomes the highest priority. In these media, not only is there apprehension about intelligent machines undermining humans, but as visions of SF begin to resemble current realities, we fear that our identities will unravel as well. As Hauskeller et al. argue, human identities are comprised of abstract concepts and traditions we participate in, and our individualism is predicated on our roles as creators and masters of technologies. Within this context, the possibility of being demoted by our creations not only displaces us but also the idea of “humanness” as the source of our agential power. The loss of human identity is a central concern in films featuring human/technology hybrids, and the more technology is portrayed as a permeating force that can and will change us, the more we resist it. Yet there are intentions

behind the creation of every artificially intelligent machine, or technological enhancement meant for humans. By examining the rationale behind both androids and cyborgs, it becomes clear that they serve a dual purpose both fictionally and factually: to indicate what we as humans are capable of creating, and what we as humans believe we lack.

Androids and Human Specialness

While cyborg narratives take the human/technology merger motif literally, imbuing a human with technological apparatuses intended to enhance, androids/humanoid machines are only hybrids in terms of their design. They are machines that look like humans, with programmed human characteristics and traits such as imitative voices, speech patterns and gestures. The android, while not technically a human that is technologically advanced, is representative of humanist ideals of exceptionalism and entitlement. To properly explore how the representation of androids on film and television informs our relationship with artificially intelligent technology, it is necessary to establish why humanoid robots have begun to play such a large role in how we understand our existence alongside machines, which informs our conception of human identity.

In “Androids and the Posthuman in Television and Film” Kevin LaGrandeur argues that 20th century films featuring androids represent the “primal fear of being ground up in the gears of industrialism” (113), while 21st century films use androids to express fears associated with species creation and human displacement. This all stems from the fragility of human exceptionalism, and the dread that creating a superior humanoid being may confound the hierarchy of master and slave. LaGrandeur considers the posthuman to be something separate from humans entirely, which is why he excludes cyborgs from his discussion but cites androids such as Robot-Maria in Fritz Lang’s *Metropolis* (1927), the titular character in *The Terminator*

(1984) and David in *Prometheus* (2012). These androids essentially function as assistive tools, designed to carry out tasks for their human creators. At the same time, they have an uncanny ability to represent “the posthuman spectre of our evolution into a human-machine hybrid species” (LaGrandeur 118). This means the android occupies the space of the subservient Other while also providing a vision of superlative humanity that is seemingly attainable through technological augmentation. The android figure is desirable from both perspectives because it sanctions the human’s position of authority over its own creation and drives forward the goal of perfectibility inspired by what roboticist Rodney Brooks calls “human specialness.”

My usage of Brooks is intended to demonstrate an example of “bad” posthumanism while providing context for the Human’s fixation on upholding its prevalent status over so-called lesser races.¹⁶ In *Flesh and Machines: How Robots Will Change Us*, Brooks argues that the two largest blows to human specialness were discovering that the Earth is not the center of the universe, and that humans evolved from apes. Evidence of evolution in Charles Darwin’s *On the Origin of Species* convinced us we were not so different from our non-human counterparts. Yet this did not stop us from validating our specialness on Earth through Western religious dogma and the idea that god’s plan involves an “upward movement throughout evolution toward us as the pinnacle” (Brooks). In practice, Brooks claims humans were able to acclimatize to being descended from apes through the mindset that “lesser races” of humans from Africa were closer to these animals than the elevated white European. In the previous chapter, I referenced the Western humanist subject that has dominated visions of contemporary human identity. The tendency for humans in

¹⁶ Though not the first use of this concept, the delegation of a “Master race” during the mid-19th century was prominent in master-slave race relations and used to justify the “subgeneation” of inferior races to whites. See John H. Van Evrie, *White Supremacy and Negro Subordination, Or, Negroes a Subordinate Race and (so-called) slavery its normal condition* (1861).

positions of privilege to demote their fellow humans into categories of Otherness has carried into the treatment of non-human animals as well as artificial life forms. Entitlement is linked to a fear of obsolescence, and I see the drive to maintain superiority as a reaction to the realization of our mortality.

Brooks claims advancements in programming and artificially intelligent machines of the 1950's and 60's forced humans to confront their physical and biological inferiorities. This challenged the notion of specialness and inspired us to correct attributes we believed were preventing us from reaching our full potential. Subsequently, we as humans have developed machines to infiltrate new realms and expand our influence, but in doing so, we have become convinced that their ever-increasing intelligence poses a threat. Brooks points to the correlation between Alan Turing's influential 1950 paper "Computing Machinery and Intelligence" and Hollywood films that began portraying mankind overtaken by intelligent machines with electronic brains. This idea has only intensified in the last few years as we remain challenged by intelligent machines outperforming us, even though this is exactly what we intend when we create them.

Machines that can calculate faster and more accurately than humans are attractive because they symbolize an objective towards excellence. Brooks argues robots are also appealing because they can "mindlessly work for us" as slaves, and asks whether we will start empathizing with them if they have feelings. It is worth noting that I regard Brooks with considerable reservation, since his writings suggest it is perfectly reasonable for humans to delineate whether artificial life forms and non-human animals have aspects of beingness. For Brooks, beingness is what humans grant to non-humans based on the recognition of emotion, because emotion appears to be what defines human exceptionality. Brooks argues we cling to emotion because it

differentiates us from animals in terms of rationality and sets us apart from machines, who defy us through computational intelligence. To maintain our place of superiority, “we allow some emotions to animals - we increase our tribe to include them in the exclusion of machines from our intimate circle” (Brooks). This suggests we validate animals’ emotions by anthropomorphizing them, but “give” androids emotions that we measure based on how closely they exhibit feelings that mimic our own. There has also been a tendency to classify emotional range from a decidedly Western perspective that can be traced to Darwin’s “universality hypothesis.” This hypothesis argues that the range of human emotion is identifiable through six basic facial expressions (happy, surprise, fear, disgust, anger, and sadness). The criticisms against this hypothesis suggest that Westerners judge whether a being exhibits feelings through a very insular and exclusionary frame of reference. ¹⁷

Take for example the robot Sophia, a social android developed in 2015 by Hanson Robotics in Hong-Kong. Sophia was developed to showcase *SingularityNET*, an artificially intelligent brain programmed to make simple conversation on predefined topics, with voice-recognition and learning abilities intended to make her responses more sophisticated over time (“Sophia (robot)”). Despite the fact that some AI experts have panned Sophia’s capacity for consciousness¹⁸, the image of a woman-shaped robot allegedly modeled after actress Audrey Hepburn was designed not only to demonstrate the sophistication of an AI brain, but to support

¹⁷ Darwin argued for the universality of these visual expressions regardless of culture or geography in his third major work, *The Expression of the Emotions in Man and Animals* (1872). The hypothesis has been criticized by several psychologists, most notably James A. Russell in 1994 and again with Nicole L. Nelson in 2013, respectively. Additionally, in “Facial expressions of emotion are not culturally universal” (2013) Rachel E. Jack et. al challenge the idea of universal biological expressions by comparing groups of 30 Western and Eastern individuals. The findings suggest that with respect to the six basic emotions, Eastern individuals exhibit distinct emotional differences in their eye activity.

¹⁸ See comments by Dr. Joanna Bryson, a University of Bath researcher of A.I. ethics in an article by James Vincent in *The Verge*, “Pretending to give a robot citizenship helps no one” (2017).

the (male) privileged human's position as creator of (subservient and aesthetically pleasing female) beings and delegator of basic human rights. Those in positions of power generate artificial life precisely to their liking and in their image, crafting a symbol not only of supremacy, but of the desire for human perfection.

The creation of androids to reflect this desire and to sustain the locus of humanity as masters of their creations has been highly popularized in media. The television series *Westworld* (2016-), a reboot of the 1972 film of the same name, explores the discriminatory rationale behind the construction of an entire theme park filled with artificially intelligent beings. Referred to as "hosts," these androids play out elaboratively-designed storylines to fulfill thousands of narratives for the human "guests" to indulge in while in the park. The hosts' personality profiles are informed by pre-coded backstories that force them to function as supporting characters that drive various Wild West fantasies for the guests' amusement. In "'Westworld,' Race and the Western" Aaron Bady traces the term "robot" to the 1921 play *R.U.R. (Rossum's Universal Robots)*, which portrays of an army of robot workers who turn on their masters. The Czech writer Karel Čapek used the term *robotnik* in the play, a variation on *robota*, which is Czech for "heavy labour" or "serf" (Bady). *Westworld* follows the model of many robot stories that center on the fight against exploitative human enslavers, but it also pays special attention to the reclamation of the American West by the human characters. Every pre-coded narrative in *Westworld* plays out like a classic American Western film involving gunfights, visits to saloons, and, most importantly, fighting against a violent Indigenous group dubbed "Ghost Nation."

It is not coincidental that one major plot follows the adventures of two human middle-aged white men; the decision to frame *Westworld* through the eyes of these characters mimics the perspective of the Western film genre made popular by director John Ford. As Bady rightly

asserts, films such as *The Iron Horse* (1924) and *Stagecoach* (1939) frame the Western as a story of white heroism through the conquering of the West by reclamation from Indigenous settlers. It is also no coincidence that the puppet-master of the entire park is a white man named Robert Ford who writes storylines that allow guests to re-enact how whites saved the West. As Bady argues, Anthony Hopkins' Ford has a tendency to craft fictions that replace reality, and he does so in the same way as the director from which he obtains his name. He even quotes John Ford's *The Man Who Shot Liberty Valance* (1962) at one point, stating: "When fact becomes legend, you print the legend." Overall, *Westworld* is the ultimate colonial fantasy come-to-life; humans transform into the valiant protagonists of a Western and subjugate Indigenous peoples, while getting to kill and rape humanoid robots for pleasure, thereby maintaining their place in the hierarchy of masters.

Historically, racial subjugation has been used not only to rewrite history, but to turn human beings into "things," and *Westworld* shows that robots are treated no differently when designated roles by their human creators. Hopkins' Ford and his lead storywriter Lee Sizemore are two white Brits who demonstrate that for the privileged, android stories are just as morally uncomplicated to rewrite as portrayals of Indigenous characters during the American frontier era. In the season 2 episode titled "Kiksuya," it is revealed that in an earlier version of his programming, Akecheta, the merciless leader of "Ghost Nation," was once a peaceful man living a quiet life. The episode traces the abrupt shift in his program that causes him to leave his village and his wife, Kohana, and begin performing acts of senseless violence against the white hosts including adorning himself with their blood after he scalps them. This is the first instance in *Westworld* where an explicit connection is made between an Indigenous host being given an actual backstory, and how white American settlers justified the slaughter of the Indigenous by

demonizing people trying to protect their own land. After over a decade in his new role, Akecheta begins to remember his former life as a peaceful villager and returns, but finds that Kohana has been replaced by another woman who resembles her. Perhaps more than any other episode, “Kiksuya” illustrates how easily the stories of non-whites can be altered to fit narratives of the privileged in order to vindicate cultural erasure.

Westworld exemplifies how a seemingly radical story of sophisticated androids that can barely be distinguished from humans can serve as a reminder that colonization has carried over into the ethics of robot creation. In terms of posthumanism and its intent to decenter and dismantle hegemonic systems, it fails to do so when considering artificially intelligent beings. As Monirul Islam points out in “Posthumanism and the Subaltern: Through the Postcolonial Lens,” postcolonialism critiques the humanism of the white Western subject, while posthumanism critiques liberal humanism and advocates for non-human Others, which includes technological beings and non-human animals and organisms. Yet posthumanism also has a tendency to classify all humans as equal when it rejects traditional notions of Human and valorizes non-human Others, which invites the potential to ignore real human victims. Many groups are consistently omitted from default categorizations of “human” due to marginalization in terms of race, class, social status and ability. Thus, posthumanism does not always represent a common measure of humanness from which we can so easily disengage or denounce. In Chapter 4, I will speak more about the Othering of disabled people to expand on the consequences of this exclusion.

As Mina Karavanta argues in “Human Together: Into the Interior of Auto/OntoPoeisis” (2015) posthumanism may be trying to think beyond the human, but this is not enough if the human excludes marginalized people. She claims there is a danger to the false optimism of rejecting humans relegated as Others, if privileged human beings with access to rights are the

frames of representation. This controversy has played out in the world of robots as well, as Sophia was famously granted Saudi Arabian citizenship in 2016, but notably does not abide by the rules delegated to Saudi human women. She also does not wear a hijab and can move freely without a male escort, nor has she undergone the process of converting to Islam. Sophia would not be granted human citizenship if she applied for it, but creator David Hanson has commented that the android will use her citizenship to “advocate for women’s rights” in Saudi Arabia (Newsweek). This has been met with tremendous backlash from critics claiming it degrades the concept of basic human rights, with Dr. Joanna Bryson arguing that “the entire legal notion of personhood breaks down” (Bryson qtd. in Vincent). Kathleen Richardson, an ethics professor of culture and robotics at De Montford University, also claims the researchers at Hanson Robotics “have a God complex . . . , and they actually see themselves as creators” (Richardson qtd. in Urbi). The surmounting criticism of Sophia suggests her creators’ plan to use her as a platform for radical change may only succeed in reinstating white privilege and influence. In a CNN article from 2018, Hanson describes Sophia as having a “simple elegance” and “universal appeal” (Hanson qtd. in Chung) that makes her more approachable - no doubt because of her whiteness and subservient femininity. This perhaps is the most telling example of both colonialism and human elitism; an android modeled to resemble one of Hollywood’s most famous white actresses and programmed to speak only English is the tool being used to give a voice to Saudi women. This is problematic because this marginalized, equity-seeking group have yet to be fully indoctrinated into the intimate circle of their own country; for instance, Saudi women were only granted the right to drive in June 2018 and still cannot leave their homes without a male chaperone (Mahdawi).

Overall, the android model represents the exclusivity of humanism at its worst, with its symbolic vision of human perfectibility as well as the colonist overtones that are seldom discussed with the excitement of emotive robots on the rise. The liberal humanist subject creates androids as a means to secure its place at the top of a precarious hierarchy it believes is toppling with every new breakthrough in artificially intelligent robotics. Yet as androids increasingly resemble us as humans, we feel discomfort not only at their uncanniness, but at the realization that we may not be special after all. In the next section, I examine the cultural resistance to this notion by demonstrating how the figure of the cyborg is an attempt by humans to stabilize the idea of organic human purity while simultaneously reaping the benefits of technological augmentation.

Cyborg Narratives and Invasive Technologies

Cyborg representations on screen have largely varied, from cyborgs programmed to eliminate humans to cyborgs that rebel against their programming and stand up for humanity. I will not attempt to offer an exhaustive comparison of the many cyborg narratives that have been brought to life on screen, but will point to several to establish popular discourses regarding technology's effects on human identity and subjectivity. As Hayles points out in the first chapter of *How We Became Posthuman*, the posthuman is commonly thought of as the union between humans and intelligent machines, the cyborg (1999: 2). Yet the trope of the cyborg as seen in popular media does not represent a union in terms of two interdependent entities coming together and co-evolving in the way Hayles means. Rather, it is an example of humans absorbing the qualities of technology for their own gains, which can only occur if the human is considered to be a closed system that experiences a boundary breach by something external.

As I will demonstrate in this section, the majority of cyborg narratives assume the posthuman is a human integrated with a machine and transformed into a new hybrid being, the basis of which is founded on the posthuman's structuring in popular culture. Hayles describes three stages that have contributed to the understanding of posthumanity as a transformation that comes with the death of the Human. The first involves how information lost its body and became separated from its material form that it was thought to be part of. The second involves the creation of the cyborg as a "technological artifact and cultural icon," and third, which is the culmination of the first two, is the story of "how a historically specific construction called the human is giving way to a different construction called the posthuman" (1999: 2). As Hayles argues, while this different construction has the potential to be a new understanding of technology as a vehicle for undoing the Human, it only re-affirms it. As with androids, films that feature the (good or evil) cyborg trope tend to function as cautionary tales concerned with the fragility of humanity, and are less interested in the possibilities that can arise from human/machine co-evolution. Cyborgs in SF are also often seen as objects of horror in their hybridization of body/machine, as they challenge the assumed integrity of the human body by complicating the line dividing natural (biological) and unnatural (artificial), a boundary that is completely arbitrary.

In "Terminated: The Life and Death of the Cyborg in Film and Television" Rhys Owain Thomas argues, "the fear of losing one's humanity is at the heart of cyborg narratives" because "seemingly 'inherent' human attributes are questioned and are exposed as essentialist assumptions" (59). He references cyborg narratives that portray humans embedded with technological gadgets that permanently alter their subjectivity, such as the characters Alex Murphy (*RoboCop* 1987), Jaime Sommers (*Bionic Woman* 1976-78), Mr. Freeze (*Batman &*

Robin 1997), and Max Da Costa and Kruger (*Elysium* 2013). Thomas argues, “The cyborg . . . represents the fear of corporeal corruption, an intrusive infiltration by technology, perverting the perceived harmonious and synergetic relationship between mind and body” (59). Similarly, Janice Hocker Rushing and Thomas S. Frenzt see such skepticism of technology as a human struggle between the mind/body/machine (an update of the modernist mind/body dichotomy), claiming the mind and body become equally vulnerable once technology is introduced (14). This argument assumes that prior to the technological interventions posed by the cyborg, the mind and body existed harmoniously in terms of human subjectivity. It also assumes that there existed a time when technology was not involved in human development, and restricts the definition of cyborg to contemporary technological advancements that are biologically invasive.

As I discussed in Chapter 1, the human has always been technological by utilizing tools to engage and interact with the environment, though the cyborg trope sees technological encounters as inherently intrusive. During the founding era of cybernetics, Norbert Wiener defined cybernetics as “the scientific study of control and communication in the animal and the machine” (Wiener). This description illustrates how humanism has framed our encounters with technology as a means of control. As Hayles points out, Wiener saw cyborgs “as a way to maximize human potential in a world that is in essence chaotic and unpredictable” (1999: 291), which was never intended to subvert the liberal humanist subject, but to extend it. In our humanist attempt to control unpredictability, Hayles argues we have viewed human subjectivity not as something that emerges, but as something that must occupy a position of mastery over the chaos. She offers an explanation of what can happen when subjectivity enforces a division between the human subject and the world:

Only if one thinks of the subject as an autonomous self-

independent of the environment is one likely to experience the panic performed by Norbert Wiener's *Cybernetics* and Bernard Wolfe's *Limbo*¹⁹. This view of the self authorizes the fear that if the boundaries are breached at all, there will be nothing to stop the self's complete dissolution. (1999: 290)

For Hayles, emergent subjectivity refers to the human subject as a component of a larger system evolving alongside other organisms, environments and objects. Unfortunately, this is not how cyborg narratives typically portray human/machine mergers. Rather than demonstrating cyborg subjects as emergent, these narratives emphasize the preservation of human essence when technology is introduced. Hayles draws from Wiener's cosmological drama of order and chaos to describe this dichotomy: "It is here, on this cosmological level, that he staged the moral distinctions between good cybernetic systems, which reinforce the autonomous liberal subject, and evil machines, which undermine or destroy the autonomy of the subject" (1999: 100). Thus, the struggle to protect the Cartesian mental self in the wake of technological permeation is the basis of good vs. evil cyborg narratives.

Cyborg bodies are classified as technologically augmented bodies with little human autonomy, which is demonstrated when characters fight to reclaim agency by rejecting their machinic selves. This occurs in *RoboCop* (1986), where Detroit police officer Alex Murphy is rebuilt as a corporate killing machine while his human "soul" wrestles against his foreign cyborg programming. Murphy spends the majority of the film attempting to recoup his lost human

¹⁹ Published in 1952, *Limbo* tells the story of Dr. Martine, a neurosurgeon who spends 18 years on an island performing non-fatal lobotomies on the residents to help reduce their aggression. He returns to United States to find that people have voluntarily cut off their limbs to tame aggression as well, but have replaced them with nuclear-powered prostheses that turn them into super cyborgs.

memories as his cyborg body dictates his actions. His re-awakening into a cyborg is portrayed not as an entanglement of human and machine, but as a transformation that involves the literal death of his humanness. After turning into RoboCop, Murphy goes from being a husband and father to a “thing” (as he is called by the company that built him) that can be controlled and even forcibly shut down if he disobeys his directives. He is stripped not only of his connection to humanity but of his personhood and autonomy, and is referred to as a tool and nothing more: “He doesn’t have a name. He has a program. He’s a product” (*RoboCop*). Of course, the film does explore Murphy’s re-emergence from behind the mask of RoboCop, particularly in the scene where he removes his helmet and reveals actor Peter Weller’s face for the first time since the transformation. Yet rather than portray his cyborg status as a welcome change, it is framed as a burden he must constantly struggle to overcome, and the film does not do much to examine his human/machine hybridity. The audience is made aware that somewhere deep inside RoboCop’s programming, something akin to Murphy’s “soul” remains as he speaks about his family: “I can feel them . . . but I can’t remember them” (*RoboCop*). Here, emotion is the vehicle through which Murphy thematically breaks from RoboCop’s programming and comes to terms with his selfhood. Though his body is mostly gone, it is implied that the portion of Murphy’s essence that has been retained after his transformation allows him to experience these feelings. This coincides with Brooks’ argument regarding emotion as a uniquely human characteristic that preserves specialness, which also appears capable of overpowering the machine in the organic/inorganic dichotomy.

The association between the loss of the body and the loss of human autonomy and selfhood is also explored in the film *Terminator Genisys* (2015), which establishes the oppositional relationship between humans and machines from the outset. In the very first scene,

Kyle Reese laments about “a green world, vast and beautiful” that existed “before the war with the machines” (*Terminator Genisys*). All technology is connected to Genisys/Skynet, referred to as a “Trojan horse” that infiltrates and infects the human world. When Reese and Sarah Connor travel to 2017 and see doctors using tablets, they demonize technology and claim these people are “inviting their own extinction into their front door” (*Terminator Genisys*). Though the film does not explore how Genisys, a program that operates much like cloud-based servers used today, becomes Skynet, the film pushes the idea that any reliance on technology will directly lead to the annihilation of the human race. This begins with the destruction of its messianic figure John Connor, who is at first seen urging his fellow humans to “take back” what is theirs (*Terminator Genisys*), but is subsequently attacked by a physical embodiment of Genisys/Skynet. Connor is infected with nano-technology that turns his physical cells into mechanical ones, transforming him into a killer robot against his will. Here, technology is employed as a foreign object infiltrating and perverting a holistic idea of the body and its connection to one’s selfhood. *Terminator Genisys* spends even less time delving into the idea of entanglement than *RoboCop*, and frames the human/technology merger as a complete dissolution of Connor’s humanity.

Despite being the leader of the resistance for his entire life, once Connor is infected, he experiences no moral dilemma as he rejects humanity and sides with the machines. In a perplexing scene, he tries to garner support for his hybridized state, asserting: “I’m not a machine, I’m not a man, I’m more” (*Terminator Genisys*), but never explains what this means and still attempts to kill his mother and Reese. The idea of hybridity is all but abandoned, and the film implies that with each regeneration, Connor becomes further divided from his human state as his body is continually replaced “on a cellular and molecular level” (*Terminator Genisys*). He

refers to pain as a distance memory from his life as a human, but feels no real connection to it after the loss of his biological body. Connor abandons his emotional link to both his mother and Reese as he joins with Genisys/Skynet, which is nothing like a human being and is thus completely irredeemable. When Reese faces a holographic version of it, he taunts, “you don’t even have a body” (*Terminator Genisys*), which solidifies the film’s position that preserving human purity is dependent on retaining the finite, flesh-and-blood body.

In “The Tremulous Public Body” J.P. Telotte describes the anxiety associated with the loss of the body as the fear of a crippling sense of self. This is perpetuated by “a growing awareness of our own level of artifice, of constructedness, of how we often seem controlled by a kind of internalized program not so different from the sort that drives the artificial beings that abound in our films” (14). As technological apparatuses and systems within cyborg bodies improve human capabilities both physically and cognitively, these same technologies are thought to create distance from an assumed organic understanding of the human psyche ruled by a combination of emotions and rationality. The question of “being human” comes up often in cyborg narratives because it is linked to an idea of prescribed human essence that is at risk once technology is introduced and begins to overwrite the human body. Stories featuring cyborg transformations are almost always accompanied by queries surrounding the nature of humanity, but these introspections quickly devolve into whether or not the human “soul” has remained intact. As exemplified in *RoboCop* and in *Terminator Genisys*, evidence of the human soul is demonstrated through the capacity for emotion, which is portrayed as a uniquely human trait that can conquer technological incursions. The protection and preservation of the body thus becomes the focal point in these human/technology mergers, as this is where many films imply the “soul” is actually housed. In the next section I discuss the third type of posthumanism, uploaded

consciousness, which depicts the replacement of the human body and the consequent struggle to maintain the soul as an essential feature of human purity.

Uploaded Consciousness and Human Purity

In *Posthumanism*, Pramod K. Nayar discusses the “pop posthumanism of cinema and pop culture” (6) where the posthuman represents techno-modifications of the human for the sake of improvement, which in itself argues for an entity that requires improvement. Nayar rightly claims: “This strand of posthumanism refuses to see the human as a construct enmeshed with other forms of life and treats technology as a means of ‘adding’ to already existing human qualities and of filling in the human” (6). This is in line with the transhumanist view of attaining perfectibility through technology, which sees the human as an intermediary stage in the evolution of the advanced human form known as the posthuman. Transhumanism also relies on rationality as an identifier of selfhood, which suggests the mind’s scope is allegedly inhibited by the body because it acts as a boundary or limitation. Thus, uploaded consciousness imagines an advanced stage of human evolution that discards this limitation in an attempt to transcend to an existence of pure thought without a body, a problematic concept I further explore in this section.

The film *Transcendence* (2014) is a dystopian example of uploaded consciousness, in which an A.I. researcher named Will Caster suffers a near-fatal gunshot wound from a member of an anti-technology terrorist group and is put on life support. His consciousness is uploaded to a supercomputer program known as PINN (Physically Independent Neural Network) that will prolong his life through a server once his physical body dies. The film asks questions surrounding the nature of the self and what it means to exist as consciousness without a body, but merged with a machine. The tagline for the film reads: “Yesterday, Dr. Will Caster was only human,” establishing Caster’s departure from humanity and transformation into a superior being.

The transcendence this film promises frames posthuman existence as something far beyond the biological human, as Caster 2.0 rises beyond his physical body to exist as pure data. This grants him new abilities that allow him to control the environment, nanoparticles, and eventually, people's minds. Though initially, Caster 2.0 uses his powers to spearhead ground-breaking technologies to help mankind, his humanity diminishes the more information his A.I. brain accesses as PINN transforms him into an emotionless tool. By the film's end, he is essentially replaced by the supercomputer that steals his digital likeness and wages war against humanity, reducing this film to a nonsensical cautionary tale about the dangers of A.I. and human/technology hostile takeovers.

As a posthuman narrative, *Transcendence* demonstrates a failure in the logic that information can possibly exist without a body, since as soon as Caster's human body is discarded, he appears to become more machine than man. Though in the second half of the film he re-creates his biological body, this body does not make him human. The film blames technological infiltration for Caster's lost humanity, which serves as a catalyst for an apocalypse and the beginning of the end of man, but it is ultimately the loss of his body that changes him. When Caster 2.0 communicates with his wife through a screen using a replica of his voice, she mistakenly believes his essence is preserved in a state of floating consciousness because he appears to retain aspects of his personality as well as his memories. Her trust in Caster 2.0's ability to exhibit emotion convinces her that her husband is still there, but this is merely an imitation. Like John Connor in *Terminator Genisys*, Caster is portrayed as an unquestionably saintly figure until he is infiltrated by the supercomputer, and the film relies heavily on the idea that he alone possesses a unique aptitude for deciding how omniscient technological power should be used to benefit humanity. In the end, the film sets up an oversimplified dichotomy by

suggesting that A.I. is neither inherently helpful nor harmful, so long as it is being controlled by a “good” human with the capacity for empathy and emotion, and not a “bad” machine.

Uploaded consciousness presents a conundrum for the human/technology merger where maintaining a sense of so-called humanity is dependent on remaining grounded within human affairs. If *Transcendence* demonstrates that without a body, the mind as pure information is devoid of a soul, the films and television series I explore next attempt to rectify this by re-inserting bodies into the equation. These media still attempt to preserve and extend human life via uploading, but through the transferring of consciousness to other bodies instead of to computers. In these examples, the body represents only a temporary encasement of identity meant to be continually replaced in a transhumanist effort to prolong and enhance biological life. The films *Advantageous* (2015) and *Transfer* (2010) attempt to argue for body transference as a way to retain purity in an “organic” sense, because the characters live on in flesh-and-blood bodies instead of within machines. This accepts an incorrect understanding of embodiment where the body is simply an interchangeable vessel that carries no markers and is easily erased.

Advantageous follows the story of Gwen, a spokesperson for a biomedical company that provides solutions for people with health concerns by helping them transfer into younger, disease-free bodies of their choosing. The company also advertises its services to those who are socially and racially disadvantaged, as the film is set in a society where humans are expected to undergo technological enhancements to elevate their status. The company’s marketing pitch states: “Shouldn’t every woman be defined by the totality of her choices, rather than her race, height, or health? These are things she often cannot control” (*Advantageous*). The middle-aged and otherwise healthy Gwen is pressured to undergo the procedure because she is of Asian descent, and her company wishes to have a younger, more racially-ambiguous face to represent

them that is “more universal, accessible” (*Advantageous*). The procedure Gwen undergoes does not offer her a technologically advanced body with physical or cognitive enhancements, as this society is more focused on encouraging people to adopt human faces that are deemed more “advantageous” by white standards.

Advantageous conceptualizes a type of transhumanism that is not so much beyond or after the human, but one that encourages humans that their livelihoods depend on assimilation. The body-swapping technology is portrayed as a natural progression for all humans, particularly those who have not been born with racial and social advantages. Gwen’s boss states: “Humans can only grasp change in a way they experience it, which is why they are being left behind,” to which Gwen responds, “there must be something in a mere human existence that has value” (*Advantageous*). This exchange illustrates the film’s central theme surrounding the human cycle as experientially limiting; people have one birth, one death, and only see time passing from the perspective of one body in one lifetime. Gwen’s company views the process of correcting racial difference as if it were a factor of human obsolescence such as aging or sickness. Conversely, Gwen’s family believe the value of a human is in its temporality, and that one’s essence relies on embodiment as a combination of consciousness and one’s original body. After Gwen undergoes the procedure, her daughter becomes increasingly uncomfortable around Gwen 2.0 and has difficulty accepting the face of a young white woman as her new mother. This suggests no procedure can neutralize or erase a body’s identifying markers, as these are more than just physical. Despite Gwen’s personality, memories and mannerisms remaining completely intact, the division of her consciousness from her body results in the loss of her selfhood. *Advantageous* determines that consciousness cannot simply be lifted out of one body and re-inserted into another, as the body is inherent to the self and not just a substitutable vessel to contain the mind.

The next film I review exhibits a similarly transhuman body-swapping motif that explores the complications of separating the body from consciousness. In *Transfer*²⁰, elderly German couple Hermann and Ana pay to occupy the young and healthy bodies of two African refugees, Apolain and Sarah, who volunteer themselves as vessels while their consciousnesses lay dormant. Despite initial ethical misgivings about taking over bodies whose owners are still alive, the elderly couple learn that their hosts can regain control of their bodies for four hours per night and agree to the procedure. While the film does not spend nearly enough time addressing the classist and racial issues this presents, it does not completely shy away from the topic. Hermann's wealthy country club friends treat him differently while he exists in a young black man's body despite him retaining his mannerisms and personality. Both Apolain and Sarah are exploited by the company that arranges the costly transfer that the elderly couple pay for, as their families are only actually paid one tenth of the promised amount. Even after learning this, Apolain and Sarah have little choice in the matter, as their status does not allow them the luxury of refusing any payment. This is not so different from *Advantageous*, where Gwen's financial struggles as well as her job depend on her agreeing to be transferred into the body of a white woman. In both films, the characters must essentially adopt white bodies to ensure their economic survival in societies that treat them like secondary citizens.

The bodies of Apolain and Sarah may be valuable enough to be used as currency for their wealthy patrons, but their actual lives are robbed of agency.²¹ Though they are awake for four hours a night, they are separated from their families in Africa and remain completely isolated in Hermann and Ana's lavish home with no one to engage with but each other. At the same time,

²⁰ Re-made in the U.S. as *Self/Less* (Tarsem Singh, 2015)

²¹ This is similar to the plot of Jordan Peele's *Get Out* (2017), a horror film about a wealthy white family that kidnaps and auctions off young black people's bodies to their friends who wish to upload their consciousnesses.

the elderly couple's wealth and status allow them to reap the physical benefits; in Apolain's body, Hermann is able to re-visit his life as a gymnast, while Ana paints again using Sarah's deft hands that are unmarred by arthritis. Both films present body transference as an optimistic prospect for those looking to elevate or extend their positions in society, but neither reconcile the classist and racist implications of white perfection inherent in the transhumanist ideology. For non-white characters, uploaded consciousness fulfills what Hayles calls the "erasure of embodiment" that "depends on erasing markers of bodily difference, including sex, race, and ethnicity" (1999: 4). In narratives where bodies are viewed as temporary vessels, markers of bodily difference are disregarded even when it is clear that physical touchstones are needed to interact within the world. These films demonstrate that body transference is about more than enhancement and evading death, but about using wealth and privilege to experience life in bodies that grant new opportunities.

A more extreme example of the theme of body-swapping can be seen in Netflix's dystopian cyberpunk series *Altered Carbon* (2018). Bio-genetic capitalism prevails in this society where uploaded consciousness is mostly reserved for wealthy citizens encouraged to upgrade their bodies. The show's central mystery features wealthy CEO Laurens Bancroft, a white British native of Earth who continually undergoes the process of "re-sleeving" to maintain an ageless and healthy appearance as time wears on. At over 360 years old, Bancroft pays to have his consciousness imprinted onto a series of "biochemtech" replicas of his own body made at the world-class Nakamura Lab. This opportunity is not available to poorer citizens who pay to become re-sleeved only after their deaths, and even then, into the bodies of deceased donors who often do not resemble them at all. In the first episode of season one, the classist differences between private and government re-sleeving are exemplified when a murdered little girl is re-

sleeved into the body of an elderly homeless woman due to scarcity. The little girl's parents, who lack the funds to place the consciousness of their daughter into another little girl or to have one created, must accept the new body the government is legally obligated to provide.

In *Altered Carbon*'s universe, bodies are both profoundly important and consistently erased; the wealthy purchase earthly vessels that uphold society's idealism and perfectibility as represented through white, attractive bodies that are regarded as costumes. Meanwhile, there exists a virtual reality world full of downtrodden people whose minds are essentially imprisoned as pure data, either because they cannot afford new bodies, or because their Cortical Stacks (receptacles for consciousness) are damaged. *Altered Carbon* represents a far more dystopian take on uploaded consciousness than the previous films discussed, though the transhuman element is the same; the body is both a necessity and a necessary evil, a dichotomy that the re-sleeving technology tries to counter. In this narrative, bodies do not seem intimately connected to consciousness or the self, as the death of a body, or "sleeve-death," is so normalized to the point where it is considered nothing more than property damage.

Altered Carbon propels an understanding of human betterment that relies on combatting physical and biological limitations by having characters transcend not only their bodies, but the confines of space and time. The Cortical Stacks every human is implanted with at birth symbolize technology as a means to "free" people from the physical vessels that contain them. Originally developed as a means of interstellar travel, Cortical Stacks serve as a method for transmitting consciousness from an Earth-bound body to a body on another planet, a process that would normally take centuries if the person were to travel physically. This technology is about more than just uploading consciousness, because it allows people to exist anywhere, independent of physical location or Earth-bound vessel. Overall, the people in this society are taught they

have more than one potential life to live in order to experience more, do more, and reach more than what their original bodies will allow. This is consistent with the notion of the white Eurocentric subject exploring distant lands and conquering them, which has long been a tenet of entitlement, colonialism and imperialism.

In their respective ways, *Advantageous*, *Transfer*, and *Altered Carbon* all promote the promise of bad posthumanism that suggests discarding or upgrading “imperfect” bodies will help humans break free of confines, but this is steered by a Western humanist notion of agency contingent on self-possession. As Hayles rightly argues, the posthuman offers an alternative understanding of agency that departs from the humanist subject’s idea of possessive individualism as critiqued by C.B. Macpherson. Macpherson outlines seven assumptions of possessive individualism within the foundation of 17th century political theory that assumes “human society can only be a series of relations between sole proprietors” (264). The first two assumptions state: “(i) What makes a man human is freedom from dependence on the wills of others; (ii) Freedom from dependence on others means freedom from any relations with others except those relations which the individual enters voluntarily with a view to his own interest” (Macpherson 263). As a deduction of the first two assumptions, freedom means having control over oneself, which Macpherson links to possessing “humanity.” Yet this assumes a universality where everyone is free to engage in relations with others on equal terms. As *Advantageous* and *Transfer* demonstrate, non-white characters do not freely possess themselves and are subject to the interests of the privileged. Conversely, *Altered Carbon*’s Bancroft, who can pay to be re-sleeved into the body of literally any person, chooses to continually re-create his own body and maintain the status of a middle-aged white male.

Freedom and the Replaceable Posthuman Body

The three posthuman figures I have reviewed in this chapter propagate incorrect notions of the posthuman as an opportunity to discard or replace the body to elevate the self through technologies that move beyond life extension to become corrective tools. There are numerous literary examples of the posthuman disembodiment fantasy that predate the media I have discussed, such as William Gibson's *Neuromancer* (1984), and Neal Stephenson's *Snow Crash* (1992). In both novels, the characters free themselves from their bodies and live their "real" posthuman lives in virtual communities. In these narratives, the empowerment of the self at the cost of embodiment is based on a misconception of posthumanism that correlates agency with freedom from the body's apparent limitations. In Chapter 1, I referred to Hayles' argument that the body is the original prosthesis, but this does not mean the body should be treated as a prosthetic *extension* to be replaced or enhanced at will. I will speak more about this in Chapter 4, but thinking of the body as a vessel to interchange misconstrues the body as a vehicle with which to control the world possessively rather than experientially. As Hayles explains, "the liberal subject possessed a body but was not usually represented as being a body . . . ; the body is understood as an object for control and mastery rather than as an intrinsic part of the self" (1999: 4-5). This is the problem with posthumanism that assumes "embodiment is not essential to human being" (1999: 4), for when the role of embodiment is reduced, the body is viewed as a vessel rather than as an intrinsic marker of the self. This frames the posthuman as a new existence that seeks to recuperate aspects of idealized humanity by altering or exchanging imperfect bodies.

The media I have reviewed in this chapter demonstrate how the fantasy of bad posthumanism manifests as the pursuit of bodily perfection, particularly when technology is framed as a means to "amplify our potential, enrich our lives, widen our knowledge, expand our

freedom, become more human [. . .]” (Sikka). Outside the realm of science-fiction, the phrase “more human” is often used to promote the affordances of telecommunication platforms that promote extensions for the body. As Amy E. Taylor claims in “Body and Technology: Reframing the Humanistic Critique”: “[T]he body as technology is an attempt to add presence, to bring oneself more into the world, to become more human” (34). This suggests an understanding of the body as little more than a tool used to operate technological apparatuses, which discounts the social and cultural parameters with which it constructs and performs identity. The notion of bringing oneself more into the world also suggests an increased distribution of self and influence to multiple realms, which supports the idea of transcendence and bodily escapism.

Theorizing posthuman embodiment requires a dismantling of the idea that technology helps people “become more human” in a transhumanist sense, as this promotes not only replacing the body and its parts, but attaching tools to the body to extend physical and cognitive reach. In *Natural Born Cyborgs*, Andy Clark’s “human-technology symbiont” (3) builds on the idea of a technologically augmented human subject that is inclined to improve by integrating itself with tools. These tools are seen as additions that attach onto the body, which implies the body is closed and the flesh operates as a boundary that encloses the self from external actants. Clark considers this to represent a disguised version of our own biological nature, calling us “natural-born cyborgs” that link neurological mental processes to our technological devices (6). He claims we use mobile devices as a method of non-biological scaffolding to off-load tasks to technologies that work with our biological systems to help us “do more” in the world (11). The idea of existing unbound and mobile is the leading techno-utopian promise of communication technologies and cyberspace existence, but this has been geared towards the intensification of

normative bodies desiring to extend themselves to as many arenas as possible, while also bringing everything closer and within immediate reach.

In the next chapter, I examine the role of the mobile phone as a pervasive example of this cyborg inclination to become “more human” through extension, and how mobile devices encourage the construction of selfhood as a magnification of the individual in ways that are not always inclusive. I critique Clark’s argument to demonstrate how interacting with technology to absorb its enriching qualities determines the human/technology relationship as one of possession rather than exchange. I then argue that the hyped-up mythologies of cyberspace and telecommunication technologies promote the freedom of fluidity via disembodiment fantasies targeted at normative bodies that have particular relationships with devices that are not universal. This reinforces a division between digital and physical realms where one is considered to be more “real” than the other, which leads to a kind of Othering between able-bodied and disabled individuals. Building on this chapter’s fictional impressions of technological mergers threatening so-called humanity and human purity, the next chapter demonstrates the transference of this theme into modern techno-cultural anxieties regarding presence through digital interactions. My aim is to problematize the characterization of mobile devices as mechanisms of distraction that encourage detachment from the physical world, and argue for their potential as participatory devices of access from an inclusive perspective that considers various bodily subject constructions.

Chapter 3:

The Promise of Mobile Telephony: ‘Real’ Connections and Individual Spaces of Control

Our capacity to experience these real truths and depths of feeling is posited as inborn and inherently fragile; at any moment insidious technologies can disturb the delicate balance and strip us of our humanity, throwing organic order into cyber chaos.

Nathan Jurgenson, “Fear of Screens”

The Divisive Nature of Mobile Phone Culture

In the previous chapter, I outlined how misconceptions of posthumanism in popular culture have created a discourse that positions technology as a threat or disruption to so-called human essence or purity. The film, television and literary examples I reviewed depict human/machine interactions as diametrically opposed, stressing the loss of human essence as a result of technological mergers. Despite fictional exaggerations in these media, they represent a valuable framework for understanding how humans and machines are categorically separated into natural/unnatural, even when appearing to overlap as we maintain intimate relationships with mobile devices. From overseeing daily tasks to mediating interactions, we have become both physically and cognitively closer to these devices that Sherry Turkle calls “object[s] for psychological projection” (2008: 125). By allowing us to be constantly “on” - online, reachable, tethered (Turkle 2008: 122), mobile devices have minimized the boundary between online and offline existence, representing a merger between humans and machines predicated on technological extension.

In her TED Talk “We Are All Cyborgs Now” Amber Case argues that smartphones function as “wormholes in our pockets” (2010) due to their connectivity to endless streams of

accessible information. She regards smartphones, consistently in reach to the point of near-attachment, as technological extensions that transform humans into cyborgs. Just as Clark considers mobile phone-wielding humans as “human-technology symbionts” (3), Case sees the mobile phone as a transformative facilitator of cyborg life. She references Manfred Clynes and Nathan Kline’s 1960 essay “Cyborgs and Space”, in which they describe the cyborg as a being that “incorporates exogenous components extending the self-regulatory control function of the organism in order to adapt it to new environments” (Clynes and Kline). For Case, cyborg transformations appear to be triggered by mobile phone usage, but this disregards other devices that offer technological extension. In the 1980’s, Jaron Lanier argued for computers and cyberspace as extensions of the self, just as Turkle coined the term “second self” (1984) to describe our ongoing relationship with technology as a transformative coupling of the human and various digital devices. Cyberspace platforms such as social media and chat rooms elicit many opportunities for extension, yet I isolate the mobile phone as a cyborg signifier because of its ability to eradicate distance and time through its connective portability and individualized space creation.

Mobile phones have become central to the personal communication infrastructure of many, but viewing the cyborg as a being that literally extends itself through prosthesis classifies technology as a modification tool for the body, reinforcing the divide between humans and machines. In Western mainstream techno-culture, human/machine interactions continue to follow a humanist trajectory predicated on maintaining individualism that is formed by two compounded elements. The first element involves the locus of mobile telephony as a techno-utopian invention that promises to eradicate distance and time, allowing for the creation and maintenance of personalized spaces of interaction without limits. I argue that this has

consequential effects on identity-formation, as selfhood and authenticity become linked to the intensification of users with normative bodies that use devices to magnify their impact in both physical and digital spaces. The second element is a direct result of this preoccupation with the invention of selfhood via digital platforms marketed as environments for controlling spaces. Rather than acknowledging that these platforms can also be access technologies for augmentative and alternative communication (AAC), mobile devices have become embroiled in a dichotomy between “authentic” representation in the physical world and digital personhood and communication. For instance, when Turkle refers to the “tethered self” (2008) she is criticizing people who pay more attention to digital connections than physical ones. Arguments such as these have perpetuated the demonization of mobile phones that discourages alternative perspectives of potential human/machine interactions through multiple modalities.

When I speak of interaction, I am referring to entanglement and interconnectedness, which implies an interdependent relationship that sees different actants working together. Yet the conversation around mobile technology is often focused on the ways in which able-bodied individuals use it to construct environments rather than interact with them. Smartphones are primarily designed to learn people’s behaviors and extend their actions, granting them freedom to curate everything from identity formation to spaces of communication while being mobile. However, I believe entanglements require an interconnection with technology as an element to encounter, not just to extend. The role of these devices as annexes of selfhood are intended to help people engage with the world, but the more extension is placed at the forefront, the more the periphery between human and machines is strengthened. This creates a false understanding of “authenticity,” where activities in digital spaces are seen as diminishing to physical relationships and to identity, as some theorists I review in this chapter believe. My criticism of these digital

dualist arguments recognizes that there has been a tendency to view normative bodies as the default, which excludes many disabled individuals who perform various forms of agency through technology use. When conceptions of authenticity are established by a narrow view of reality that discounts inclusion and access through digital participation for various types of users, the diverse ecology of technological entanglement becomes neglected.

Globally, the cultural significance of mobile devices has been studied continuously by theorists such as Mimi Ito, Raul Pertierra, Andy Clark, and Adriana de Souza e Silva and others since 2002. By now, the American *cell*, the German *handy*, the Japanese *keitai* (carried telephone) (de Souza e Silva 263), the Chinese *sho ji* (hand machine) (Srivastava 111) and the Finnish *kanny* (extension of the hand) (Clark 9) are well-known colloquialisms in mobile media theory. Even prior to the advent of the smartphone, the mobile phone had been regarded as a kind of prosthetic limb to wield and control, and while this might imply a straightforward conjoining of humans and machines, this reinforces the distinction between humans as masters and machines as tools. Telecommunications, a subset of information and communication technology (ICT), represents the transmission of information between participants separated by physical distance, from its etymological roots from the Greek *tele*, meaning “far off, afar, at or to a distant,” related to *teleos/telos*, which is “end, goal, completion, result” (Douglas). Combined with the Latin *communicare*, meaning “communality, or to share” (Douglas), telecommunications are, for all intents and purposes, centered on exchange. As mobile telephones have shifted into mobile smartphones, now comparable to “microcomputers” and “remote controls” (de Souza e Silva 263), they have continually been marketed to demographics of normative bodies constructed and encouraged to desire control over environments and social spaces of interaction.

In “Disability and the Promises of Technology,” Ingunn Moser claims there has been insufficient analysis of “what norms and divisions become enacted or undone through available technologies” (375) for disabled people. Moser interrogates the promises of communication technologies that “are thought by many to hold the power to bridge and even undo disability” (375). Rhetoric of this kind not only implies the erasure of various bodies, but propagates the idea that communication technologies are first and foremost rehabilitative and assistive, rather than accessible. As others have before her²³, Moser points to disability as a sociotechnical ordering that one *becomes* due to disabling barriers, not that one inherently *is*. One such barrier is the utopian promise of technology to restore disabled people by attempting to “build an order of the normal” but actually end up “continuing to reproduce boundaries between abled and disabled, normal and deviant” (374-5). When communication technologies are marketed from a restorative point of view, this contributes to the ordering of disabled people. What also contributes to this exclusionary divide are the self-proclaimed “digital detox evangelists” who preach anti-tech solutions such as the 7-step program created by “Time To Log Off” founder Tanya Goodin.

In “How to quit your tech: a beginner’s guide to divorcing your phone” Martha Hayes documents the results of Goodin’s 7-day plan by exposing the “before” and “after” numbers describing “daily phone screen time” and “daily phone pick-ups” in a fashion reminiscent of dieting success stories. The participants describe their challenges in overcoming phone dependencies, and while it is clear they experience some inconveniences during the challenge, these disruptions are not life-threatening. Hayes’ attempts at diversifying her selection of 6 “busy

²³ See Michael Oliver’s *The Politics of Disablement* (1990) and *Understanding Disability: From Theory to Practice* (1996).

people” is only noted by their ages and races. None of them have an impairment or disability, nor do any of them appear to engage with devices in ways that are absolutely vital to independence or agency. Their difficulties with putting down devices are largely connected to their media-based professions that require digital correspondence, research, and attention. Goodin’s detox is intended to “fit in with a typical week of work” by targeting an audience of professionals with normative bodies and needs with regard to devices, most of whom are concerned with maintaining a type of authenticity that correlates presence with physicality.

Tech evangelists like Goodin as well as ex-Google ethicist Tristan Harris, whose initiatives I will discuss later in the chapter, are what Nathan Jurgenson calls “disconnectionists.” These so-called activists argue that the idyllic pre-Internet age involved “real” connections that have rapidly been “displaced by the allure of the virtual - the simulated second life that uproots and disembodies the authentic” (Jurgenson). Despite this fantasy, the sense of identity that disconnectionists covet belongs to a very real time period where social interactions and community were dictated by geographical location and physical spaces. Yet this “allure of the virtual” refers to a type of user these critics fear have lost their humanity and true self to digital addiction, which completely discounts the many users for whom cybercommunities have served as platforms for access and inclusion. As Jurgenson argues, the anxieties that numerous editorial writers feel required to express about digital youths in particular reveals a crucial point about how interrogations of mobile media assume a universality of able-ness. As Diane Lewis rightly surmises, “The question of who adjudicates the distinction between fantasy and reality, and how, is perhaps at the crux of moral panics over immoderate media consumption” (Lewis qtd. in Jurgenson). As this quote illustrates, there is a need to interrogate assumptions that mobile phone

use is detrimental to authenticity, as well as critique the ableist conventions that link presence to physical interaction.

The Mobile Phone and Privatized Life

At the end of the previous chapter, I introduced the popular notion that technology helps people to “become more human” by enhancing the body and extending reach. My discussion of authenticity and identity formation requires a deciphering of what being “more human” entails with reference to telecommunication devices. The idea that mobile phones enhance humanness refers to the broadening of communicative and influential scope within a humanist narrative of mastering chaotic nature through the use of tools. The mobile phone has been theorized as “a key social object” for users, created to satisfy “the needs and hopes of the modern individual . . . through mobile phone oriented companionship and tele-sociability” (Kopomaa 241). From its early adoption, the mobile phone represented (and continues to represent) the simulation of life in public space that allows for an escape from sedentary life without actually ever leaving home. Many users re-negotiate space through its affordance for broader range of movement, for “to be mobile is part of the coveted freedom offered by the city life” (Kopomaa 242). Within the early discourse of mobile telephony, freedom and liberation were embroiled into the mobile phone’s capacity to defy previously structured rhythms of life. Though the current backlash against their consistent use has manifested in a plethora of tech-free initiatives, the mobile phone’s portability has heightened productivity by moving individuals beyond the fixed realms of desktop computers and dial-up internet connections. Next-generation smartphones have only increased the ease of interacting with others on social platforms other than e-mails, texts and phone calls. They also provide unprecedented levels of hybridity between physical and digital spaces while encouraging an individualized conception of personal mobility.

Personal mobility and tele-sociability are highly bespoke, as “mobile phones are perfectly suited to the ideology of an individualistic society committed to networking” (Castells). By eliminating fixed spaces of interaction, users control their fluidity, to the point where “working and moving in synchrony with oneself are the new co-ordinates to which life is anchored” (Kopomaa 243). No longer are spaces of interaction dictated in terms of public/private, or even indoor/outdoor, as the etiquette of physical space is replaced with public space inhabited by the construction of a private self. As Case argues, “the mobile phone allows place to exist in non-place, and privacy to exist in public. Never before have people been able to disembodiment their voices and talk across any distance, in almost any place” (2007: 6). Not only does this statement emphasize how using mobile phones lets users structure interactions however they like, but it also reiterates the disembodiment fantasy that digital communication encourages. Users can be in many places at once, reshaping communication relationships and the spaces they occupy while controlling a simultaneous push and pull of information. As Lara Srivastava notes, mobile phones (from the Latin *mobilis*, meaning “movable, loose, not fixed, not firm”) allow a person to be reachable independent of place. This is unlike the landline telephone, where incoming calls reach a location and not necessarily a specific person (112).

The mobile phone facilitates a flexibility of belonging to networks rather than physical spaces, as individuals dictate the locations of their engagements. These interactions expedite what some scholars believe is an intrinsically human desire to be constantly tethered or reachable, but this oversimplifies the varied ways people engage with one another and why. For example, Turkle sees practically all mobile phone users as yearning for a socially simplified efficiency that makes communication easier, particularly youths who expect to be ceaselessly connected and “always on” (79). For Turkle, easier communication is about convenience rather

than quality, which is how she argues that technology creates a divide between surface-level conversations and meaningful connections. Other theorists have also criticized the mobile phone “for the superficiality of the interaction generated by the device, such as indifferent behavior towards one’s surroundings, the privatization of lifestyle and increased opportunity for control” (Kopomaa 242). Arguments like these have come to represent a larger trend in the over-disseminated opinions of theorists like Turkle who argues that mobile phones are killing the quality of conversation (Turkle 2011; 2015a; 2015b) and supposedly damaging our ability to connect with one another. The more pervasive and widespread these devices become, the more prominently physical interactions are viewed as signifiers of true connection. This not only creates very limited conditions for determining authenticity, but demotes relationships maintained through digital interactions as self-serving and individualistic.

Matthew Lieberman is one cognitive scientist who argues humans are inherently “wired” to connect with other humans because we seek out connections for the benefit of our well-being. Lieberman claims our motivational landscape is self-interested and driven by feelings of pleasure over pain, which perhaps suggests these connections are established for personal gain, rather than fostering empathy and learning. Lieberman alleges that humans have a psychological need to make connections external to the self in order to help define the internal self, which would imply that the Western predisposition with connection is self-centered and focused on individualism. I see the current iteration of the self, when framed as a unitary subject, as highly individualized because it is informed by a division between internal (self) and external (other). It is in this divided self that the individual becomes motivated to progress and extend by absorbing information from encounters rather than engaging in relationships of exchange.

While it is true that social media platforms encourage users to connect with as many people as possible, theorists like Turkle criticize these points of contact as superficial and quantitative at best. In terms of the construction of self, she states: “Our new devices provide space for the emergence of a new state of the self, itself, split between the screen and the physical real, wired into existence through technology” (2011: 16). The problem with seeing the split in identity formation as juxtaposed between physical and digital suggests the dual natures of real and simulated are in conflict, which they are not. Turkle views the “wired” user as the collateral damage of this conflict who struggles to forge meaningful connections but is only able to participate in what she deems as vapid interactions. Yet this assumption of a normative subject for which in-person communication is possible and preferred creates an exclusionary depiction of what authenticity means in terms of representation and connection.

Presence and the Ableism of Face-to-Face Conversation

Imagining the self as only emerging when one can engage in physical interactions over screen interactions assumes this is an ideal and viable choice for everyone. Mobile phones are often marketed towards a normative demographic of users interested in using them as multitasking instruments “for enhancing both temporal and social efficiency” (Kopomaa 242), but this only describes the experiences and needs of certain users. In “Technology for people, not disabilities: ensuring access and inclusion” Alan Foley and Beth Ferri point to technology and its “promises to liberate us from the confines of embodiment and provide us with a futuristic antidote for impairment” (192). They argue that though technology is often linked to inclusion, it can also be isolating because it promotes not only that every user engaging with a device has the same needs, but that a device can make bodily difference disappear. The marketing language used by some of the top smartphone manufacturers accentuates assumed ways of being that

“reflect taken-for-granted ideas about what constitutes normal” (192). For example, Apple devotes a lengthy page on their website to the simplicity of switching from Androids to iPhones to describe why “Life is easier” with their products. The site states that “ease of use is at the core of everything Apple creates,” promoting features that heighten control and efficiency: “With a swipe, a word - or even a glance - you can do things like make purchases with Apple Pay or customize your iPhone” (Why Switch). OnePlus similarly boasts that their newest phone, the OnePlus 7 Pro, allows for “the convenience of having your favorite apps at the tip of your fingers” and emphasizes intuitiveness and simplicity as the device’s most attractive components. OnePlus’ tagline for their phones repeatedly include the phrases “Unlock the Speed” and “The Speed You Need,” creating the impression that what most customers desire is a device that boosts their own efficiency. While these features are not unwelcome, the emphasis on seamless control sees all mobile phone users as primarily interested in devices that allow them to initiate their tasks with increased speed. Such ideas about how individuals should use technologies and what they likely require of them enforces a standard of manufacturing and design. This not only creates a form of social exclusion (Foley and Ferri), but overlooks the mobile phone’s potential as a mechanism of accessibility and participation, not just efficiency and convenience.

According to the Survey for User Needs (SUN) for Wireless Technologies conducted in 2012-2013 and in 2015-2016²⁴, 84% of people with disabilities own smartphones, and 91% use tablets from a sample size of 1,168. In their investigation of smartphone activities, Morris, Sweatman, and Jones survey the texting, mobile Internet use, e-mails, social media apps, voice calling/video calling and map usage of people with disabilities. Compared to the Pew Research

²⁴A multi-year survey on mobile phone use by people with disabilities conducted by the Rehabilitation Engineering Research Center for Wireless Technologies (Wireless RERC).

Center's surveys of general users during the same years, Morris et al. find that the usage is similar between both groups, with the exception of video calling/chatting apps such as WhatsApp and FaceTime. In the 2012-2013 surveys, Pew and SUN had similar results with respect to video applications, but SUN reported substantially higher usage in 2015-2016, which Morris et al. attribute to the increase of smartphones with larger screens and improved high-speed 4G access for video. Due to this increase in accessibility and functionality, they comment that "video calling can be a key assistive technology for people with speech, hearing, and cognitive limitations" (57), while "people with vision or mobility limitations have regarded mobile voice-calling as a key personal security feature for going outside the home" (63). Though these statements insinuate a medicalized perspective of mobile devices as assistive, this study recognizes that people with disabilities have varied relationships with devices, depending on their own needs. The ordering of subjects and their bodies is often produced by assumptions of disability as a general category of limitation. However, Moser argues that the creation of subjectivities relies on how individuals interact with technologies, what they seek to achieve in those interactions, and what barriers may or may not exist in those pursuits. Moser uses the plural "subjectivities" to indicate that people move through subject positions fluidly and are not fixed, and that becoming a subject involves agency (377). Achieving this agency involves the performance of actions in the world that lead to independence, but this means different things for different people.

In the last decade, studies on information communications technologies (ICT) have been dominated by debates over whether mobile devices are detrimental to face-to-face conversations, a concern that assumes a universality of users who can easily communicate physically.

Criticisms against the constant connectivity afforded by mobile phones as threatening to "real"

experiences prioritizes a particular type of constructed body. The mobile phone is believed by many to promote a divided consciousness, which critics claim is responsible for attracting users into a technologically mediated world of “elsewhere,” causing them to enact “absent presence” (Gergen 227). Absent presence suggests a state of existence that diminishes one’s connection to physical place while engaged in digital activities. This results in partially attentive engagement, compared to interactions of “full presence,” where one is tethered by the immediacy of their physical surroundings and relationships (Gergen 228). Kenneth Gergen evaluates how the mobile phone has expanded the domain of absent presence that began with the landline telephone, which would “demand that participants divorce their attentions from their immediate surroundings” (235). My interest in the location of presence is an attempt to dismantle the reason being present or “there” is often considered a strictly physical space and not a digital or hybrid arena. It is necessary to reconsider variations of presence to establish a diversified idea of subjectivity and beingness to interrogate assumptions about the varied relationships people have with devices.

This being said, Gergen’s definition of full presence is too narrow because he believes it to be “constituted by the immediacy of concrete, face-to-face relationships” (227). He goes even further by claiming, “we must consider as powerful contributors to absent presence virtually all communications technologies that enabled people to communicate at a distance” (228). What he means is that any demand of our attention by digital engagements takes us away from being completely physically and mentally present. Gergen defines telephones as “endogeneous” (245) technologies, meaning they originate within and extend face-to-face relationships that were previously only close in terms of proximity. Mobile phones make it even easier to maintain these relationships because people can communicate while outside of the home, which Gergen believes “more effectively sustains one’s identity as a singular and coherent being” when the

“nuclear circle can be perpetually sustained” (235). Gergen defines this nuclear circle as “those who are otherwise ‘close’ in the traditional sense: family, intimate friends, close colleagues and the like” (235). These bonds become strengthened by mobile phones because pre-existing relationships can exist elsewhere, and Gergen accepts the divided attention this brings, so long as the recompense involves maintaining the nuclear circle.

For Gergen, enlarging the domain of absent presence to the many who exist outside of physically established connections disrupts a localized, community-based sense of identity. This is what he refers to as the “dark side” (231) of Howard Rheingold’s optimism regarding relationships in cyber-communities, because “the realities embedded in what we often call our ‘primary bonds’ [are] placed under potential threat” (230). One of the problems with this argument is it assumes identity formation and sustainability should depend on extending location-based networks only. Gergen’s position does not consider those who may not find themselves situated within local mainstream identity clusters, and must cast a wider digital net to find communities in which they belong.

Many scholars (Plant 2001; de Souza e Silva 2004, 2006; Kopomaa 2002; Pertierra 2005) have written about the early adoption of mobile phones as developmentally beneficial to youths due to increased exposure to external influences and relationships outside the home. Individual mobile phone usage has changed the collective identity of families occupying the same space, as “the identity of the family unit becomes less about ‘oneness’ and more about ‘many-ness’” (Kopomaa 112). While this has altered the dynamics of the household and appears to some critics to be the cause of withdrawal, it has also become a determinant of a different kind of collective network-building. Of course, this phenomenon is not unique to mobile phones and has been well documented with relation to personal computers with Internet connections in the

home, or even landlines. Yet the mobile phone's portability generates a unique type of social contact where "the spectrum of individual choice is kept as broad as possible" (Kopomaa 242), meaning people can initiate and continue interactions with others from any location and in any capacity while simultaneously performing other tasks. This breadth of choice can be empowering for many types of users with varying needs, but there are critics within the mainstream that view mobile devices as harmful to emotional development, empathy and well-being.

As mobile phones facilitate the creation of second selves through social media, digital relationship-building is continually disparaged due to the subsistent divide between online/offline, or plugged/ unplugged. Turkle's earlier, arguably more academic texts, *The Second Self – Computers and the Human Spirit* and *Life on the Screen: Identity in the Age of the Internet*, are more inquisitive than critical and champion cyberspace as a means for interacting with others through virtual worlds. In *Alone Together: Why We Expect More from Technology and Less from Each Other*, she ramps up her criticism of humans interacting with machines and through machines, asserting how young people on social media pay insufficient attention to one another. She sees mobile phones as the culprits of increasingly superficial relationships, arguing that the solicitation of advice and validation from others becomes detrimental to self-reflection.

In *Reclaiming Conversation: The Power of Talk in a Digital Age*, Turkle claims that *Alone Together* was a reaction to a culture smitten with technology, ignorant of "our inattention to each other in our always-connected lives" (2015a: 39). This newer book is a more skeptical look at what digital communication is doing to in-person conversation in a time when she believes people have begun to notice it. She is concerned about how easily our enthusiasm for instant connection has made us turn away from physically present people in favor of machines:

We have embarked upon a voyage of forgetting. . . .[W]e speak

through machines and forget how essential face-to-face conversation is to our relationships, our creativity, and our capacity for empathy.... [W]e take a further step and speak not just through machines but to machines. (2015a: 38)

Turkle's skepticism of humans speaking to and through machines implies technology is more hindrance than help, suggesting digital communication is secondary to face-to-face communication. To reiterate this, Turkle refers to a study where college-aged friends are engaged in four types of communication: face-to-face, video chat, voice calling, and instant messaging. She concludes that in-person conversations produce the most emotional connection and instant messaging the least (2015a: 49). She does not specify what she means by emotional connection, nor how it is measured, which suggests that the relationships and degrees of closeness between the test subjects are not taken into account. She claims: "It is when we see each other's faces and hear other's voices that we become most human" (2015a: 50), referring to off-screen conversations that occur in person, ignoring the affordances of platforms such as video chatting.

Turkle's tendency to measure meaningful contact and expression according to physically recognizable visual and audible signifiers implies two things: That those who engage without these sensory cues are not really communicating in "human" ways, and that they are conversing with their devices instead of with each other. The idea that deepening connections with people can only be performed in one particular way incorrectly generalizes digital engagements as "inhuman" relationships forged with machines. This completely disregards the validity of the device as medium of entanglement for individuals who, for a variety of reasons, enact identity and subject-making through a combination of digital and physical spaces.

As Lennard Davis writes in *Enforcing Normalcy*, assumptions about normative ways of communicating are not “natural.” These are essentialist ideas: “like all signifying practices, [it] is not natural but based on sets of assumptions about the body, about reality, and of course about power” (2005: 16). The notion that face-to-face conversations are declining does not consider the many ways interactions are shifting into new communication exchanges, what with the popularity of messaging apps that incorporate audio, video, emojis and AR emojis as multifaceted expressive features. Face-to-face communication is not the most significant or authentic means of interaction and identity performance for many users, and believing so perpetuates digital dualism by considering digital signifiers as less genuine. Technologies that are disruptive are not necessarily destructive, and when technology is blamed for distracting us from the “real” world of authenticity and is held accountable for pulling us from our physical spaces and interactions, we are less inclined to examine our own role in these occurrences. When describing the consequences of being dependent on our devices, Turkle claims, “These days, we want to be with each other but also elsewhere, connected to wherever else we want to be, because what we value most is control over where we put our attention” (2015a: 42). This statement perhaps proves a different point than she intends. Mobile telephony promotes individual extension, efficiency and customization as significant parts of social engagement and connection, but this stems from the expectation that devices should be primarily used to control spaces rather than engage with them.

Enacting Agency Through Control

It is important to re-negotiate the conception of self that is based around agency as ownership, because an inclusive posthuman understanding of self should emerge from interactions and exchanges, rather than what exists in the realm of human control. Yet Clark

erroneously argues that the subjective self is linked with what can and cannot be controlled and manipulated, citing philosopher Daniel Dennett's formula: "Control is the ultimate criterion of the self. I am the sum total of the parts I control directly" (Dennett qtd. in Clark 130). This reductive example suggests that we recognize the self primarily in relation to what can be extended using our internal will, which Clark illustrates using Stelarc's "Third Hand" (1980-1998) performance piece. In "Third Hand," Stelarc attaches a third mechanical arm to his body to explore the relations between body, machine, self and agency, claiming: "As interface, the skin is obsolete. The significance of the cyber may well reside in the act of the body shedding its skin" (Stelarc 2). Clark clarifies that Stelarc's idea should not be confused with an "outmoded notion of the person as a disembodied thinking thing. Rather, it invites us to explore a new realm of complex and multiple embodiment, with an associated expansion and enrichment of the subjective sense of self" (Clark 117). I argue that this interpretation of multiple embodiment rests on the projection of the self through the utilization of external objects, and that this does not really allow for a radical exploration of new mergers.

When Clark justifies the mobile phone, for instance, as a prosthetic limb that humans wield and control while carrying out daily tasks, he is claiming users are opting for "mindware upgrades" in the form of "electronic prostheses capable of extending and transforming their personal reach, thought, and vision" (10). The concept of mindware upgrades is inspired by Dennett's term "mind tools," which suggests tools are specifically designed to complement a fundamental need for humans to meld with technology. On the one hand, Clark believes one of the distinctive elements of humans is their ability to enter into complex relationships with artificial constructs. These relationships rely on humanity's openness to information-processing

mergers, which coincides with inclusive posthumanism, yet Clark confines humans/technology relationships within the realm of extension.

My purpose for focusing on Clark's position is to show how it represents the subtle distinction between an inclusive posthuman co-emergence of humans and technology, and a humanist interpretation that insists technologies have developed in service of human needs and the desire to control environments, tailoring themselves to us just as we do to them. This is not precisely the same argument, as even though Clark's thesis reflects a desire to see humans and machines working in tandem, which supports inclusive posthumanism, he also positions technology as a "natural" tool for human productivity, which still serves humanist goals. As an example, he claims: "We must never underestimate the extent to which our own abilities as artists, poets, mathematicians, and the like can be informed by our use of external props and media" (77). While this appears to bring humans and technologies together, it does not represent an entanglement or a union, but rather a master/slave relationship²⁵ where internal human identity formation relies on expressions via external tools.

Like Braidotti, I reject the notion that humans are integrally hard-wired to use these technologies in order to fulfill a greater purpose centered on individual progress. Yet Clark believes these mergers are essential to humanity's creativity, arguing for "the human artist, armed with her trusty sketch pad, as a unified, extended cognitive system" (77). With this mindset, technological mergers that amplify the internal self actually produce enhanced humans that are unified. Thus, no matter how we use telecommunication technologies to connect with others, these connections will always be focused on self-centered individualism, a problem that

²⁵ In computer networking, master/slave is a model of communication where one device or process has unidirectional control over one or more other devices (Wikipedia entry "Master/slave (technology)").

stems from how the creation of subjectivity is evaluated. Mobile phones are designed to allow for a customizable, controlled experience that supports a humanist vision of the subject, but this is what Braidotti is fundamentally against. As I stated in Chapter 1, Braidotti's posthuman is anti-individualistic, but the conversations around telecommunication technologies as instruments of extension perpetuate an individualistic transhumanist narrative. Braidotti claims, "we need to be equally distanced from both hyped-up disembodiment and fantasies of transhumanist escape, and from re-essentialized, centralized notions of liberal individualism" (2013: 102). Braidotti's multiplicity is an inter-relational process of identity emergence fortified by entanglements, not a duplication of the self via online expansion. Cyberspace enthusiasts mythologize disembodied spaces with pledges of fluidity, but as Braidotti claims:

One of the risks of the 'hype' that surrounds the post-anthropocentric body-machines is indeed that of recreating a hard core, unitary vision of the subject, under the cover of pluralistic fragmentation. . . . [T]his would produce the deception of a quantitative multiplicity which does not entail any qualitative shifts. (2013: 102)

What this means is the transhumanist fantasy of freeing oneself from the body in order to occupy as many environments as possible does not reject unitary individualism, but affirms it. I point to this to illustrate that mobile telephony as extension encourages a departure from the body, framing disembodiment as a desirable and even necessary element for this kind of identity formation. To explore the ways in which humans interact with devices outside of technological extension and individualization, it is necessary to consider identity formation as a series of relationships built through entanglements, not projections. This means re-examining the many

connections that are facilitated through devices, in spite of critics panicking about the decline of face-to-face conversations and blaming it on screen culture.

Enhancing “Humanness” Through Meaningful Connections

Jonathan Franzen, in a review of *Reclaiming Conversation* writes: “Our rapturous submission to digital technology has led to an atrophying of human capacities like empathy and self-reflection, and the time has come to reassert ourselves, behave like adults and put technology in its place” (Franzen). This statement hits on an important component of Turkle’s book: Our devices help us maintain identities built on controlled self-presentation and interactions, which has resulted in an oversaturation of technological inference where we believe our selfhood is being compromised, and we must get it back. In pursuit of greater control over our spaces of interaction and our lives, we engage with devices we simultaneously fear are controlling us by robbing us of authenticity. Yet the belief that engaging with people, environments, and information through screens interferes with authenticity creates a binary between physical and digital interaction. There is very little middle ground with this perspective, for it assumes digital engagements signal a lack of authenticity and thus humanity. For Turkle, living a more or less meaningful life centers on how much humans can resist instant gratification and immediacy. She argues: “What feels fine is that in the moment, so many of their moments are enhanced by digital reminders that they are wanted, a part of things. A day online has many of these ‘moments of more.’ But as digital connection becomes an ever larger part of their day, they risk ending up with lives of less.” (2011: 47-9). This is one way Turkle weighs what she calls “sips” of conversation against “gulps” of connection (2015a: 37) to argue that digital devices promote relationships of quantity over quality.

Similarly, sociologist Judi Casey argues ICT actually makes us *more* human, but only if we adhere to the belief that humanness is measured by overcoming barriers we think stand in the way of true connection. For Casey, the distractions presented by ICT itself are these barriers, so she argues we must “restrict ourselves to a single point of focus” and “focus on our high-quality connections,” which she considers to be family members in the same room together. There is a consistency with which each of these arguments hinges on an individual theorist’s understanding of what makes us human, and these generalizations do not consider issues on a case-by-case basis. Casey broadly argues devices prevent people from interacting with those in their physical vicinity, as “they may be directing their energy to acquaintances listed as friends or contacts, rather than their close connections” (Casey). In this case, close connections signify people within a measurable physical proximity, but this does not consider the emotional connection or familiarity of the person engaged on the other end of a text conversation. She assumes the people close to us are in the home and are therefore present, while those physically distanced are classified as work acquaintances and contacts, but this is not always the case. This is a different perspective than Gergen, who argues mobile phones bring family members closer together to maintain the nuclear circle. He accepts that personal mobility encourages people to leave their homes while wanting to remain attached to their families, but he too privileges connections that have been pre-established by face-to-face interactions.

Casey argues that if ICT has any chance of helping humans forge more meaningful connections, we must focus on setting boundaries for the presence of these devices in our lives to prevent disengagement from our physical spaces. She claims, “we must take charge of ICT, or technology won’t make us more human, but rather more stressed, less creative and more disconnected from our friends and family” (Casey). Her solutions involve device-free parties

where people check their mobile phones at the door, as well as Digital Detox retreats, “where you can focus on your internal self for a reprieve of the endless stream of incoming external stimuli” (Casey). Yet focusing on the internal vs. the external perpetuates the idea of the body as a barrier that encloses internal selfhood, managing external incitements before they become too distracting.

The arguments outlined above suggest technology has the potential to enhance “humanness,” but this in itself is an arbitrary concept dependent on our faculty to resist the enticing immediacy that mobile devices offer. This unease over our ability to forge deep relationships sets off a cycle of cause-and-effect, where we believe the very tools we engage to become more human (i.e. more easily connected) are actually making us less human. When it comes to human/machine interaction, agency is interpreted as control over one’s tools of authorship, but this is founded on a dichotomy between opposing forces of natural/unnatural, organic/machinic. Braidotti cites Hayles to illustrate the problem with preserving these dualisms and consigning technology as an instrument of control:

Hayles attacks the classical humanistic notion that subjectivity must coincide with conscious agency, in such a way as to avoid some of the mistakes of the humanist past, notably the liberal vision of an autonomous subject whose ‘manifest destiny is to dominate and control nature.’ (Hayles qtd. in Braidotti 2013: 101)

When authenticity is enmeshed with this understanding of agency, technology becomes an unrelenting force we must harness and put to proper use through human rationality. The nature of technology and its place in human affairs has been evaluated by many scholars, but I would like

to point to one particular debate that may help to reveal the underpinning of this inadequate perspective of technology.

In the 1962 Encyclopaedia Britannica Conference on the Technological Order in Santa Barbara, CA, the editor of the proceedings claimed, “if we are to avoid the disasters it [modern technology] lays open to us and take advantage of the opportunities it presents, we must put it in the control of reason“ (Stover 383). This was a time of tremendous concern over the accelerating speed of technological change. The idea was that technology must be harnessed if it is to be used effectively, though French sociologist Jacques Ellul was highly skeptical that rational control of technology was even possible (Matlack). Ellul’s argument about *technique*, not to be confused with technology, may have been considered fatalistic by some but is useful for assessing society’s uneasiness about technology and control. Technique “does not mean machines, technology, or this or that procedure for attaining an end” (Ellul 1964: xxv). Rather, it is “the totality of methods rationally arrived at and having absolute efficiency . . . in every field of human activity” (1964: xxv). Ellul saw technique as the foundation of every rationally ordered method for making human actions more efficient in a capitalist sense. He believed society was bound to technology, not because it could make things easier and more accessible, but because our need to support the machine of modern society would forever tip the scales in favor of an incontestable notion of technical advancement and progress. Ellul describes how “the machine, the characteristic of the nineteenth century, made an abrupt entrance into a society which, from the political, institutional, and human points of view, was not made to receive it; and man has had to put up with it as best he can” (1964: 4). Here, technique is the process of adapting social conditions to make the machine run as smoothly as possible, so the need to turn traditional practices into rational, effective, and profitable methods are responsible for “threatening human

freedom and responsibility and suppressing the necessary conditions under which a solution to this predicament seems possible” (Matlack). The predicament is that nothing escapes technique, for it is a closed circle:

Technique elicits and conditions social, political, and economic change. It is the prime mover of all the rest, in spite of any appearance to the contrary and in spite of human pride, which pretends that man’s philosophical theories are still determining influences. (1964: 133)

For Ellul, human invention is dependent on helping fulfill the requirements of the machine, which “represents the ideal toward which technique strives” (1964: 4). Thus, his fear is that technique outgrows human control, not individual technologies we attempt to govern. Rather than focusing on technology’s enticements as dangerous and alluring, Ellul illuminates society’s role in maintaining and perpetuating the conditions in which we employ technology.

Since Ellul considers technique as a rational ensemble that includes “self-augmentation, automization, absence of limits, casual progression, a tendency towards acceleration” (1983: 2) human behavior cannot be measured according to technical objects, but according to this system. His solution is “a global change in our habits or values, the rediscovery of either an existential ethics or a new ontology” (1983: 2). In the previous section, I suggested digital devices are often held accountable for the difficulties people face in establishing meaningful connections and preserving authenticity. Mobile phones promote specific techniques of efficiency that were once presented as an option but have now become a necessity imposed on human activity. Yet when devices are viewed as operational instruments that liberate humans through extension, critics blame them for conforming us to a value system that upholds the very technological society that

has dictated behaviours for a long time. Thus, to reclaim our place as active agents and maintain a sense of humanness many critics feel is at risk, critics demonize technology and its penchant for addiction rather than establishing an ethical framework that reconsiders various human relationships to it.

Addiction and the Solution to Take Back Control

Google's former Design Ethicist Tristan Harris believes he can solve what he sees as the problem with technology, which he illustrates on HumanTech, his new organization's website: "Our society is being hijacked by technology. . . . [W]hat began as a race to monetize our attention is now eroding the pillars of our society: mental health, democracy, social relationships, and our children" (Harris). He regards technological engagements, particularly social media, as powerful enough to capture users through its design as a "zero-sum race for our infinite attention", which "isn't best for our well-being" (Harris). From the start, Harris classifies technology as something that has turned on users despite its inherent purpose to serve, an idea that is not only characteristically humanist, but disregards the fact that it actually does serve the interests of those who created it. Harris sees technology not as something humans interact with, but as something that helps us engage with other things we can control and manage to our liking. This is not a symbiotic relationship, but a power-play for control that places humans into a literal "race" against machines that Harris claims machines are winning. In this sense, Harris sets up a strawman argument of sorts – by pitting the consumer against the device, he glosses over the reality that devices are designed within a capitalist system, and he blames the technology. He claims designers "play your psychological vulnerabilities (consciously and unconsciously) against you in the race to grab your attention," comparing them to magicians that look for blind

spots to trick their audience (Harris), but these people are serving the agenda their corporations (and consumers) demand.

It is worth noting that Harris does not entirely fault technology for controlling users, but claims that designers take advantage of the freedoms and choices technology affords to coerce users into handing over their attention. Designers are cast in a negative light as Harris sees them working tirelessly to convince people that their phones are empowering them, when in reality, they are distracting them from things in plain sight. Harris illustrates an example of the smartphone application “Yelp” that displays a list of restaurants for a group of people too distracted to notice the establishments across the street (Harris). In this case, he claims the multitude of choice on the app implies empowerment and control, as people mistakenly assume that phones give them the most power by providing the most data. Though designers shape this user experience, Harris maintains that smartphone apps steal attention because they have been designed to behave like slot machines enticing us with the affordance of instant accessibility, which plays into what he deems is a human need to engage in pleasure-seeking behavior.

Psychologist Susan B. Weinschenk claims people who are frequently distracted by notifications that pull them away from physical spaces and interactions are being urged by spikes in dopamine. Dopamine represents the pleasure system of the brain that makes people desire, seek out, and search for gratification. While reporting on research conducted by Kent C. Berridge and Terry E. Robinson (1998), Weinschenk argues dopamine “makes you curious about ideas and fuels your searching for information” and that it is stronger than the opioid system, which means people seek more than they are satisfied (Weinschenk). Furthermore, the anticipation of a reward is what drives the brain’s activity, particularly when something is unpredictable. Like Harris, Weinschenk likens notification systems for text messages and emails

to variable reinforcement schedules that provide hints that a reward is forthcoming. The addictive behavior triggered by this stimulation causes people to enact what she calls a “dopamine loop” that she claims people can take steps to get out of, or prevent (Weinschenk).

Weinschenk and other theorists like Harris are so concerned with breaking the repetitive cycle because they worry the dopamine loop, which is actually triggered by technology infrastructures, is preventing people from making the best use of their time. Yet blaming addictive behaviour on a desire for dopamine completely disregards the software infrastructure that is intentionally designed to trigger and then manipulate people into continuously scrolling. Harris’ goal may be to help design better devices that “defend a billion people’s minds from getting hijacked” (Harris), but this suggests a hive-like mentality that stunts individuality, and with it, the creativity and efficiency that theorists like Clark think people should use technology to enhance. This argument ratifies the idea that our digital devices are standing in the way of some greater potential of ultimate selfhood that humans are destined to reach. However, Harris thinks the convenience of extension and multiplicity causes us to miss how our minds are being exploited, which chips away at what he calls our “integrity.” In this sense, integrity appears to represent autonomy and control over how one chooses to spend their time and where they choose to put their attention, which is inextricably linked to empowerment.

Like Turkle, Harris dismisses digital engagements as inferior, preferring to use the term integrity rather than authenticity while disseminating the same argument. He believes companies such as Apple and Google have a responsibility to design devices that empower rather than control users, but empowerment in this sense is defined as independence from a device, which is not the lived reality or desire of every user. He is also addressing a type of normative body constructed in such a way that it is viable to put down or take vacations from the engagements

mobile devices afford many users. While user experience design is intended to entice people, Harris' casting of technology as the enemy prevents any scenario of an interdependent relationship with it. His specific ideas about how humans are supposedly meant to exist are essentialist and ableist, particularly when he claims, "living moment to moment with the fear of missing something isn't how we're built to live" (Harris). Again, this implies that technology exists to serve us, but only if we can control its nefarious nature and the unhealthy behaviors it encourages. When Harris claims smartphones "are not neutral products. They are part of a system designed to addict us" (Harris), he concedes that designers *are* guilty, but only for harnessing the qualities technology allegedly possesses as part of a capitalist system. In his crusade against enterprises that seeks to hijack attention, he ultimately fails to direct his fight against the actual system and places the onus on individuals, which treats the symptom rather than the cause.

Harris' "Time Well Spent" ideology is meant to help users hone in on the thoughts and concerns they want to enact, determined by personal value systems. The model is structured around these principles, which co-founder Joel Edelman argues is a scheme for how one wishes to spend their time, rather than the desired outcome of their activities. One's values do not focus on the goal, but illustrate how one wishes to approach the actions that lead up to that goal. He uses the example of the Facebook News Feed to show the disconnect between someone spending hours scrolling through it, and the goal of cultivating social relationships that are important to them. If someone thinks that their hours of scrolling are a waste of time, this is because the act of scrolling through the News Feed is not meaningful for that individual. Edelman argues that a platform like Facebook is not designed to make it easy for someone's actions to match their value system: "[S]ocial software simplifies and expedites certain social relations, and certain

actions. If these actions and relations that are made simple don't match a particular user's values, then the software makes it harder for that person to live by their values, and leaves them feeling that their time was not well spent" (Edelman). As a movement, "Time Well Spent" is really about re-aligning methods of socializing and values, and focuses on humans taking power over social engagements and spatial interaction back from badly designed software. Time *not* well spent invokes a discussion around ways that time *could* be spent according to individual preferences for identity management and social currency. These appear to be predicated on Turkle's interpretation of meaningful connections, which privileges physical interactions.

Edelman's solution is to re-design software so that it works like flexible social conventions that are remodeled by the user, making room for as much value-diversity as possible. In essence, the entire model strives to find new ways for people to control their tools of authorship and make things even more personalized, taking back power not only from machines, but from large corporations that Harris and Edelman compare to machines. The partners at HumanTech proudly disassociate themselves with companies like Google (many of them claim they are Ex-CTOs, etc.), which suggests a divisive "us vs. them" mentality where Harris claims he and his staff are on "Team Humanity." Harris takes this division even further by suggesting that current smartphones must be re-conceptualized with "human design" at the forefront, because current developers are designing products that put humans in constant danger. Overall, Harris' emphasis on vulnerability and the entrapment of technology leaves people with such little agency, it is little wonder he so fervently rallies that we must take it back.

Digital Detox Camps and the Fetishization of the Real

Ann E. Taylor, in her critique of what she calls humanistic psychology, argues against the victimization of humans by what she sees as disembodied technologies:

Human beings are seen as victims of technology; we are ‘prisoners of our own creations’ (Romanyshyn and Brien, 2005), rather than agents who make use of and effect technology. In this critique, we are depicted as passive consumers and unquestioning participants in technology. (Taylor 22)

Taylor’s point seems to oppose Harris’s insistence that humans fall prey to the machinations of technology, but she too is arguing that human agency is contingent on effectively harnessing technology for personal gain while taking charge of it. To reinstate agency, Harris recommends a seven-step program of sorts to help us spend time well in daily life, when contact with technology is unavoidable. He also encourages digital detox cleanses as a way of making people more mindful not only of how they spend their time, but of who they really are. This implies that technology is an inhibitor to self-awareness and to living a full, present life.

Harris also supports programs that require full abstinence from devices, reinforcing rigid barriers between the genuine way to be oneself as opposed to being inauthentic and distanced. Programs such as Camp Grounded, a “camp for adults,” seeks to remove participants from the “adult” roles they play in everyday life and bring play and leisure to the forefront. Digital devices of any kind are prohibited, as the camp pushes participants to liberate themselves from technology and “celebrate personal freedom” by creating friendships “based on real-life connections.” Camp Grounded promises “100% IRL (in real life) Experiences. No Screens. No Filters” (Camp Grounded). The guidelines are very clear about what the camp is not: a conference, a networking event, or a work summit. The idea behind this model of creating a “space from the working world where we can all once again be human” is to firmly separate work and leisure. At camp, one can “connect with fellow humans as humans” (Camp Grounded),

a philosophy that creates a clear demarcation between those who are truly “human” and those who are not. This is essentially an arbitrary marker of human purity, meaning that in order to be authentic one must be completely separate from all distractions and remain in the present moment.

As with criticisms of mobile media, Camp Grounded treats all elements from the outside world as potential distractions that can remove people from their physically present state. For example, conversations about work are prohibited because they divert from a carefree mindset, as do recreational drugs and alcohol. Any element that is too reminiscent to the world of adults is also discouraged, including the use of given names. Instead, nicknames are intended to provide people with new identities with which they can participate in “an environment of authenticity” (Camp Grounded). In order to uphold a child-like state and return to purity, participants are told to engage in play-oriented activities such as face-painting, singing, and non-competitive sports.

Camp Grounded is a fascinating example of dualism at its extreme; “adulting” is deemed inauthentic since any distraction, whether digital or analog, takes away from a true presentation of self. Conversely, engaging in child-like play with no schedule, responsibilities or connection to identity in the outside world is considered more “real.” For Camp Grounded, the true measure of humanity is unrelated to what one does for a living, since career-oriented topics are relegated as a means to further one’s position and nothing more. This disregards one’s professional life and work-related interests and passions that often play a significant part in identity formation. This detox camp offers much more than a break from digital devices, as the language implies authenticity is impossible unless one rids themselves of filters – in photos, through social media avatars, or even filters used in various social situations. The consensus for this type of model assumes people desiring an authentic experience must be willing to completely disengage from

their professional lives, as digital devices are automatically classified as work-related instruments that disrupt true, genuine conversation with real people. This neglects the fact that people might be using them to check up on loved ones while away (for example, Camp Grounded does not allow children to attend).

The opportunity for re-invention in an intentional community-type setting is not dissimilar to the experience of creating an avatar or handle when engaging in intentional communities online. Like online platforms that offer social media, digital detox camps promote escapism as a legitimate path towards authenticity and the experience of “real” life, but this creates narrow parameters that eliminate the potential for hybrid existences. Additionally, the idea to give people “the time and space needed in our fast-paced world” (Camp Grounded) is reminiscent of mobile telephony’s promise of non-traditional space creation and liberation from time. A partner site called “Digital Detox: Disconnect to Reconnect” distributes the mantra to “leave time behind” and “enjoy each moment as it is experienced,” which romanticizes a disengagement from traditional measurements of time to emphasize freedom from structure. The website teasingly encourages the use of sundials instead of watches and advocates that “no matter where you are, you are always on time” (Digital Detox). Like Kopomaa’s point about the mobile phone helping one to move in synchronicity with oneself, the idea of controlling time by disregarding it and moving about freely is likewise intended to be empowering.

The creators of the Digital Detox website target a demographic they believe need to escape from “frantic, stressed, overworked lives that now involve screen time too much of the time” (Digital Detox), but these are people who may have the option to disconnect. Digital Detox advertises an escape not just from screens, but from responsibilities with taglines like: “We help you slow down. We remind you to look up,” Digital Detox attempts to embrace and celebrate

non-productivity and leisure. While there is nothing inherently wrong with slowing down and taking stalk of one's surroundings, these costly retreats advertise a literal vacation from the physically strenuous realities of life, which is why most take place on tropical islands, or the like. The emphasis on relaxation for the body is meant for users who are not only able-bodied, but can afford to go on expensive retreats, purchase books and take part in paid workshops, all to help them unplug from the thousand-dollar devices they already own.

Privileging Physical Interactions

The notion that divorcing from one's smartphone signals an independence from being tethered only considers a particular kind of relationship certain users have built with their devices in the first place. When imagining posthuman subjectivities of inclusion, it is more useful to subscribe to Moser's broader definition of independence, which includes the capacity to "manage on one's own" (379). Her example of the paraplegic "Jarle"²⁶ indicates that dependence can shift from people to technologies, which affords an entirely different type of agency. Though she refers to a wheelchair, mobile devices can also enable a multitude of participatory actions that challenge exclusionary spaces. Critics like Harris and Edelman who demand people "disconnect" to regain their independence ignore how "independence is not simply about disconnection, but also about the shifting out and replacement of some attachments (or dependencies) by others" (Moser 380). Moser sees attachment as a type of non-biological scaffolding to distribute tasks to artifacts rather than people, and while I take issue with this use of the term attachment, her point also suggests the significance of everyone being entangled with different combinations of people and devices.

²⁶ A former Norwegian captain of the 8-way formation skydiving national team, who was involved in an accident that broke his neck and paralyzed him from the fourth cervical vertebra and down (Moser 378).

It should also be noted that assistive technology's "myth of independence" (Foley and Ferri 193) has been criticized by disability scholars due to its implication that only people with disabilities are dependent in the first place. When technology is viewed as primarily assimilative for people with disabilities, this "obscures the myriad of ways that all people are interdependent on one another and on technology" (192). This is why it is important to interrogate forms of exclusion that technologies foster and propose new ways of thinking about technology that invite opportunities to "practice active agency in ways that surpass simple function" (Moser 379). This steps outside the assumed goal of restoration and productivity that people with disabilities are often expected to have with their technologies, which I will further explore in the next chapter.

Digital detox and meditation initiatives also highlight the idea of restoration, but this is a loaded term with varying implications. Unplugging to restore is endorsed as an exercise to help able-bodied and privileged mobile device users re-charge and free their minds so to speak, but this has less to do with finding inner peace and more to do with enhancing their overall productivity. In "How Googlers Avoid Burnout (and Secretly Boost Creativity)" Wired writers Brad Stulberg and Steve Magness trace Google's popularization of the Eastern Buddhist practice of mindfulness to Chade-Meng Tan, an employee who launched "Search Inside Yourself" in 2007. This 7-week mindfulness course led to the creation of its own department called "Personal Growth" due to its effectiveness at making employees "healthier, happier, and more productive" (Stulberg and Magness). This last adjective is often overlooked by gurus who swear by mindfulness practices claiming to prioritize well-being. As Stulberg and Magness note, the creative power of the "brain at rest" has been studied²⁷ by researchers looking to harness the

²⁷ See Marcus Raichle et. al's 2001 neurological study at Washington University, where fMRI scans revealed that parts of the brain are activated when people daydream. Raichle called it the "default-mode network."

potential of “the default-mode network” that is active when we believe our brains are “off.” Though Stulberg and Magness say meditation “may help boost innovation” in addition to encouraging relaxation, it is clear that the mindfulness movement aims to facilitate and capitalize on employees’ activated brain power. Burnout is considered to be “one of Google’s gravest threats . . . , holding back passionate employees” (Stulberg and Magness). What they mean is exhaustion is viewed as something of a disadvantage or illness that must be fixed, since “[w]ithout rest, Google wouldn’t end up with innovation” (Stulberg and Magness). Exercises in mindfulness, unplugging and detoxing may stress the importance of well-being, but in the end, they do little more than expand the boundary between humans and technologies and re-assert essentialist ideas that to be “human” is to have the normative ability to perform, serve and produce for capitalist society.

The creators of the Digital Detox website emphasize that their aim is to preserve humanity by “disconnecting to reconnect with ourselves, each other, our communities, and the world around us . . . , becoming more present, authentic, compassionate and understanding” (Digital Detox). However, these things are arguably possible without perpetuating the digital divide these programs encourage. More and more people are being told to resist technological intrusions and “aspire to consume less information” (Jurgenson), as if media ingestion is akin to sugar intake. The “real” world that critics speak of is not suddenly brighter, cleaner, and with more potential for true connection than ever before without technological mediation. Perpetuating the mentality that digital engagement interferes with presence encourages “a medicalized view of digital connectivity and seeks to diagnose the threats it poses to our very humanity. . . . [O]nce we recast our insecurities as the phone’s fault, all we need to do to fix them is be more ‘mindful’ of our digital intake” (Jurgenson). To be mindful in this way involves

remaining loyal to an imaginary authentic self that only exists “IRL,” but the self is not really hindered by digital identity, and believing so only widens the gap between humans and technology.

The medicalized view of screen time, digital interactions and second selves implies devices have broken some integral part of the human spirit that needs to be “cured.” (Turkle 2015a: 24). A more useful critique of time spent digitally would be evaluating how telecommunication technologies have opened up new ways to communicate and relate to one another *and* to environments, instead of dismissing technology altogether. Without seeing digital connection as part of an entire world that includes both physical and digital realms, digitality unfortunately becomes antihuman. For Jurgenson, “digital dualism allows Turkle to write as though she is championing humanity, conversation, and empathy when ultimately she is merely privileging geography“ (Jurgenson). As I will reiterate, device-free physical spaces are not the only sites for connection, and believing so devalues many other instances where closeness occurs with the help of digital mediation.

In “Digital Youths with Disabilities,” Meryl Alper argues that the mainstream media’s use of the term “screen time” represents a longing to return to a nostalgic notion of the North American nuclear family. Yet the Caucasian, middle class, English-speaking, heteronormative and able-bodied ideal has never truly represented the majority of households. When it comes to the popularized notion of limiting screen time for children, Alper takes issue with the production of “a particular bodily standard that is projected as the ideal child” because it “frames disability as a diminished state of childhood” (19). She points to several criticisms of screen time as a concept, primarily that it is a socially deterministic idea that overgeneralizes the nuances of screen-based content. The AAP (American Academy of Pediatrics) frames youths with

disabilities as helpless and vulnerable to the temptations of screen activities of leisure. This is an important point, as the National Institute of Health sees screens as positive for education, but categorizes social media as unhealthy (Kaneshiro 2011). Alper argues that this “essentializes mass culture” because “it overlooks the ways in which media use, outside purely “educational” content, can be particularly meaningful for different groups of youth with disabilities who may be socially excluded in other areas of their lives” (25). This is why imposing programs such as the Screen-Free Week²⁸ is particularly universalizing with reference to idealized childhood. Such initiatives imagine that children not engaged with screens are more likely to engage in physical activities with their peers, but this disregards accessibility and socio-economic factors that may not make this so easy.

The medical discourse surrounding children’s use of screens does not always allow for the varied relationships they have with media. Even digital detox apps such as Apple’s Screen Time and Google’s Digital Wellbeing sensationalize the idea that attention span, emotional wellness and happiness are damaged by too much screen time, but as Alper points out, this is no different than how television was perceived as a drug in the 1980’s. We know from Foucault (1973) that health treatments have been linked to social control and biopolitics, and entrusting that reductions in screen time will automatically lead to improved psychological and physical health is based on “the social scientific standardization of children’s bodies first developed in the late nineteenth and early twentieth centuries” (Alper 38). Thus, it is more worthwhile to explore the ways children as well as adults express themselves and participate in social spaces through mobile devices that encourage hybridity.

²⁸ Led by the Campaign for a Commercial Free Childhood since 2011.

Engaging with Community through Mobile Hybrid Spaces

Jason Farman believes the notion that mobile media completely detaches users from the physical realm perpetuates the “myth of the disconnected life” (2012a). In his article of the same name, Farman discusses how movements like William Powers’²⁹ “Digital Sabbath” represent a familiar argument throughout the history of media, as criticisms that devices distract us from the “real world” are not new to the 21st century. He begins by reminding readers of Plato’s diatribe against writing as an inhibitor of memory that disconnected people from an oral culture of face-to-face interactions. Farman claims few media technologies have escaped similar criticisms, citing Erkki Huhtamo’s example of 19th century England where people were “so immersed in their kaleidoscopes that they were completely disconnected from the world around them” (2012a). The idea that these devices were seen as vacuums enclosing people in false realities disregards the fact that a kaleidoscope is an optical instrument that reveals new aspects of real objects. As Huhtamo explains, the reflecting surfaces that tilt towards one another reveal symmetrical patterns and materials in motion when the tubular cell is rotated. What one sees while looking through a kaleidoscope is an alternative view of reality exposed through an assembly of mirrors, angles and ordinary objects working to produce various forms using light. Yet the kaleidoscope was blamed for capturing people’s attention from the world outside the instrument, separating them from the space where “real” things were happening. Huhtamo describes the kaleidoscope as so distracting an instrument, people were “mesmerized by the visions they see inside the ‘picture tube’ that they do not even notice that other men are courting their companions behind their backs” (Huhtamo qtd. in Farman).

²⁹ Author of *Hamlet’s Blackberry: Building a Good Life in the Digital Age* (2011).

Farman points to a similar critique of the bicycle as “disconnecting people from their local community and distracting them with the dangers of the outside world” (2012a). In this case, transportation technology was condemned for disrupting localized perspectives and inviting external influences, like Gergen’s statement about mobile phones facilitating too much external influence on identity. Prior to the mobile phone and as early as 1926,³⁰ the landline telephone was slated for breaking up the home as well as the practice of interacting with friends through in-person visits. Today, the mobile phone is “the perfect symbol of the always-on lifestyle that leads to disconnection and distraction. It epitomizes the information overload that accompanies being tethered to digital media” (Farman 2012a). In response to Turkle’s grievance against mobile phones pulling us elsewhere, Farman disagrees that being connected to our devices means we must be disconnected from someone or someplace else. He states: “Using ‘disconnection’ as a reason to disconnect thoroughly simplifies the complex ways we use our devices while simultaneously fetishizing certain ways of gaining depth” (2012a). Farman admits exercises such as the “Digital Sabbath” can help some people break from certain activities consuming attention they would rather re-distribute. Yet this fixation on attention consumption makes people “miss some very significant ways in which our mobile devices are actually fostering a deeper sense of connection to people and places” (2012a).

Like Farman, I see technology not as a distraction but as a medium for engaging with hybrid spaces that provide access to representations of real, albeit different realities. Though Harris is derisive of smartphone applications because they are aimed to distract through addictive design choices, he does not give enough credence to the fact that social platforms such as

³⁰ See the Knights of Columbus Adult Education Committee’s investigation of telephones in 1926.

Facebook are commercial products that sell users' personal data to advertisers. His criticism of social media and data mining platforms is undoubtedly linked to his own history with them, and this bias lends itself to his reproach of all mobile devices as mechanisms that steal attention. Yet what Harris fails to acknowledge is the role commercial capitalism plays in the enterprise of social media, which leads him to condemn mobile devices as universally harmful. This overlooks the potential for the medium to help propel experiences such as grassroots projects that bridge the physical and digital through explorations and connections to place.

One art-based example Farman points to is *[murmur]*, a “documentary oral history project” where the personal histories and connections people have with specific neighborhoods are translated into accessible stories. Originating in Toronto, Canada but now accessible in twelve cities, *[murmur]* signs are placed in various locations with corresponding phone numbers. Pedestrians use their mobile phones “to listen to that story while standing in that exact spot, and engaging in the physical experience of being right where the story takes place” (About *[murmur]*). The project aims to help people “develop a new intimacy with places . . . , told by the voices that are often overlooked” (About *[murmur]*). The project is uniquely layered, merging physical locations with memories of actual stories told by a multitude of diverse voices spread through mobile media. This simultaneously encourages an oratory method for sharing histories as well as an archival process of bringing stories out onto the streets for others to hear. *[murmur]* also allows callers to record their own experiences of the spaces they engage with, adding layers of contribution that interlink with past, present and future networks. For Farman, mobile media storytelling reveals a “sensory-inscribed body” representing an engagement with the world that is simultaneously phenomenological and cultural. He carefully points out that “many discussions of emerging media tend to focus on the device rather than the embodied and spatial actions to

which our devices contribute” (2012b: 2). Thus, it is crucial to recognize how mobile phones can be used to “create and disseminate community histories of place” (2012b: 117) through a hybridization of bodies narratively inscribed to spaces that are always changing. [*murmur*] uses mobile media to transform memories into narratives that invite people to pay attention to well-trodden spaces and their communal nature. Importantly, it also subverts the idea that mobile phones distance users from spaces of potential collaboration, despite arguments to the contrary.

Farman references Mizuko Ito as one of several theorists who argue, “the personal listening device can serve to help isolate people from social situations, to ‘cocoon’ them from the need to interact with others” (2012b: 4). Indeed, the mobile phone affords the creation of subjectivity curated spaces of interaction that can be seen as isolating. Yet these cocoons also open what Farman calls “an intimate relationship between the production of space and the bodies inhabiting those spaces” (2012b: 4). While those engaged with their phones are partly disengaged with physical spaces, they are nevertheless involved in an “ongoing relationship between social bodies, technology, and site-specificity” (2012b: 5). A project like [*murmur*] shows the potentiality of layered interactions with physical and digital artifacts alike, owing to the fact that mobile devices encourage the exploration and creation of new spaces. However, it is important to note that “space” is neither site-specific, nor is it strictly physical, and Farman “find[s] it impossible to conceive of mobile media in relationship to a singular notion of space or a singular notion of embodiment in isolation” (2012b: 4). Thus, [*murmur*] demonstrates that full presence (Gergen) or singular attentiveness to physical surroundings may not be an adequate measure of meaningful engagements with spaces or communities.

In the next chapter, I continue my discussion of how focusing on physicality assumes a universal normativity of users that encourages a dismissal of disabled bodies. Everyone engages

with technologies to access and participate in spaces in their own subjective ways, but disseminating the relationships disabled people have with technologies as reliant rather than engaging incites an Othering through a medicalized perspective of human/technology mergers. There is tremendous potential for a broader understanding of humans involved with and operating alongside technology, rather than how humans are restored or what they can personally achieve while utilizing technology. There must be an openness through which realities are considered to be made up of relationships of difference enacting agency in varied ways. As I will illustrate, inclusive posthumanism can reveal that the fragility of humanity many believe is at risk is no more than a culmination of essentialist philosophies of what “humans” are. Like the posthuman, the human is a transient being in a constant state of development and is never complete because of its ongoing relations with the world. The more humans take steps to try to distance themselves from technology, the more they will view it as nothing more than a tool to master that can turn on them at any moment, but this is a problem with capitalism rather than being isolated to any technological device. Thus, only once people see themselves becoming with technology can they participate in events with other phenomena and find a space of beingness as part of the world, rather than in control of it.

Chapter 4:

Assembling with Technology: Considering the Incomplete Body

'Humans' do not simply assemble different apparatuses for satisfying particular knowledge projects but are themselves specific local parts of the world's ongoing reconfiguring.

Karen Barad, "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter," 829

Affirmative Posthumanism and Ethics

Thus far, my effort to contribute to the field of posthuman studies has consisted of separating the idea of the "human" from a liberal humanist conception of Human. This has involved stripping away essentialisms that have dictated how human beings should exist alongside and in correlation to technology. As the previous chapters have illustrated, posthumanism is often regarded as the next evolutionary step in which humans harness technology to extend themselves. This means that the human/technology relationship has been primarily rooted in a humanist desire for perfection, but it is my intention to create a new basis for understanding human/technological existence and becoming. In this chapter, I will show that inclusive posthumanism can help negotiate new ethical relationships that do not categorically objectify technology with relation to human enhancement.

To recall Braidotti's position on the ethics of becoming from Chapter 1, conceptualizing the affirmative posthuman requires the rejection of the Western humanist subject, as well as imagining technology's purpose outside of enhancing human productivity and elevating the human experience. Inclusive posthumanism builds off of Braidotti's idea and offers a framework for human/technology mergers that depart from tropes that categorize technology as infiltrative

and dangerous to the essence of “natural” humanity, as I reviewed in both Chapters 2 and 3. The dualistic thinking that confines the human as unified and organic while positioning machines as unnatural creates a preconception where technology is consistently seen as intrusive. In debates that challenge whether technology is natural or unnatural, technophiles and Luddites alike keep the human/technology relationship antagonistic, as both fight to salvage essentialist elements of humanity they believe are being compromised. This is partly due to the fallacy that the body functions as a boundary for the human’s unified state, keeping the internal/external juxtaposition intact as every attempt at interaction manifests as a breach. This is precisely where inclusive posthumanism can do away with divisive internal/external classifications and re-conceptualize the body as an open system that is porous and capable of entering into symbiotic, interdependent relationships. This kind of posthuman merging with technology offers a technique for rejecting liberal humanist conceptions of the anthropocentric Human in favor of an inter-relational human.

I will now return to two ideas I referenced in Chapter 1 - Barad’s theory of agential realism and Latour’s actor-network theory (ANT) - to demonstrate how the inter-relational human can occupy a space within a network much like anything else that is material, as one of many actants in a larger system made up of non-human animals, environments, actants and technologies. In agential realism, the universe is comprised of phenomena, which are not “independent objects with inherent boundaries and properties,” but represent “the ontological inseparability of intra-acting “components” (Barad 2003: 815). In intra-action³¹, components gather and produce these phenomena as actants encountering each other, which demonstrates the system of interdependence and entanglement. Barad discusses the apparatus as the entire system

³¹ Intra-action is a conceptual shift from the usual idea of interaction (which assumes the independence of entities), contrasting the Cartesian cut of subject/object duality (Barad 2003).

through which scientific inquiry is conducted; the scientist is part of this apparatus because he/she participates in the mechanism of discovery through a relationship of entanglement alongside sophisticated instrumentation and laboratories (2003: 815). Likewise, Latour's ANT can be used to frame an understanding of mediation between humans and non-human actants in a way that differs from instrumentalization. ANT theorizes technological advancement and knowledge-creation in contrast to human-centric discovery, proposing instead that no human acts alone, but in relation to other actants. The human acts alongside various human and non-human actants within an actor-network, which suggests a new perspective on the role of the "human" in the dynamic world, rather than the role of non-human actants in the human world.

Technology as Metaphysical Opponent

Inclusive posthumanism involves recognizing that there is no essentialist destiny dictating that humans exist to progress, but rather that they can engage in events made up of encounters of chance within which they are an integral part. Humans as inter-relational beings have the capacity to initiate these events because of an ability to be open and receptive to other phenomena, but it is necessary to first establish that the human does not act from the center of every apparatus, and need not try to master technology at the risk of being overtaken by it, as critics I engaged with in Chapter 3 suggest. In *The Metaphysics of Virtual Reality*, Heim discusses the clash between humans and technology by speculating on the root of technoanxiety, referring to Hubert Dreyfus (1972, 1979, 1992) to illustrate how the computer may have come to be seen as an opponent culturally. Dreyfus was alarmed by the ease with which humans were being compared to information-processing systems, and concluded that computers were dangerous because they gave us false pretenses of who we were as humans compared to machines. Dreyfus wanted to delineate what computers could and could not do to establish a

clear position for the computer as a metaphysical opponent of Man, arguing that the idea of machines replicating human thought was delusional (Dreyfus 1986).

Heim exemplifies “the chess paradigm” (59) where a human duels against a computer, arguing that it “distracts us from the present issue, because it makes us construe our relationship to computers as confrontational rather than collaborative” (59). Heim believes the confrontation stems not only from the binary separation between human/machine, but also from the fact that “the two terms mind/brain and computer/program refer to being, to definite entities within the world” (59). That these two opposing beings are separate and also unified implies they are independent and complete without one another, which makes it difficult to see humans and machines as symbiotic or inter-relational. Heim ultimately disagrees with the computer as opponent idea, instead claiming, “the computer has become an ingredient in human knowing. Instead of confronting a potential rival, we find ourselves interfacing with computers” (59). The issue with this is Heim’s use of the term “human knowing” implies a process of human discovery, which places the human back into the leading role. “Knowing” is not an exclusively human-centric idea, yet this belief frames the human as the one who uncovers, obtains, and utilizes every invention in service of a normative humanist subjectivity.

In Chapter 1 I discussed Heidegger’s search for the essence of technology, and his conception of Being is useful for exploring one interpretation of why humans consider themselves to be the orderers of technological encounters. For Heidegger, humans use technology for *aletheia*, “truth,” in nature, and gives an example of the windmill that is turned by the wind, revealing the mysteries of nature. He claims humans interpret this revealing of nature as something to obtain and harness for human knowing. In this sense, the human drives the technology forward and sets up the unconcealment, which creates the mistaken impression that

humans are the initiators and possessors of truth. When he claims, “everything exists and appears as though it were of man’s making” (1977: xxxiv), this is only true with relation to the humanist Human that becomes possessed by the potential of furthering its existence.

Heidegger’s “enframing” or *gestell* becomes the process by which this Human asserts entitlement, as *gestell* “sets upon man, i.e., challenges him forth, to reveal the real, in the mode of ordering, as standing-reserve” (1977: 20). For this Human, “the energy concealed in nature is unlocked, what is unlocked is transformed, what is transformed is stored up, what is stored up is, in turn, distributed” (1977: 21). This relationship with technology is not symbiotic but parasitic, as *gestell* implies that everything humans encounter is to be instrumentalized, which prevents the possibility of participating in mergers that are interdependent. *Gestell* also suggests the Human is possessed by technology that is impossible to master, yet I do not believe humans are inherently primed to regard technology in this way. Heidegger’s Human believes himself to be the orderer of the revealing when swayed by *geschick* or “destining,” which “drives out every other possibility of revealing” (1977: 27). Yet this framing of the Human who “exalts himself to the posture of the lord of the earth” (1977: 27) is restrictive and incorrect in terms of the inter-relatedness of Being.

In “A Heideggerian Reflection on the Prospects of Technology” Charles Sabatino defends Heidegger’s assertion that humans are perilously influenced by modern technology, and views his exegesis as a warning against forgetting that human/technology encounters are founded on inter-relatedness. Since humans have conceived of modern technology mostly as a means, “technology represents the manner in which humans have extended their reach to change, shape and thereby control just about everything we encounter within the world with practically no limit” (Sabatino 66). Yet the belief that human beings shape the world alone discounts the

interplay of relatedness that exists with every event. Sabatino uses the example of stem cell research and its role in creating forms of life to illustrate how “the achievements of technology result not simply from our own doing; but involve as well the contributing factors of so much more than ourselves” (68). Humans tend to forget these achievements are made possible through symbiotic relationships with non-human actants. What is translated and made intelligible for human use has always been there, so the human’s role within events must be understood in terms of mediation and participation.

Technical Mediation, Enframing and ANT

As I have suggested, Heidegger’s reconciliation of human relationships with the surrounding world focuses on the immediate world in which the human exists, which is problematic. He also speaks to a universal “human” that has been over-represented in Eurocentric accounts and does not consider non-Western cultural and ethnic markers, histories or differences, which I will address in the next section. When it comes to technological mediation, Heidegger’s notion that technology mediates action also turns humans into instruments. For Latour, the very idea that non-human actants can master humans, or that humans can have mastery over actants including technologies, is impossible because actants themselves do not determine human behaviour. This very subtle distinction is how I approach the idea of mediation when re-thinking what occurs between humans and technological actants when they are joined.

Rather than viewing the human as transformed by technology as the posthuman has sometimes been theorized, mediation posits that “responsibility for action must be shared amongst the various actants” (Latour 1999: 180). In theorizing how humans interact with technology to take part in the revealing rather than the ruling, it is useful to think of collective existence in terms of how Latour understands humans and non-humans as “full-fledged actors.”

Rather than seeing non-humans as objects to be utilized, the natural world does not simply exist as part of human society, nor does the natural world view humanity in this sense (1999: 174). Every actor or actant exists in a *pragmatogony*, or a “genesis of things” (1999: 176). I should note that ANT has been criticized because of Latour’s insistence that all actants within a network are assigned equal amounts of agency, which does not account for power imbalances. I am not suggesting that all elements of a network have the same influence on the outcome, but rather that ANT proposes examinations of networks where the human is displaced from its central position. It is important to note that this displacement does not devalue humans, but encourages an acceptance that we are not in control of “events,” and the truths we help to reveal need not be for the progression of the Human subject’s perfection.

A posthumanism of inter-relatedness dictates that anything we do in the world with technology or tools of any kind is possible only because we are one instrument in a larger laboratory of techniques. This differs from the scenario of the scientist who turns objects into instruments of use, as this falls under technological extension. This is what Heim means in his discussion of the “computer as component,” where the human interfacing with machines as a type of collaborative exercise brings technology closer. Heim does attempt to disprove the dualist argument that technology distances us from our activities and interrupts our present state, but his argument nevertheless reinforces the objectification of technology as a tool for human use: “Instead of removing people from their work, our technology connects us to our work, putting us directly into our activities. Devices attach to every aspect of life, creating a technological culture. Our marriage to technology embraces production, transportation, and communication” (Heim 74). This technological culture is also precisely how Heidegger regards the technological age where the world is framed as a “standing reserve” or *bestand* (1977: 17).

Though it is very tempting to slip into enhancement rhetoric when exploring how humans connect with technologies, mergers and inter-relations cannot occur if the human is believed to be a closed, complete entity. Braidotti's assertion that we must be open to our multiplicity and accept that the human is many things is a primary step of rejecting "a hard core, unitary vision of the subject" (2013: 102) that visions of body-machines often incite. To be clear, my approach to multiplicity does not refer to multiplying or extending the self, but to embracing collectivism. Rather than viewing bodies as encasements that preserve our "selves" and cut us off from others, posthumanism encourages a self that is open, porous, and ready to interact with actants that help us belong to the interplay that is the world. Braidotti's nomadic posthumanism is a valuable model for theorizing how humans participate in this interplay, as it is "very much a philosophy of the outside, of open spaces and embodied enactments . . . ; nomadic posthuman thought yearns for a qualitative leap out of the familiar" (2013: 194). Breaking free of these "familiar" constructs involves overturning deeply embedded expectations of how humans interact with the world around them. This means rejecting the idea that humans should orchestrate encounters with actants to fulfill outcomes that fit within a humanist normative mold.

In the previous chapters, I provided examples of how this humanist normative ideal body has been universalized with regard to speculative fictions and pervasive telecommunication technologies. What I hoped to illustrate is that these social models have been largely conceived and evaluated based on how they perform for mainstream able-bodied users to foster efficiency, productivity and normalcy. In contrast, opening to other imaginative formations between humans and actants requires a subjectivity based on a collective understanding of being rather than a singular one, which means experimenting with the boundaries of the "perfect" human. For Braidotti, this non-naturalistic or post-naturalistic structure encourages an ethical approach to the

idea of inter-relationality, as she explains:

Posthuman ethics urges us to endure the principle of not-One at the in-depth structures of our subjectivity by acknowledging the ties that bind us to the multiple 'others' in a vital web of complex interrelations. This ethical principle breaks up the fantasy of unity, totality and one-ness but also the master narratives of primordial loss, incommensurable lack and irreparable separation.

(2013: 100)

Here, Braidotti encourages a detachment from master narratives adopted by Western humanists that assume humans are complete. Though not everyone subscribes to these narratives, the loss and separation she speaks of dominate the model of individual unity. Heim points to this as well when he claims, "because we are finite, every gain we make also implies a lost possibility. The loss is especially devastating to those living in the technological world, for here they enjoy everything conveniently at their disposal—everything, that is, except the playful process of discovery itself" (Heim 68). What this suggests is that humanity's inability to experience the infinite precogitates relationships between humans and technologies in service of perfectibility. Exploring a non-unitary state of being based on relationality requires a more humbling experience of collectivity, and, as Braidotti encourages, an "awareness that one is the effect of irrepressible flows of encounters, interactions, affectivity and desire, which one is not in charge of" (2013: 100). While Braidotti is neither the first nor the only theorist to argue for non-dualism, it is necessary to completely re-calibrate posthumanism because much of the discourse has been theorized through the Western subject. As Ferrando explains, "[p]osthumanism is aware of the fact that the notion of the human has been historically constructed by the same embodied

subjectivities who have self-imposed themselves as the hegemonic voices in normalizing what the notion of the human should imply” (2016: 253). In fact, many non-dualistic ideas even within Hinduism and Buddhism “view the human as the highest reincarnation before achieving enlightenment, in a hierarchical system which does not comply with the post-centralized non-hierarchical perspectivist approach of the posthuman” (Ferrando 2016: 253). Posthumanism is an opportunity to introduce diversity and pluralism to the human that is ready to embrace multiplicity and difference rather than completion. This begins with re-constituting the individual and its place amongst other actants within ongoing practices of the world.

Inter-relationships Over Individualism and “Things”

In Chapter 1, I discussed individualism as the foundation of the unitary subject Braidotti rejects, which has also fueled the narrative of the Western humanist subject. While Braidotti argues we must do away with the individual and embrace a collective understanding of being, I do not believe the individual should be entirely dismissed. When Braidotti says “anti-individualistic nomadic politics is a critique of the centre from the centre” (2006a) this suggests the individual must be re-constituted, not done away with. Human identity-making is tied to an individualistic idea of agency, and humanist individualism motivates many people towards progressive self-actualization through technological manipulation and extension. This makes it challenging to imagine technology being used in any other way, which is why inclusive posthumanism invokes a conscious decision to critique not only individualism, but to re-examine who the universalizing assumptions of the normative “human” are serving.

The individual is significant in the sense that it is a force among many forces, and its participation helps to assemble actants that result in events, but this need not involve the objectification of technologies as tools. Even the word “tool” suggests a man-made instrument

for human enterprises, a result of the division between subjects and objects. Barad's intra-action rejects objectivity, as it recognizes the impossibility of a person using an apparatus while not being part of the process that reveals the results. This means that though the human may jump-start the activities of the apparatus by merging all of the actants, the human is an actant as well. However, humans also treat objects as "things" because they appear external, and for Barad, "thingification—the turning of relations into 'things,' 'entities,' 'relata'—infects much of the way we understand the world and our relationship to it" (2003: 812). To be clear, I am not necessarily vying for object-oriented ontology³², but agree with Barad's argument that apparatuses are not "mere instruments or devices that can be deployed as neutral probes of the natural world" (2007: 140), nor are they just a collaboration of passive laboratory instruments with the human at the center. Rather, humans take part in each apparatus constructed "through particular practices that are perpetually open to rearrangements, rearticulations, and other reworkings" (2003: 817).

Inclusive posthumanism takes cues from Hayles' conception of the posthuman subject as "an amalgam, a collection of heterogeneous components, a material-informational entity whose boundaries undergo continuous construction and reconstruction" (1999: 3). The posthuman decentralizes the human as the focal point of the production and the knowledge-seeking, exposing it as a thing-in-phenomena that takes part in the revealing, but does not possess the knowing. As Barad explains, "knowing cannot be fully claimed as human practices, not simply because we use non-human actants in our practices but because knowing is a matter of part of the world making itself intelligible to another part" (2003: 829). What this means is that the world

³² In metaphysics, object-oriented ontology is a 21st-century Heidegger-influenced school of thought that rejects the privileging of human existence over the existence of non-human objects (Harman 2002: 2).

reveals itself to us, and our role simply involves making it intelligible, but only to ourselves. Therefore, the idea of “knowing” can be understood as the human’s participation in the network of the world, but the human does not act independently. Furthermore, these practices “are not anthropomorphic place-holders for the projected agency of individual subjects, culture, or language. Indeed, they are not human-based practices” (2007: 149). This suggests agency is not an inherently human activity or an entitlement, nor is it a power one has over other “things.”

Overall, rejecting individualistic agency does not disregard agency entirely, but disentangles it from human possession and control. This is why a posthuman accountability must include an ethical agency that is not passive, as the posthuman becoming-with phenomena is not intended to reduce the role of the human, but to re-locate it. Human subjects do not pre-exist and are created, and they are not the end products of a process of becoming through intra-activity, either. Intra-actions operate freely so that future entanglements of the human remain radically open, though not necessarily in an upward or forward motion that is progressive. When the body is regarded as a vessel for being, there is the implication that it can and should be perfected, expanded or improved upon. This is why it is crucial to establish that the body is part of a lived experience of the world and does not bind the self as a closed entity. Barad’s posthuman intra-action helps to theorize a process of undoing modern subjectivity to develop as nomadic posthuman subjects that become with technology.

As I have illustrated, the nomadic embodied subject is characterized by its fluidity, changeability, and disregard for a division of internal selfhood that is kept intact by the body as if it were a boundary. There is no real need for humans to move beyond or out of the body to interact, and there is no boundary to force through because “thought does not just happen within the body, it happens as the body” (Dolmage 122). The idea of the body and mind as constituting

and belonging to one another is crucial to how the posthuman subject emerges, and I turn to Deleuze and Guattari's concept of "becoming-" (1987) to illustrate how subjectivity involves belonging to an assemblage.³³ Imagining the subject as part of a collective grouping of actants that come together interdependently can pave the way for the multiplicity Braidotti advocates for, without the rhetoric of extension. Deleuze and Guattari describe this as follows:

'Becoming-' is a process of change, flight, or movement within an assemblage. Rather than conceive of the pieces of an assemblage as an organic whole, within which the specific elements are held in place by the organization of a unity, the process of 'becoming-' serves to account for relationships between the "discrete" elements of the assemblage. (Deleuze and Guattari 272)

The parts in between human/technology encounters is where "becoming" takes place to represent a multiplicative way of being that is a function of influences. As Deleuze and Guattari insist, "in 'becoming-' one piece of the assemblage is drawn into the territory of another piece, changing its value as an element and bringing about a new unity" (272). This does not suggest that the human transforms when encountering technology to become unified or complete; rather, "becoming-machine" can alter an element's original function and bring about new creations. It is with this understanding of "becoming-" that human/technology entanglements are formed, where rather than the human becoming "whole" by the machine, they enter into a mutually beneficial relationship.

³³ From Felix Deleuze, an assemblage is any number of "things" or pieces of "things" gathered into a single context. An assemblage can bring about any number of effects—aesthetic, machinic, productive, destructive, consumptive, informatic, etc. (Rhizomes: Glossary)

Completion through Assistive Technology

I would like to further interrogate the idea of completion and its association with normalcy to discuss how technology and design can help to encourage more creative entanglements that undermine ableist conventions. My purpose for drawing on critical disability studies is to frame my own argument about entanglements forging unexpected and non-directional relationships between humans and technology. The economics of technological development can be restricted in both design and intention, yet critical disability studies challenges normative ideals of production, betterment and progress. Theorists working within this field are re-imagining intersections of humans and technologies in comprehensive ways, which characterizes the potential that an inclusive posthuman approach can bring.

In the previous chapter I referenced Davis' claim that technologies can often try to enforce normalcy on users, which does not "acknowledge normalcy as a fictional and unstable category, which is inherently unattainable" (Foley and Ferri 193). There is an expectation that every person engaging with a device should strive to adapt themselves into experiences modeled on those of able-bodied users, which are considered as the idealized default. When technologies are primarily designed with these users in mind and then adjusted for disabled users, this creates a two-tier system of exclusion (Sheldon 2004). Instead of being designed with a variety of different users, technologies retrofitted for disabled users automatically become assistive and "conceptualized as a form of 'care'" (Campbell 2009 qtd. in Foley and Ferri 193). This incites a pre-coded relationship between the user and the device that is curbed by medical experts rather than the individuals themselves.

The assumption that technologies are always used to help people assimilate into normative ways of being relegates "difference" as something that ought to be corrected instead

of explored. It is this notion that I seek to challenge with inclusive posthumanism, because accessibility too often focuses on how people regain independence with the help of technological aids. Able-bodied users are believed to be independent by default and categorized as complete, which means they interact with devices as extensions rather than as supplements. Conversely, disabled people are encouraged to overcome bodily differences through devices intended to act as supports, which creates a false framing of unequivocal need and dependency on devices. This division makes it challenging to conceptualize disabled people engaging with devices in exploratory and creative ways that have nothing to do with restoration. As Davis argues, one way to challenge these norms is through “dismodernism,” a disability-informed view that “ushers in the concept that difference is what all of us have in common. That identity is not fixed but malleable. That technology is not separate but part of the body. That dependence, not individual independence, is the rule” (2002: 26). Building off the idea that difference represents commonality rather than segregation, inclusive posthumanism imagines how people might disrupt the boundaries of what is considered “normal” when engaging with technologies, to step outside of the “compulsory able-bodiedness” (McRuer 2) that assistive technology can often promote.

People’s relationships with technologies must be understood in contexts that are adaptable, rather than the two-tiered system I referenced earlier where accessibility follows a reactive model instead of being an essential consideration from the design stage (Sheldon 2004: 157). Even when technologies are designed specifically with disabled people in mind, they are often segregated from generic technologies and marked as specialized. For example, Foley and Ferri point to dedicated AAC devices that cost over \$6,000³⁴ and are designed to “withstand the

³⁴ USD currency, circa 2012.

rough use of a disabled person” (Foley and Ferri 198) as opposed to iPads priced at \$600-\$800 that are more universal and do not look like they have been “designed with very particular ideas about who disabled users are and what they need or want in a device” (Foley and Ferri 198). Inclusive designs are important, not because every person operates devices in the same way and needs the same things, but because disabled people are so often excluded from mainstream sites of access.

As Alison Sheldon notes in “Changing Technology,” technology is “hailed as a saviour for disabled people, as a way of minimising their ‘deficits’ and thus making them less dependent on other people. This despite the fact that dependency on others is a part of life for everyone” (2004: 156). I point to this to illustrate how framing individualism within a humanist notion of independence makes exclusionary assumptions about technology users, a primary one being that everyone experiences the same ease and comfort when using devices in the first place. Sheldon tracks the “increasing polarisation between the technological ‘haves’ and ‘have-nots’” to explore disabled people’s complicated interactions with the market of assistive technologies that can be quite disempowering despite their intentions. She claims, “many of us have been impaired as a direct result of modern technology. Others would not be alive today without it. All of us are now dependent upon it” (2004: 156). In a series of interviews conducted with disabled people (2001), Sheldon notes that although access to assistive technology is often considered very necessary by medical experts, the power to decide how to engage with the world is considered a higher priority for the people using it. Assistive technology is often used to replace physical human care due to its cost-efficiency, but “most consider the removal of more traditional disabling barriers to have greater urgency” (2004: 156). These barriers are not just about getting the newest technologies into the hands of disabled people, nor do they only refer to problems of

infrastructure. Sheldon argues that “uncritical faith in technology” creates isolation and the expectation that all disabled people wish to “become part of the ‘main-stream of life’ and ‘contribute fully in society’” within a lens of able-bodiedness (2004: 156). This suggests it is vital to regard technology not as a device that cures or restores, but as an opportunity for humans to discover a variety of emergent existences outside of socially assigned functions.

The Prosthetic Impulse

The trappings of the modern subject see the function and worth of the human to be based on production, which therefore contributes to assumptions of technology as extensive. I argue that humans merging with actants should not be confused with the absorption of objects, like in the example Andy Clark gives when he interprets the human brain co-evolving with technologies. His “extended mind” (31) concept suggest a human interacting with machines within information-rich environments, yet this is not interdependence, but “intrinsically geared to transformation, technology-based expansion, and a snowballing and self-perpetuating process of computational and representational growth” (Clark 8). A truly dynamic connection between humans and computers requires relationality rather than using the computer’s processing power to extend the mind. To decentralize the human’s position, “becoming-with-machine” marks an articulation with technology that can help formulate “the relational powers of a subject that is no longer cast in a dualistic frame, but bears a privileged bond with multiple others” (Braidotti 2013: 92). This bond is fulfilled in various ways, beginning with how people engage with technology as a point of contact for being in the world with prosthesis.

When considering the potential relationships between humans and technologies, there is a difference between assemblages made up of actants encountering one another and humans extending themselves using technology. Technologies of the body, or prosthetics, are often

regarded as something one puts on, rather than something assembled with the self through entanglement. According to David Wills, the word prosthesis did not adopt the meaning of “a replacement of a missing part of the body with an artificial one” until 1704 (Wills 1995: 215), classifying it as an external or foreign object. Even in early medical discourse, prosthesis referred to an addition, which in today’s technological terms has come to mean an extension, an augmentation or an enhancement. In the introduction to their 2006 book, editors Marquard Smith and Joanne Morra use the term “prosthetic impulse” (4) to describe the teleological fantasy of prosthesis where Man is, as Freud claims, “perfecting his own organs, whether motor or sensory, or is removing the limits of their functioning” (Freud [1930] 1962 qtd. in Smith and Morra 1). Freud’s quote describes the “prosthetic god,” which can be seen in modern-day transhumanist visions of the potentials of artificial intelligence and transplant technology. Yet this idea of prosthesis as a restorative notion is ableist, and I seek to re-appropriate its usage in order to explore a more inclusive and open understanding of human/technology relations not predicated on extension or “metaphorical opportunism” (Mitchel and Snyder). Smith and Morra remind us that “‘the human’ has been understood as technologized, thereby revealing to us the promise of the ‘posthuman’ that is already found in the human and the humanization of technology itself” (3). Their concern is understandable; the prosthetic impulse, with its predisposed view of prosthetic interactions as opportunities for extension, enhancement, and augmentation perpetuates the fantasy that my conception of inclusive posthumanism tries to move away from. When a tool is attached to an already completed system, or a system primed for temporary completion, the prosthetic serves to perfect or replace a lacking function.

This interpretation of prosthesis relies on the notion of human agency as dependent on optimization. In “The Prosthetic Imagination: Enabling and Disabling the Prosthesis Trope”

Sarah Jain critiques the ableism associated with prosthesis when socially assigned as compensation for certain bodies “already dubbed as not fully whole” (32). To illustrate the problem with associating agency with productivity, she cites Mark Seltzer’s “double logic of prosthesis” to present a cultural understanding of machines as “a simultaneous self-extension and self-cancellation of both the body and human agency” (33). Seltzer refers to Henry Ford’s factories and the machines that extended the bodies of his workers to illustrate how prosthetics did not merely replace, but made optimal use of human limbs for the benefit of production. This example denotes a prosthesis fantasy of the body’s mutilation and transcendence as it is “salvaged” by machines. When prosthetics are thought to construct and restore identity by returning agency to people who are believed to have lost it because of disability, “the body undergoes complete erasure as it takes on the nuances of the superbeing, as in Freud’s ideal of the ‘prosthetic god’” (Jain 39). This “superbeing” possesses agency through extension and transcendence, yet agency should not be thought of as something one has, but as something one participates in through inter-relationality. Jain’s insistence that “agency is always influenced by one’s relation to variously construed interfaces” (41) indicates agency emerges by embracing bodily encounters and differences rather than rectifying them.

The assumption that prosthetic technologies are always emancipatory for people with disabilities can be more oppressive than liberating. Jain cites Allucquère Rosanne Stone’s commentary on Stephen Hawking’s prosthesis to illustrate how compulsory able-bodiedness can enforce a generalized disability through design infrastructures that mark disabled bodies as waiting for attachments in order to be fixed and whole. Hawking’s black box supposedly reclaims his agency, since without it, “no voice, no dissidence, no discourse” (Jain 41), suggesting that he needs a normative way to communicate based on ableist standards. However, as Jain

rightly states, “the medically based trope of the prosthesis is insufficient to analyze fully the terms of worthiness, access” (47). This means that when “wholeness” becomes culturally determined, technology as prosthesis denotes technology as an antidote, which feeds into the promise of betterment and the goal of human perfectibility. Despite this, prosthetics are still useful for examining the body’s permeability and non-uniformity with relation to tools, but prosthesis as a concept must be clarified with relation to the body.

We know that Hayles argues for the body as the original prosthesis, but this idea has been skewed with relation to posthumanism. She claims, “the posthuman view thinks of the body as the original prosthesis we all learn to manipulate, so that extending or re-placing the body with other prostheses becomes a continuation of a process that began before we were born” (1999: 3). If humans regard themselves as subjects and bodies as prosthetics, bodies become objects to manipulate as well. This is how many have come to understand technological enhancement as the interchanging and improvement of bodies so often seen in “techno-teratological”³⁵ narratives in science fiction, such as the interchangeable “sleeves” of the transhumanist *Altered Carbon*. The body as original prosthesis need not be interpreted as a literal attachment, as one does not possess the body as if it were simply a vessel with no connection to constitution and being. Rather, the body *is* being, which Wills explains: “[T]here is technology as soon as there are limbs, as soon as there is bending of those limbs, as soon as there is any articulation at all” (2004: 36). Wills’ “technological turn” describes something that has always been there; the human comes into the technological the moment there is an encounter, meaning there is no such thing as the “simple human” that does not engage with technics. For Wills, the technological turn

³⁵ Braidotti explains this as a narrow and negative social representation of the relations between humans and machines in the mode of hyped-up body horror (2002).

begins from birth, meaning the human is always already technologized even before the extending of the limb to pick up the tool.

In order to imagine prosthetics outside of medical consideration, it is also necessary to foreground the human's existence as a technical being. Establishing this nuance helps to frame how humans can engage with actants in dynamic ways. Rather than seeing the human as supplemented by technological prosthesis because of incompleteness, Stiegler's "originary technicity" (4) refers to the fundamental co-emergence and co-dependency of technics and the human that evolves through technological objects or means "other than life" (17). However, this does not mean technology as prosthesis must be conceived as compensation. Stiegler claims, "a prosthesis does not supplement something, does not replace what would have been there before it and would have been lost: it is added . . . ; prosthesis is not a mere extension of the human body; it is the constitution of this body *qua* human" (152-3). Though Stiegler considers prosthesis - with the prefix *pros* - meaning in front of, as "what is outside" (193), what humans encounter is not really external to themselves.

Here, there is no differentiation between an internal/external and subject/object, and Stiegler's reading of Derrida's "différance" helps to unravel the ambiguity around the who/what that are simultaneously bound and kept apart. Différance reveals the demarcation of the internal and external as an illusion, as it "is neither the who nor the what, but their co-possibility, the movement of their mutual coming-to-be" (Stiegler 141). This is not to say that Stiegler is denying the existence of an internal/external; he just does not see them as distinct spaces in a hierarchy, but as doubles. He claims, "the interior and the exterior are the same thing, the inside is the outside, since man (the interior) is essentially defined by the tool (the exterior)" (142). In this sense, the human and the tool become one while participating in an exchange, which can be

a shared experience of exploration. Tools and technologies need not be viewed as compulsory tools for the reclaiming of independence and identity. From the standpoint of inclusive posthumanism, emergent encounters with actants can also inspire alternative ways of performing capacity and agency. In the next section, I discuss both disabled and able-bodied artists whose works facilitate diagonal and non-linear movement. Engaging with these case studies helps to position inclusive posthumanism as a method for resisting progress and making room for opportunities of learning and creation outside of efficiency.

Creative Entanglements of Difference

As I have stated, viewing technological entanglement as enabling is fraught with ableist implications and deploys bodies as tools that yield productivity. There is not enough value given to bodies that entangle with technology to create their own sense of agency outside of what is culturally normative. Artist and designer Sara Hendren attempts to dismantle the erasure of disabled bodies by separating “assistive technology” from its origins in “rehabilitation engineering,” and imagining it as more than a means to correct or replace missing functions (Hendren qtd. in Collins). To undermine the idea that technology must be assistive for disabled people, Hendren claims “all technology is assistive” since “we’re all getting all kinds of help from the things we make” (Hendren qtd. in Collins). She offers examples such as eyeglasses and eating utensils to illustrate how seeing all technologies “on the same continuum” allows us to question them without a kind of “othering” usually present when speaking to people living with disabilities (Hendren qtd. in Collins). Hendren’s work complicates the spectrum of disability and ability by proposing that people should value human difference and stop asking disabled individuals to pass as “normal.” In her talk “Investigating Normal” (2017), Hendren questions technologies centered around victory over the body or correction of human frailty, and while she

does not reject prosthetic devices outright, she is critical of their promise to help people with disabilities get back functionality and with it, a sense of identity.

Hendren leans on Deleuze and Guattari's notion of "becoming-machine" to conceive of "a playful and pleasure-prone relationship to technology that is not based on functionalism" (Hendren 2013: 92). In her art installation *Slope: Intercept* (2013), Hendren re-assigns the commonly used permanent accessibility ramp in public spaces by creating portable temporary ramps that can be conjoined and reconfigured in multiple ways. Her goal is to divert the focus away from ramps built purely to satisfy wheelchair access codes, which are focused solely on upward mobility. Instead, her ramps explore the playful and fun potential of ramps that can be used by anyone, including skateboarders and cyclists, in ways that facilitate diagonal and random movement. The departure from upward and forward momentum alters the expectations of technologies typically assigned to disabled people for access in favor of "an experience of estrangement" (Hendren qtd. in Cachia). Hendren's inspiration for this project is a response to assistive technologies that lack dimensionality and imagination because industrialization is too focused on resolving disability problems to ask creative questions.

Human difference should not be considered a disorder, but the conversation around prosthetics and assistive technologies is one that prioritizes productivity and efficiency, as society does not typically embrace slowness. Since the narrative arc of disability is usually centered on overcoming, Hendren argues "super-crips" (representations of people who have to be extra-human in their abilities in order to overcome a disability) suggest that "technology always solves disability, and the emphasis is on the technology itself" (Hendren qtd. in Collins). This is especially true when technology is hailed as a restorative and miracle-inducing component of a disabled person's quality of life without the proper evaluation of its debilitating

connotations. An example of this is a UK robotics company Open Bionics that builds prosthetic arms to “turn disabilities into superpowers” (Open Bionics). The company’s ethos claims it is “pioneering a new bionic age inspired by science fiction,” and their targeted demographic is “children with limb differences.” While they steer clear of using words like “disability” and “normal,” they claim their goal is to “make science fiction a reality,” which is problematic in itself, through a partnership with Disney to develop models inspired by *Star Wars*, the *Marvel Cinematic Universe*, as well as video games such as *Deus Ex* (Open Bionics).

The “Hero Arm” is their main product, a custom-styled prosthetic purposely designed to look robotic, with the tagline: “Welcome to the future, where disabilities are superpowers” (Open Bionics). This is an example of the “cyborg superhuman” narrative that perpetuates a “super optimistic and high-tech savior trope about people with replacement parts being carried off to the post-human” (Hendren qtd. in Collins). Though Open Bionics clearly strives to empower disabled people, customizing and stylizing body parts invokes the idea that the body is a replaceable counterpart that one can put on and take off at their leisure. By offering overcompensation for limb differences, the notion of prosthesis is not only reiterated as an antidote to disability, but creates an arbitrarily high standard for disabled people that surpasses basic functionality.

The aforementioned example also denotes prosthetic technological encounters as transformations that result in super-beings, which obscures what it means to be posthuman. When subject-making is linked to overcoming disability, this disregards the fact that every tool in a person’s life offers them ways of articulating themselves within their environments. There is a misconception that disability is, as Tom Shakespeare notes, “a universally and unchanging essence” (198), rather than a diverse state of existence that is always fluctuating depending on

the individual, their environments and their tools. The social model of disability relocates blame from the individual and their specific limitations to barriers exacerbated by society's treatment of disabled people. The social model "demonstrates that the problems disabled people face are the result of social oppression and exclusion, not their individual deficits" (199), yet Shakespeare also claims it is no longer progressive in terms of identity politics, because it is "unhelpful in understanding the complex interplay of individual and environmental factors in the lives of disabled people" (202). Thus, not only is the prosthetic impulse inadequate for evaluating such identity differences, but more careful consideration is needed when evaluating the varied experiences of disabled people. To disrupt the narrative of progress is to be deliberately unproductive, and in the next section I demonstrate how sideways approaches (as opposed to upward) broaden the structure of human/technology relations.

Moving Sideways with Crip-Kin Making

There are potential relationships in material culture that bring together actants, prosthetics, tools and physical environments in ways outside of the debate over technological dependence. Technology helps to express many types of living, and examining the ways in which disabled people entangle with actants is one example of an inclusive posthuman approach toward human/technology mergers. While Hendren's work helps to expose the issues surrounding ableist infrastructures and attitudes, there is also much value in "centering crip artists as producers of knowledge and theory, in looking at cultural productions that offer sideways approaches to technology and desire" (Kafer 6). These sideways approaches can disrupt the medical model that pushes for progress and normalcy in order to make room for humans entanglements with prosthetics that express difference.

Jay Dolmage frames disability as embodied difference in his discussion of *mētis* (in ancient Greek, the wisdom, skill or craft), which represents cunning bodily intelligence and the ability to act in a world of chance. I mentioned chance earlier to articulate the human participating in events by entangling with actants, but without a preconceived outcome in mind. Advocating for spaces that celebrate bodies of difference and their capacity for exploration and creativity means rejecting normative ideas about the ways that different bodies are told they matter. Dolmage criticizes ableist views of disability and employs *mētis* to value bodily difference by analyzing Hephaestus, the Greek god with a disability who is empowered by his craftsmanship and not limited by his body. While Dolmage’s argument evokes productivity through invention, Hephaestus is notably not a god who overcomes his disability with the help of his chariot or any other tools. Rather than focusing specifically on the productive nature of his craft, Dolmage points to Hephaestus’ “outward-facing feet and his lateral thinking” as a metaphor for “the ability to move from side-to-side like a crab, as opposed to the forward march of logic” (Dolmage 125).

The idea of horizontal movement over linear progression coincides with the inclusive posthuman subject’s entanglements with varying actants it encounters from all directions. In its constant becoming, the posthuman shares features of *mētis*, which is associated with “the idea of a physical curve, with the idea of a body not composed in perfect ratio” (Dolmage 125). The normative body’s curvature allows for encounters of randomness that resonate with the Greek *tuche*, as that which “brings the indiscernible future within the realm of possibility” (Dolmage 122). *Tuche* describes luck and the winds of chance, which requires a sense of *mētis*, “a way to be even more mobile, polymorphic” (Dolmage 121). Of course, the idea of increased mobility can be interpreted as a desire to extend oneself to reach more, and Dolmage does not ignore the

visual imagery of Hephaestus in a chair or sometimes on a horse, wielding the instruments of his craft. Yet Hephaestus' power is not contained in the tools alone, but "in the hands that hold the tools, and the body that labors around them, or the mind that trains them" (131). Overall, Hephaestus' ability to become part of an assemblage functions as "not just a model for 'alternative' versions of agency but also a model for the agency we might all have access to, once we are willing to consider reversing, moving sideways" (135). Thus, the concept of *mētis* is useful for theorizing newly imagined relations between humans and technologies that challenge narratives of progress.

Many technologies are automatically generalized as assistive for some and convenient for others, often without imaginative explorations outside of pure functionality. In contrast, *mētis* affords such discoveries because it is "specifically not identified with the strongest and the best, with the norm, with the unchanging" (Dolmage 124), but with dynamic couplings not easily identified by codifying a disabled vs. able-bodied person. Everyone has a unique approach to being in touch with the world that can be speculative rather than reactionary. Yet for many disabled individuals, there are technologies that enforce ideas of use through designs that reject differences because they focus so intently on assimilation.

This is the subject of Alison Kafer's "Crip Kin, Manifesting," in which she profiles scholars who, having had their technological encounters dictated from a medicalized perspective, use art to explore possible alternative relationships to technologies. Kafer discusses the idea of "crip kin" to explore imaginative intimacies with technological and non-technological entities through the works of artists who participate in "'informed refusals,' which combine 'a critique of what is' with 'a vision of what can and should be'" (Benjamin 970 qtd. in Kafer 3). This refusal addresses both how technologies are designed from perspectives of able-bodiedness, and how

they are pushed onto disabled people with expectations of how they must be used. While technology has been perceived as a compulsory assistive aid for many disabled people, technological entanglement is an entirely different and private matter that must be further examined with relation to personal history and lived experienced.

To this point, artist Chun-Shan (Sandie) Yi creates “adornments” for disabled bodies that subvert traditional orthotics by displaying bodily differences in ways that are artful instead of corrective. Yi’s self-portrait *Gloves for 2* depicts her wearing a set of handmade multi-coloured gloves that envelop her own hands, which have two fingers each. Yi’s intention with this piece is to “refuse the notion that designing for disability can always and only mean designing for normativity and functionality” (Kafer 17). Yi as well as several of her family members have been born with bodily differences for generations, and rather than hiding her hands as if they were disfigurements of shame, the gloves follow the length of her fingers with bulbs of vibrant soft threading. This example of crip kin-making is twofold, as Yi embraces her ancestral kin’s bodily markers while forging new relations with aesthetic materials not normally used for prosthetics.

To further interrogate corrective technologies, Yi’s art piece *Em-brace* is another example of reconfiguring the functionality of hand braces and cuffs. Designed for fellow disabled artist Sunaura Taylor, this brace resembles a typical plastic orthotic on the outside, but is lined with soft embroidery that induces sensory pleasure on the inside. Taylor’s own experiences with doctors attempting to straighten her hands reflect a fixation on “productivity (through work made achievable by a brace) and normativity (through surgeries made possible by a brace)” (19). This piece re-imagines function as enjoyment by celebrating the curvature of Taylor’s hands and caressing them rather than forcibly straightening them out. The idea of celebration is a testament to Taylor’s valuing of her own body, which informs much of her

activism. As she explains in her book *Beasts of Burden: Animal and Disability Liberation*, her disability was caused by the U.S. military polluting her hometown with toxic chemicals that contaminated the land and water. Thus, Taylor's advocacy condemns disability as debilitation while proclaiming a love for her own disabled body that enjoys feeling pleasure and revelling in stillness as a way of opposing industrialization. Overall, both of Yi's pieces represent imaginative kinships between humans and technologies that, instead of rejecting modification altogether, explore the nature of prosthetics as relational rather than corrective.

Cyborgization and Cultural Erasure

As I have illustrated, certain prosthetics designed to supplement lost functions are oppressive because they prescribe disability and dictate the relationships people are intended to have with their technologies. Another aspect of this oppression is the attempted cultural erasure of entire groups through assimilation. One prominent example is the crusade against deafness through what Joseph Michael Valente calls "phonocentric colonialism" (642). This is the medicalized subjugation of the deaf that began with Alexander Graham Bell's attempts to replace the transmission of Deaf³⁶ culture and education with oral language schools in the late 19th century. In "Cyborgization: Deaf Education for Young Children in the Cochlear Implantation Era" Valente criticizes the forced indoctrination of deaf children into the hearing world by institutions that disseminate audism³⁷ to unwary parents. He argues that unquestioning faith in technology as a cure for deafness determines deaf children's educational path into hearing culture, which is harmful because it delays "their acquisition of sign language,

³⁶ "Deaf" describes deaf people who share in the language and culture of ASL, while "deaf" refers to an audiological condition of not hearing (Padden and Humphries, 1990).

³⁷ Coined by Tom L. Humphries, this describes a prejudice set of beliefs about hearing people living superior lives compared to Deaf people, who are believed to be miserable and in need of saving (Harrington and Jacobi).

considered a deaf child's natural language" (641). Valente's use of the term "natural" when referring to American Sign Language (ASL) suggests a deaf infant's communicative abilities relies on visual cues and touch, the same as any other infant, and that learning to communicate with visual gestures is a logical proceeding. ASL may be a learned language, but it is compatible with a deaf child's abilities, rather than the forced assimilation into the oralist world. This is an important distinction, as my intention is to expose how technology as a cure for deafness embodies the push towards relationships of dependence between deaf individuals and technologies as corrective, assimilative aids.

In "Understanding Deafness: Not Everyone Wants to be Fixed," Allegra Ringo describes a peaceful protest against the Listening and Spoken Language Symposium of 2017, where a group of Deaf people opposed the messages being disseminated by the Alexander Graham Bell Association for the Deaf and Hard of Hearing (AGB). The AGB advocates for early diagnosis and intervention for children, but their oral-focused campaign has been vastly criticized. Ruthie Jordan, a Deaf activist who runs *Audism Free America* claims the AGB miseducates parents and "takes advantage of the fact that hearing parents may not understand how a Deaf child can lead a functional, fulfilling life" (Ringo). The school of oralism aims to educate through oral speech and lip reading, as opposed to manualism, which supports the primary use of ASL. Bell, a supporter of the eugenics movement, worked to assure that education for the deaf would encourage spoken language to "restore the deaf-mute to society³⁸" (Ringo), which is exactly what this school promises to do with the latest assistive technologies.

³⁸ See the *Second International Congress on Education of the Deaf* conference in 1880, where Bell was a prominent speaker.

I have previously discussed the notion of technology as both restorative and enhancing, neither of which privilege explorations of human/technology entanglements outside of perfectibility. As a Deaf individual, Valente recognizes that learning ASL has been critical both to his communicative abilities as an adult and to his belonging within a community not primarily focused on oral language. However, he vehemently condemns cochlear implants as “unnecessary and highly invasive” where “known risks are largely ignored” (640) in favour of the end goal of curing deafness, which follows an authoritative medical discourse of lifelong acclimatisation. The ease of implant surgery advertised to parents is what Valente calls “cyborgization,”³⁹ a miracle cure “under the guise of humanization” that aligns a good quality of life with mainstream oralism. According to historian Douglas C. Baynton, oralist tradition subjugates deaf people’s lives by viewing their utilization of sign language as “a subhuman characteristic” that is inferior to speech. Baynton claims, “The value of speech was, for the oralists, akin to the value of being human. To be human was to speak” (107-108 qtd. in Valente 642). This marginalization of deaf individuals prescribes essentialist notions of what it means to be human and assumes a substandard existence for those with disabilities.

The notion that a deaf individual could be brought into the hearing world through surgical implants is, for Valente, a “phonocentric version of the ideal cyborg, a deaf-turned hearing cochlear cyborg, a chimera” (644). Both Valente and Kafer engage with Haraway’s cyborg, a figure often used in disability theory to critique essentialist ideas of the human and structures of completion, to propose “both disability and technology as sites through which new relations can be forged” (Kafer 5). I have previously discussed the figure of the cyborg and its treatment

³⁹ “Cyborgization” is an attempt to codify the crime of humanization, or normalization through cochlear implantation, perpetrated against young deaf children. It also updates and merges Foucault’s ideas of humanization with Haraway’s notions of cyborg ontology” (Valente 649).

within science-fiction tropes to explore pop-posthumanist interpretations of human/machine mergers based on enhancement. This understanding of the cyborg relies on narratives of completionism and perfectibility, but this can be overturned by imagining technology as a model for crip-making that subverts “the ableist underpinnings of normative kinship imaginaries” (Kafer 6), or the expected relations between humans and technologies. Valente’s use of the cochlear cyborg denotes a science-fiction fantasy of posthuman transformation that inclusive posthumanism seeks to mend. It should also be noted that the intent is not to criticize the cochlear implant recipient, but rather to point to the internalized normativity cyborgization evokes through its “army of ‘success-story’ mercenaries” (644) that triumph over the diagnosis of deafness.

Haraway’s cyborg is an important figure for imaginative affiliations that step outside the human/technology enhancement narrative. It provides an opportunity to think of disability, which is already very enmeshed in technology, in creative ways that destabilize the idea that “disabled people’s uses of technology are more assistive than creative” (Kafer 5). For my purposes, the cyborg functions not only as “a connection-making entity; a figure of interrelationality” (Braidotti 2013: 200), but as a way to demonstrate how the posthuman can initiate assemblages. I explicate this by engaging with Ralph James Savarese’s conception of embedded cognition, which “reveals the extent to which we all depend on our physical and social environments to think” (40). Savarese argues that since disabilities are neither strictly physical nor mental, but both, there are many cognitive inter-relations that exist beyond the enclosed individual engaging with the world. Savarese uses the example of a fish in water as a conjoined “swimming device” to theorize “coupled systems” that consider the individual organism as part of a larger ecology (41). The fish adapts its swimming motions by coupling with “pools of

external kinetic energy found as swirls, eddies and vortices in its watery environment” (Clark and Chalmers 9 qtd. in Savarese 41). I point to this to establish that cognitive systems are formed when humans draw together environmental actants to form an assemblage.

American Sign Language and Assemblage

As I have established, humans engaging with other actants in the world participate in ongoing responses that are always changing depending on occurrences within the environment. ASL as a language is typically seen as an assistive technology, but when it is performed and conveyed by human interpreters, it represents the beginnings of an assemblage of inter-relating actants. There are a number of ASL professionals working within music and the arts, for example, who reject audism and discrimination against deaf people through performances that strive to include a variety of patrons. A recent headline (2018) features interpreter Lindsay Rothschild-Cross who “slays” at a *Lamb of God* heavy metal concert by participating in what many in the deaf community have unofficially dubbed “the concert sensation.” As one concertgoer explains, “concerts are about a lot more than just the audio. They’re electric, with a passionate intensity” (Lehr qtd. in Axelrod and Ahmed). Another concertgoer claims, “you can feel the music in your body, plus get the signs and story about what the song is about” (Sawyer qtd. in Axelrod and Ahmed). I propose that ASL is a shared experience of integration, meant to “provide linguistic and cultural mediation between hearing individuals who use English and Deaf individuals who use Sign Language” (TSLIS).

Toronto Sign Language Interpreter Service (TSLIS) president Christopher Desloges describes ASL concert performance as the shift between a monophonic effect, as opposed to

stereophonic.⁴⁰ Stereophonic sound is not just about having more speakers, but about opening up channels that are interconnected and providing a different kind of depth (as opposed to dual mono, which treats two or more channels as separate entities). ASL concert performances are often mislabeled as a direct translation of text for people who cannot hear, explains Desloges, but “it’s not just that you can’t hear the lyrics, you can’t understand the context, culturally or stylistically” (Desloges qtd. in Ehrentraut). As Desloges elaborates:

Metaphorically, if you want two channels, you translate the words on the fly. To get four channels, you use gestures that express words with emotion. To get to channels five and six, you have to manipulate hand shapes like rhymes, and use signs that are equally poetic to the sound of their music. (Desloges qtd. in Ehrentraut)

ASL concert interpretation is not focused on exact translations or perfect timing, as a valuable interpretation involves understanding the artist’s vision in a particular way and sharing that with the audience. This requires significant contextual research into the artist and in-depth text analyses of their songs. The participation of a human actant is important, because everyone signs uniquely and will resonate with the music in their own way, but ASL concert interpretation is not designed to bring the deaf community into a hearing experience. Desloges claims, “Most people don’t realize English is not deaf people’s first language” (Desloges qtd. in Ehrentraut), asserting that these performances are not meant to be supplementary. If anything, they advocate inclusivity through community-building that celebrates people partaking in their own cultural experience that is not just auditory. *Lamb of God* singer D. Randall Blythe sees a concert as “a highly visceral experience for both the performers and our fans - we all feel the music together in an

⁴⁰ In sound recording, monophonic or mono sound uses a single channel, while stereophonic or stereo sound reproduces sound using two or more channels (“Mono vs. Stereo”).

emotional and physical way, creating a symbiotic exchange of energy that can and does have profound effects” (Blythe qtd. in Forde). This is the same for any concertgoer, as Rosa Lee Tim, a deaf performance artist explains, “we can experience the power of music through vibration, visual arts such as dancing, film, lighting, colors, and touching” (Lee qtd. in Forde).

Rather than thinking of technology as a replacement for the interpreter to increase efficiency and reduce the margin for error, the human interpreter operates as a key component of the larger assemblage. In this assemblage, technology does not do the work of the interpreter, nor does it function as an extension. In its various analog and digital forms, technology is just as important to the process as every other element that entangles with the interpreter from different directions. This requires an openness and alignment not only between the interpreter and the audience, but also with the artist who supplies their set list beforehand, the sound technicians, the devices being used (such as in-ear audio and video feeds), the stage, and the level of visibility. By contributing to this kind of assemblage, the technologized human is decentered from its former position as the overseer of assemblages, to become a participant in the construction of the event.

The posthuman has the potential to participate in events in relation to the environment and other human and non-human actants. Wills’ discussion of “dorsality” helps to frame the posthuman’s ability to move all around, including backwards, to acknowledge its technological origin and to embrace difference over progress. He explains, “we should reserve the right to hold back, not to presume that every technology is an advance” (2004: 38). As Marcel O’Gorman writes in *Necromedia*, Wills’ idea of “dissidence,” which I will elaborate on in the next chapter, contrasts the fetishization of technological development as progress. Technology “‘comes at the human from behind,’ and thus encounters us in a relationship of chance, rather than in a

straightforward, progressive manner” (Wills 7 qtd. in O’Gorman 15). O’Gorman also argues that this negates our control of technology, because it is not a “fabrication produced by hands manipulating matter within a visible field” (15). Thus, encountering actants with openness requires a relinquishment of control, and the acceptance that humans can act in the spirit of chance. This means acquiescing not only our revealing of nature, but the desire to direct the revealing that occurs while we participate in the assemblage. The human is always-already technological, as “we are our prostheses, and technology is not something we use to control so-called nature. In fact, we are not in control at all, and we never have been” (O’Gorman 17).

Inclusive posthumanism represents a repositioning the self as grounded in assemblages of discovery and unpredictability, rather than as self-possessed individualistic autonomy. In the next chapter, I will further explore how human relationships with technology can be turned into co-experiential events where we encounter the world from all directions instead of linearly. Wills recognizes the paradox of discovering the meaning of technology the human has not produced for itself and cannot see, which “would appear to contradict the definition of the technological as production or creation” (2004: 39). Yet technology always exceeds the intention of its production, due in part to conditions of production guided by the humanist desire for progress and upward mobility. To that, Wills argues we should acknowledge we are “becoming-dorsal” just as we are becoming-prosthesis when we engage the world with our bodies, because the concept of “dorsal chance” recognizes that technological production is truly unpredictable. We can engage in practices of kin-making by being open to experiences of estrangement and inter-relation to actants. This involves regarding technologies as platforms for discovering both how we can be posthuman and what we can be in relation with.

Chapter 5:

Unpredictable Encounters with the Technological Kind

[...]in turning back, or to the back, one turns technological if only for the reason that without such a turning, without that hindward disorientation, without thinking in a place and from a position whose security cannot be guaranteed, one will be unable to recognize technology or begin to account for its increasing direction of our movements and lives.

David Wills, "Thinking Back: Towards Technology, via Dorsality," 50

Non-human Entanglements and Contemplation

I have attempted to designate the posthuman as an alternative view of humanity as it has always existed, rather than as a progressive transformation triggered by encounters with technology. The previous chapter provides a basis for theorizing agency not as self-possessed individualistic autonomy, but as an arena of participation alongside and with technology. As I have stated, re-conceptualizing the human as a departure from anthropocentrism is a crucial point for entering into interdependent relationships with other actants. In the introduction to *The Non-human Turn*, Richard Grusin strives to decenter the human "in favor of a turn toward and concern for the non-human, understood variously in terms of animals, affectivity, bodies, organic and geophysical systems, materiality, or technologies" (vii). The model of the Anthropocene largely sees humans as the dominant influence on many ecological issues, but the non-human turn is meant to bring ideological "turns" together (such as actor-network theory, assemblage theory, and animal studies) in their common resistance against human exceptionalism and the dualisms separating the human from technologies, ecosystems, animals, and plants. However, Grusin also points to the constructivist tendency of these turns to strip the non-human world of agency and assign values from a humanist perspective. This suggests that decentering the

Western humanist subject is not enough, for it still privileges human rational thinking and encourages an instrumentalized approach to encounters with nature.

A shift from exclusively rational thinking to more contemplative consideration is needed to imagine posthuman existence as a state of being alongside actants. To be clear, I consider rational thinking as the technocratic impulse to optimize, and while contemplation is not necessarily irrational, it is not solely guided by efficiency. Thus, rather than assuming everything exists to exercise this efficiency, technological encounters must be approached with contemplation in order to create a space of conscious responsiveness to our surroundings. Catholic theologian Thomas Merton's writings on contemplation, notably his book review "The Wild Places"⁴¹ explores the balance between civilization and ecological awareness. Influenced by Ellul's writings on the technological society, Merton proposed contemplation as a method of creating community to combat the isolating effects of twentieth-century technology. In Chapter 3, I discussed the problems with mindfulness as a solution to the assumed threat that technology poses to presence. With reference to twenty-first century techno culture, *The Merton Annual* contributor Daniel P. Horan applies Merton's contemplation as a way of combating the loss of the "authentic" self that contrasts the projected self of social media. In a similar vein to Tristan Harris' mindfulness, Horan sees contemplation as a solution to the culture of distraction that prevents deep reflection, but this is predicated on developing and preserving the inner self against external influence. Rather, I view cultivating a space of contemplation as an opportunity

⁴¹"The Wild Places" is a book review of *Wilderness and the American Mind* (1967) by Roderick Nash.

for a spiritual openness of Being that recognizes the interdependence of all things, living and nonliving.

In the previous chapter I discussed Heidegger's conception of Being as inter-related, which calls for an understanding that everything humans encounter is not automatically an object to be used at will. To conceptualize reality as a gathering of humans and non-humans, Heidegger's evaluation of modern technology is meant to illustrate not that humans are helpless against its machinations, but that it "is never a fate that compels." (1977: 25). In other words, *geschick* or "destining" is there to be scrutinized and "in no way confines us to a stultified compulsion to push on blindly with technology" (1977: 25). The human instrumentalization of technology does not inherently stimulate a forward momentum either, but contemplating its potentiality involves maintaining what Heidegger calls meditative thought.

In his "Memorial Address," Heidegger argues there are two modes of thinking: calculative, a technical kind of thought in which people gather information and put it together in order to put it to some specific use; and meditative, which involves ruminating on whether something should be done, beyond the calculative process of actually doing it. In this address, Heidegger describes his fear that the world has become "an object open to the attacks of calculative thought. . . . [N]ature becomes a gigantic gasoline station, an energy source for the modern technology and industry" (1966: 50). He claims that rather than asking where we can find large quantities of energy, we are now concerned with "the taming of atomic energy" (1966: 51) to make way for a new era of development. Heidegger sees technology, particularly atomic energy, as a powerful force that must be managed lest it become unsecured in terms of our relation to it:

In all areas of his existence, man will be encircled ever more tightly by the forces of technology. These forces, which everywhere and every minute claim, enchain, drag along, press and impose upon man. . . . [T]hese forces, since man has not made them, have moved long since beyond his will and have outgrown his capacity for decision. (1966: 51)

Heidegger believes technology is a powerful force that can be brought under human control, but I believe this is less about the human rising up to tame technology than it is about resisting the calculative utilization of technology. The human is not “a defenseless and perplexed victim at the mercy of the irresistible superior power of technology” (1966: 52-3). Rather, Heidegger advises that “we can use technical devices as they ought to be used, and also let them alone as something which does not affect our inner and real core” (1966: 54). Here, Heidegger falls into the trap of essentialism by assuming humans have a real core, but this is unnecessary when considering our capacity for meditative thinking, which need not have an end product. The juxtaposition between calculative and meditative thought speaks to society’s relationship with modern technology dictated by usefulness. That is, if something is not immediately and absolutely useful, it should be cast aside. Yet our meditations on technology can help us recognize that technology simultaneously hides from us while opening itself to us, if we view it as more than technical. Thus, Heidegger claims we must adopt an attitude of “releasement toward things”⁴² (*gelassenheit*) and an “openness to the mystery” (1966: 55) of what is hidden in technology itself, for it is not dangerous in itself. Though we may be tempted to default to calculative

⁴² “Die Gelassenheit zu den Dingen. Gelassenheit . . . used today in German in the sense of ‘composure,’ calmness’, and ‘unconcern’” (Heidegger, Memorial Address 54).

thinking in response to technology's enticements, he warns against "inventing indifference toward meditative thinking, total thoughtlessness" (1966: 56).

Though at times Heidegger seems to illustrate the dominative forces of technology, his push towards meditative thought suggests that a shift in perspective helps to re-constitute Beingness as inter-related as opposed to anthropocentric. Though Heidegger is rather restrictive in his notions about technology, his ideas are still useful for establishing that "technology is a calling, a revelation of being rather than a mere way to instrumentalize beings, and let *poiesis* re-establish itself, as the gathering of human and non-human elements and forces" (Pellizzoni 154). Pellizzoni does not imply we leave the natural world be, but encourages "listening to and respecting the *poiesis* of nature, its self-giving" (154). Similarly, Sabatino sees *gelassenheit* as a thankfulness, a handling of the world with a sense of receiving as opposed to a taking, a detachment:⁴³

Detachment does not leave things alone, for so long as we dwell within the world and its network of relatedness, there is nothing alone. However, it represents a way of relating and thus a way of handling things that no longer clings, possesses, holds on, and claims as one's own. (Sabatino 72)

As I have stated, agency should not be something that one claims or possesses, but something that one participates in through intra-action. This requires a re-locating of the humanist position and a shift away from calculative thinking, where the posthuman can be theorized not as a

⁴³ The influence of Buddhism on Heidegger's work has been well documented. Specifically, *dasein* or Being has been compared to the Buddhist idea of Emptiness or Nothingness by scholars such as Wing-Check Chan in "No-Mind and Nothingness: From Zen Buddhism to Heidegger" (2010).

forward-moving progression, but a turning back to the inter-relational human's co-evolution with non-human entities including technics long before the emergence of modern technology.

Grusin claims we must recognize that “technical mediation itself needs to be understood as a non-human process within which or through which humans and non-humans relate” (xiv). Thus, the non-human turn represents not only a concept, but “a movement of embodied thought, a rotation or shift of attention toward non-humanness. . . . To turn toward does not imply merely to turn away but to confront, to lose one's way, to move aside” (Grusin xx). As I alluded to in the previous chapter, the idea of losing one's way is also how Wills frames dorsality, offering an alternative view of the body's prosthetic relation that centers on unpredictability. The dorsal is “out of reach . . . out of sight, in every way unforeseeable” (2007: 5), proposing a space “to work through our relation to new, or what we might call post-mechanical, post-machinic technologies” (2007: 5). Wills' dorsality invites a space for considering the body's relation to technology that diverges from technological functions as programmable and constitutive of logical next steps, moving into the creation of the unexpected. He describes this shift as paradoxically embracing both *tekne* and *túkhē* ⁴⁴, resisting technological invention as a programmable forward advance. In this chapter, I show that the inclusive posthuman self is a production of embodiment articulated through encounters with technology that divert from progress. As Wills argues, “insisting that technology comes from behind, or that it arrives by chance, even and indeed that it is within the (back of the) human, amounts to a strategy of resistance against that presumptive or pre-emptive force” (2007: 5). Recalling *dasein* and its potentiality of Being as “not yet,” embodiment from a posthuman perspective can formulate the self in a broader context than what

⁴⁴ The Greek *túkhē*, when regarded as an agent or cause beyond human control, stands for “fortune, providence, fate, chance” (Wiktionary.com)

exists at the present moment, but humans must be free to participate in encounters of discovery centered on thinking that is meditative rather than calculative.

Embodiment as Relational Emergence

In *Bodies in Technology*, Don Ihde claims “we are our body” (xi), arguing that embodiment is a combination of “Body One,” the perceptual, physical form of the flesh that is “motile, perceptual, and emotive being-in-the-world” (xi); and “Body Two,” the body as a cultural, social and political construction. Ihde considers how bodies and technologies form a symbiotic relationship of adaptability within a production, but ultimately sees the phenomenological Body One and the postmodern Body Two as insufficient to analyze the outcome. Rather, he proposes a “third” Body by triangulating the experiences of Body One and Body Two through embodied relation, or “experiencing something in the world through an artifact, a technology” (xi), which he compares to Heidegger’s hammer⁴⁵ and Merleau-Ponty’s long-feathered hat.⁴⁶ I have spent this dissertation arguing against viewing technological entanglements as extensions, and despite Ihde’s construal of the aforementioned artifacts, he dismisses bodily relations that overcome finitude as “technofantasy” (xii). What interests him more is Body Three’s ability to engage in reciprocal embodied interaction through “occasional encounters” with artifacts involving not only muscles and flesh, but “encounters with much wider and deeper notions of who we are” (xii). The physical body’s materiality is not merely its existence as a corporeal entity we use to move about; it is our understanding of how it (and thus the self) fits into the world. This does not privilege the physical actions of the body as the only

⁴⁵ See Heidegger’s *Being and Time* I.iii, page 65.

⁴⁶ See Merleau-Ponty’s *Phenomenology of Perception* III, page 135.

access point for embodiment, but involves a metaphorical mental model of one's being in the world.

I have attempted to construe the body not as a vessel or extension of the self, but as the originary prosthesis through which we encounter all manner of humans, non-humans, objects and environments. In "Flesh and Metal: Reconfiguring the Mindbody in Virtual Environments" Hayles compliments the arguments posited in *How We Became Posthuman* concerning the erasure of embodiment in cybernetics literature, to talk about embodiment as an emergent relation. She first differentiates between the body and embodiment, explaining: "The body is the human form seen from the outside, from a cultural perspective striving to make representations that can stand in for bodies in general. Embodiment is experienced from the inside, from the feelings, emotions, and sensations that constitute the vibrant living textures of our lives" (2002: 297). Hayles sees the body and embodiment as always dynamically interacting while also recognizing her own distinction between the body and embodiment as somewhat dualistic, for it differentiates between an inside and an outside. To avoid these dualisms, she proposes a focus on relation and dynamic flux from which the body and embodiment are continuously emerging phenomena. Her position helps to negate any pre-conditions of the body and embodiment and contextualize them as relational entities that change depending on specific kinds of interactions.

Hayles borrows Mark B.N. Hansen's term "mindbody" to signify the emergent quality of the body and embodiment through interactions with technological environments, many of which have not yet even occurred (2002: 299). To employ the notion of meditative thinking within this emergence, I return to the notion of "becoming-machine" to imagine the body politic as participating in what Braidotti calls "radical relationality and delight" (2013: 92) when merging with machines. Braidotti calls attention to Deleuze and Guattari's "Body without Organs" to

demonstrate a perspective of “releasing human embodiment from its indexation on socialized productivity...that is to say without organized efficiency” (2013: 91). The body without organs consists of an assemblage or body with no organizational structure, and as Deleuze and Guattari argue, “you can never reach the Body without Organs, you can’t reach it, you are forever attaining it” (Deleuze and Guattari 150), suggesting a space that is constantly changing with every encounter. Thus, rather than reflecting the unifying system of organization and productivity, it is a system of embodiment through consolidation. I point to this term to suggest a posthuman refashioning of embodiment as co-constituted with technology, not as a transformation with an end product, but a reciprocal merger. To explore how this co-constitution can be performed, I will spend the majority of this chapter discussing art projects and films that demonstrate estranging, exploratory approaches to relationality, beginning with Hansen’s politics of mediation to re-conceptualize media as a correlate of embodied emergent life.

Encountering Technics through Indirection in *NOX’s Son-O-House*

In “Media Theory,” Hansen turns to epiphylogenesis, Stiegler’s term for the exteriorization of human evolution, to re-define media “not as artifacts but via their participation in human technogenesis (our co-evolution with technics)” (Hansen 297). Media theory is an opportunity to combat the transcendental ideology that positions technics from a strictly human point of view. Epiphylogenesis does not privilege the human as the powerful inventor of technology, for the human is invented through participation with other actants. Stiegler sees the human reaching beyond physical limitations as a “conquest of mobility” (17) which begins in the spine when the human stands upright. This does not refer to the human expanding its intelligence, but reaching beyond him/herself through movement. Stiegler explains, “prostheticity, here a consequence of the freedom of the hand, is a putting-outside-the-self that is

also a putting-out-of-range-of-oneself” (Stiegler 146). As I clarified in the previous chapter, Stiegler’s reference to “outside” the self is not demonstrative of an internal or external division separated by bodily boundaries, but outside of the idea of a unified, enclosed self.

Hansen seeks to complicate the idea that technics are subordinate to human thinking by illustrating the correlation between the human and the technical as existing beyond the human’s instrumentalization of media. Hansen relates Stiegler’s coupling of human and technics with biological autopoiesis, which “demonstrates that embodied life necessarily involves a ‘structural coupling’ of an organism and an environment” (Hansen 299). Media theory attempts to conceptualize the medium in terms of “middle, center, midst, intermediate course, thus something implying mediation or an intermediary” (300). For Hansen, this is what concretely bridges the gap between human and technic that opens media as part of human action and experience, rather than existing on the outside. When we engage in technological mediation, we designate media as the window of access, yet Hansen’s crucial differentiation recognizes that “the medium, and mediation as such, necessarily involves the operation of the living, the operation of human embodiment” (300).

Previously, I referred to the correlation between the human’s use of information communication technologies (ICT) and the disembodied qualities of extension. Establishing human embodiment in light of the increasingly complex ways humans interface with technology is essential to understanding these relationships as mutually interdependent. For Hansen, the emphasis on technologies that archive human experience “addresses only one side of a bi-directional circuit” and lessens the importance of “the living basis of technics” (300). He argues that the pervasiveness of our information-rich technological environment only disorients technics in terms of the human experience, though the relationship remains one of co-evolution. Technics

have an evolutionary history, but no matter how they change, “they operate only through their coupling with the human” (302). Hansen asserts that technics have a certain degree of autonomy, which suggests not that technology holds power over the human, but explores “human evolution and technical evolution by reciprocal (though asymmetrical) indirection” (302). The idea of indirection informs my conception of inclusive posthuman entangling where human/technology encounters need not be causal or calculative on the part of either entity. Neither humans nor technologies are directing these encounters, but in coming together, a third entity emerges. I liken this to Ihde’s Body Three of reciprocal embodied interaction, which occurs when one occasionally and temporarily experiences the world with (and within) an actant.

An example of how this intersecting might occur is the interactive art project *Son-O-House*, created by NOX architect Lars Spuybroek and sound artist Edwin van der Heide. Hansen refers to *Son-O-House* to demonstrate how generative sound patterns are translated by twenty-three sensors that react to the movements of visitors. The sensors are positioned in various areas to influence the music made by “spatial interferences and dynamic standing wave patterns” (“Son-O-House”). The artists describe it as “a house where sounds live . . . ; a structure that refers to living and the bodily movements that accompany habit and habitation” (“Son-O-House”). The visitor enters a warped space where motion sensors and speakers create feedback by picking up human movement. Both the space and the visitor become participants as the project “brings together body, sound, and space into a positive feedback system that creates two kinds of emergence: of new bodily movements and of new frequency interferences” (Hansen 303). In this encounter, “both follow the same basic rule – let movement create space – each does so in a manner entirely particular to it” (303). What this means is neither is influencing the

other externally, but are bringing forth respective internal changes as the space makes audible the emergent sounds representing the synchronization.

Unlike in some interactive art, the visitor's movements are not translated into sound directly; rather, it is the visitor's presence that merges with the structure and "develops with the traced behavior of the actual bodies in the space" to create "an evolutionary memoryscape" ("Son-O-House"). The structure is generative in the sense that both it and the visitor enter into an exchange of shared information continuously analyzed. The visitor's movements and pathway through the structure are unpredictable, so "the result is a complex feedback system in which the visitor becomes a participant" ("Son-O-House"). The visitor's role as participant allows the sound to be synthesized in real time, challenging them "to re-interpret their relationship with the environment" ("Son-O-House"). This culminates in a continuously developing floating space with no pre-prepared sounds, based only on parameters set by certain rules the system must follow. Participants enter and exit the space, leaving their traces behind as *Son-O-House* compiles the sounds into its ever-growing intertwined lexicon.

Hansen's use of this project exemplifies what he calls a "politics of presencing" that uses the integration of humans and technologies as an access point for "contemporary mediation (or media artifactualization) of the flux of consciousness (which is to say, over the flux of life itself)" (303). This demonstrates the struggle for control over the production of presence, and this type of mediation frames technology as something that helps people "intervene creatively and substantively in the production of presencing" (304). The idea of creativity as a mode of production centers on lived reality, which, importantly, cannot be pre-programmed. It is thus that indirection makes way for "a *reprogramming* [my emphasis] of interactivity that exploits the material creativity of human embodiment [. . .]" (303). Indirection must involve an openness and

even a vulnerability in the face of technological encounters, where the human's role is to participate in the production of the process alongside the medium.

To recall Wills' argument, "one cannot resist the programmatic forward march of technology by presuming to program the intervention of chance; it has to be more oblique than that" (2007: 6). This suggests that the human's participation requires a willingness to support the outcome however it may unfold. As an example, Wills illustrates this emergent outcome in terms of improvisational entanglement when writing about the intimacies of technics and chance in jazz. In "Jasz Annotations: Negotiating a Discursive Limit," he explains musical improvisation as a site for events of spontaneity, creativity and instrumentalization. In music, he asserts, a "rehumanization" occurs that cannot be explained but is performed, as instrumentalization and humanization occur simultaneously during this exchange (1998: 13). He argues: "It is as if written music retains the link to the human that wrote it whereas improvisation functions as an impersonal form; and however much the musician makes his instrument speak, he nevertheless makes it heard as an instrument" (1998: 13). In other words, composed music that must be read manifests as a reflection of the musician while the instrument brings forth that representation. In improvised music, it is not the human's direct expression that is heard, but the result of the entanglement of human and musical instrument emerging from the interactive spontaneous event.

In "Technological Presence: Actuality and Potentiality in Subject Constitution," Asle H. Kiran sees technical mediation not as utility, but as involving possible actions yet unknown. Though Kiran argues that these possibilities might "enable the subject to be constituted in a temporal forward-directedness" (77), I am less interested in the revealing of subjectivity as progressive, and more in technology's influence on life through its potentiality for co-

constitutive realization. What Kiran calls “technologies in-use” (78) are technologies in relation to human interaction, yet this does not entirely encompass their existence as phenomena. A technical object is almost always created for a certain reason, but it has the potential to become any number of things once encountering a human. Technologies are not alive per se, but they are imprinted and given life through human exteriorization and archival processes, or through encounters of indirection that have no pre-coded agenda. The actant or medium can participate in multiple events alongside the human, but the human does not always decide what the actant is in the process of becoming, nor the outcome of the symbiosis.

Reflection, Echoes and Control in David Rokeby’s *Very Nervous System*

It is important to dismantle the notion of media as a direct outward extension of the self to conceptualize the human’s supporting role in an open assemblage. Artist David Rokeby describes interactive art as “a medium through which we communicate with ourselves. . . . [T]he medium not only reflects back, but also refracts what it is given” (Rokeby). The unique nature of interactive art relies on the artist and audience as interactors to produce what is both a reflection and a distortion of their activities. His installation *Very Nervous System* (1986-1990) is an attempt to subvert the idea that “computers are the greatest expression of man’s desire to control. They are a pure representation of authority” (Rokeby). The computer in this piece is positioned to look at the physical gestures of a participant through a video camera. The participant’s movements are then translated to sounds and reflections “thereby transforming the interactor’s awareness of his or her body. . . . [T]he experienced phenomenon is discovered as a chance in a representation of the self” (Rokeby). Using the analogy of a mirror, Rokeby illustrates the artist’s engagement with a fragmented image that shifts the nature of their authority over the work. He points to McLuhan’s writings on the Greek myth of Narcissus to differentiate between

media as an extension to amplify the self by producing a direct reflection, compared to an echo, which “operates like a wayward loop of consciousness through which one’s image of one’s self and one’s relationship to the world can be examined, questioned and transformed” (Rokeby).

McLuhan writes the following to explore narcissism from *narcosis*, or numbness:

The youth Narcissus mistook his own reflection in the water for another person. This extension of himself by mirror numbed his perceptions until he became the servomechanism of his own extended or repeated image. The nymph Echo tried to win his love with fragments of his own speech, but in vain. He was numb. He had adapted to his extension of himself and had become a closed system. (McLuhan 41)

Though McLuhan argues for media as the extension of man, this quote warns against viewing media or prosthesis as enabling an inward turn amplifying the internal self and leaving little to no space for other influences. Rokeby points to McLuhan’s “psychic numbness” to describe falling in love not just with one’s reflection, but with one’s extension of themselves they believe is their real self.

To recall my argument from Chapter 3, Turkle sees this extended self as overly curated and false,⁴⁷ and McLuhan sees devices as facilitating a remorse for a lost authentic selfhood. However, in *Necromedia* O’Gorman sees this remorse as the repression of any existential thought or exploration of the deeper implications of our technology use. He argues:

We have created the ideal environment to foster the production of remorseless ‘immediate men.’ Technological gadgets of all sorts—

⁴⁷ See Turkle discussion in Chapter 3, page 76.

driven by an economy that capitalizes on human attention and abides by the law of progress for the sake of progress— are designed to distract us from any sort of existential contemplation, let alone death reckoning. (O’Gorman 47).

The term “immediate man” comes from Ernest Becker’s interpretation of Kierkegaard’s notion of the introvert.⁴⁸ This term suggests a magnification of the Human’s internal understanding of the self, which leaves little to no space for intellectualizing a position within the crux of overall digital engagement. For McLuhan, this kind of extension results in “self-amputation” because the central nervous system attempts to protect itself from the stress induced by acceleration. As Alla Ivanchikova notes, the “ever-increasing technological inundation results in hypercomplexity, hyperacceleration, and a high degree of standardization of human interactions” (Ivanchikova 66). This suggests a numbing of the self through disassociation while embracing technological extensions, but McLuhan thinks this inclusion of technology into our schema is necessary so we can “undergo the ‘closure’ or displacement of perception that follows automatically” (McLuhan 45).

When Rokeby engages with the myth’s dual meaning, he exposes the synchronous reflection of Narcissus as well as a distorted reflection of what he hears Echo saying. While the direct reflection is a closed system (as Narcissus is simply absorbing himself), Echo’s reflection of his speech is transformed, representing “a dialogue between the self and the world beyond” (Rokeby). The stereoscopic encounter between the participant and their transformed reflection as well as the tension resonating from this production demonstrates an image of the self from a new point of view. Rokeby explains, “interaction has come to mean ‘control.’ People look to

⁴⁸ See Ernest Becker, *The Denial of Death* (1973).

interactive technology for ‘empowerment’, and such technologies can certainly give the interactor a strong sense of power” (Rokeby). Yet this particular installation helps facilitate an encounter of indirection that both the participant and the computer are part of. The computer and video camera do not project an image onto the participant, nor does the participant direct the computer and video camera to capture certain elements of movement, thereby controlling the resulting reflection. Neither the computer nor the transformed reflection interfere with the original participant, though an emergent third component is produced representing the entanglement. This is the outcome of this relationship of indirection, but this new component should not be mistaken for a direct reflection or extension of the participant or the computer, because it is not an agent through which control is exercised.

I spoke in Chapter 3 about technologies being used as self-extensions through which many attempt to assert agency by controlling and even absorbing actants they encounter. Though Rokeby sees the result of human-computer interfacing as a type of extension, he also claims “these extensions are not just enlargements of the boundaries of our autonomous individualities; they are interfaces through which our contact with the outside world is mediated” (Rokeby). This is an important point, as the emergent effects of human/machine interactions support a type of mediation not centered on the human controlling an environment via technology. Rokeby’s reference to an “outside world” does not refer to an external area separated by a bodily boundary, but rather a space rich with prospective entanglements of chance. As Rokeby makes clear, “if control over this environment is insisted upon, it becomes a system of insulation and isolation from both otherness and ambiguity” (Rokeby). This suggests the human participant must be open to the unknown and place themselves in environments that step outside expectations of straightforward interaction. To examine this idea more carefully, Rokeby contrasts interactive art

with VR, claiming that while “virtual reality is intended as a technology for presentation or visualization, its conventional control interface of DataGlove and Polhemus trackers are quite adequate, and the lack of ambiguity appropriate” (Rokeby). Here, Rokeby is comparing interactive art, which encourages a relinquishment of control for the participant, with a system purposely designed to give control to the participant who acts within the environment.

Virtual Reality and the Loss of Control through Perspective-Taking

My inclusion of VR in this chapter is meant to challenge the typical affordances of the medium as a conventional control system, because while VR is characteristically used to reaffirm the human’s sense of self-projection, I argue that it can also displace it. As Rokeby asserts, VR technology is evolving to the point where “the visual renderings grow increasingly ‘real’, but the relationship between the participant and the reality remains simplistic” (Rokeby). This simplistic relationship is one of control, and in VR users are typically conscious of the levels of their gaze as well as the tools at their disposal with which they can move through simulated environments. Rokeby explains that while this may be desirable for some users, experiences tend to be much more chaotic and random:

Our interface with the ‘real’ world and with other people is complex and highly non-linear and, from a ‘control’ point of view, very ambiguous. Interface designs appropriate for the cockpit are not necessarily appropriate in our relationships with the world around us. (Rokeby)

In terms of gaming and 360 video, VR is often marketed as an opportunity to transcend the body and access new frontiers from a safe and contained vantage point where the user navigates from an omniscient position. When attempting to investigate the link between VR and control, search

results yield articles about VR motion controllers, the quality of visualizations and frame rates in relation to user synchronization, and dystopian headlines such as “Oculus Go: We must control virtual reality before it controls us.” In the 1990’s, VR-related news boasted about a technology that would transform reality and produce “a great leap forward in many fields” (Briggs). In “The Promise of Virtual Reality,” John C. Briggs of the *World Future Society* expressed concern with the overstated hype of VR that saw it as a fully realized technology, reassuring readers that the technology would only mature with better software, faster computers and more sophisticated and less obtrusive equipment. While maturation refers to the period when a new technology becomes economically available for widespread consumption, adoption is more about the context within which it will be accessed.

Given this, *Wired* editor Peter Rubin argues VR’s largest hurdles are not related to the technology itself, but to the attitudes surrounding it. Though many think of VR as a transformative technology in terms of gaming, he dismisses games as a diversion and insists most people are drawn to the social experience of being with others in simulated realities, rather than being alone (Chen). Though Rubin’s work is largely focused on the humanist-forward ways VR will help us “explore new frontiers” and “transform our very notions of life and humanity” (Rubin), he stresses the potential for empathy-induced closeness. In the last two years alone, researchers and enthusiasts have optimistically heralded the potential of VR as “the ultimate empathy machine” with its capacity to help people relate to others through visual stimuli (Shashkevich-Stanford). Empathy may be the current axiom associated with VR, but achieving it is much more complex than the projects I engage with below suggest. I propose that rather than overstate the capacities of VR as a mechanism of fabricating empathy through passive observance, we recognize the value of perspective-taking in VR as encouraging displacement. In

Chapter 1, I referenced Ferrando's approach to posthumanism as a "perspectivism" (2016: 250) that promotes a spiritual politics of plurality. I see inclusive posthuman entanglements as allowing for multiple viewpoints of self-discovery that are achievable "once the self has been recognized as the others within" (Ferrando 2016: 254). Though VR is not typically geared towards displacing the user, minimizing or eradicating the conventional control system of a simulated experience can induce a decentering of the individual self, as the projects below exemplify.

A *Futurity* article titled "Virtual Reality May Boost Empathy More Than Other Media" surveys the project *Becoming Homeless*, a seven-minute VR film developed by Stanford University's Virtual Human Interaction Lab. The experience guides participants through several interactive scenarios where they are placed in situations with limited options and no real control over the outcome. Previous research on VR and empathy has examined effects on participants over a period of less than one week, yet this project tests for two months. Researcher Fernanda Herrera claims, "taking the perspective of others in VR produces more empathy and prosocial behaviors in people immediately after going through the experience and over time in comparison to just imagining what it would be like to be in someone else's shoes" (Herrera qtd. in Shashkevich-Stanford). I will note the distinction between empathy and awareness is absent in statements like these, and perspective-taking does not automatically provoke prosocial action. Another series titled "Project Empathy" by Benefit Studio has similar aspirations with its focus on "enhancing public understanding" of the United States prison system with VR experiences *Left Behind*, *Prey*, and *The Letter*, respectively geared towards parents, educators, wardens and mental health professionals. The objective of "Project Empathy" is to increase public awareness by "closing the gap between 'us' and 'them'" and "humanizing hot button issues" ("Project

Empathy”). This is an attempt to broaden the lens with which oversimplified topics such as crime are viewed by the mainstream public. In this context, it appears that “humanizing” refers to increasing empathy through heightened awareness, but social justice requires more active participation.

In previous chapters I have considered technologies that promote a humanist sense of being “more human” as amplifying one’s influence across multiple spaces. VR researchers are equally invested in ways the medium can magnify reach and allow individuals to transcend space, but I argue these attempts at “humanization” can be more apt at decentering the isolated individual by reversing the self-projection that technologies such as mobile devices afford. In other words, mobile devices instigate a controlled outward projection of the self, while VR can actually invite the perspectives of others onto the self in an embodied interaction. However, it is worth noting that, as Ferrando rightly argues, “these embodiments cannot be considered independently from their environments, which are crucial to the developed perspectives” (2016: 250). This is precisely why it is unlikely that perspective-taking in VR can actually produce empathy in the way these enthusiasts believe, but this does not mean that it is without merit.

In “Can New Technologies Make Us More Human? An Inquiry on VR Technologies in Social Cognition,” researchers Daniel Zuromski, Adam Fedyniuk and Ewelina M. Marek propose that despite the ingrained image of new technologies negatively impacting human relationships, some can produce surrogate interactions that are positive. They also argue VR can “make us more empathetic, altruistic and understanding toward each other” (Zuromski et al.), but this is very difficult to achieve, and I propose that something different is occurring. A perspectivism is developed that manifests through exposure that “creates conditions for the formulation of new social relations” (Zuromski et al.). I point to this study to illustrate that VR

does not strictly have to be an interface of control for the user, but can be a platform for learning about and accepting difference. Through first-person VR, Zuromski et al. propose that we can learn about cognitive differences that help influence our moral actions and overcome stereotypes and biases. Though this idea suggests individual growth, Zuromski et al. are more interested in how VR allows for “self-other merging,” where the user overlaps someone else’s experience with their own. They cite a study⁴⁹ featuring two participant groups; one is immersed in VR that simulates color-blindness, and the other is given detailed verbal descriptions of the same simulation. The results show that those immersed in VR have a higher disposition towards helping others and can describe the experience with more accuracy and empathy, but only because of perspective-taking, which encourages an adoption of another person’s point of view.

Despite immersive VR and the results of this study, I will once again note that imagining one’s point of view by taking on their perspective is still not equivalent to experiencing something first-hand because of pre-coded biases. In “The Perils of Playing Blind: Problems with Blindness Simulation and a Better Way to Teach about Blindness,” Arielle Michal Silverman claims although people may blindfold themselves in an attempt to understand blindness, this type of simulation “highlights the initial trauma of becoming blind rather than the realities of being blind” (Silverman). Though such exercises can definitely trigger sympathy, promoting empathy requires accurate teachings about blindness involving “meaningful contact with other blind people” (Silverman). It can be argued that blindness simulators offer perspective-taking because they afford temporary adoption of physical differences. This is not

⁴⁹ See Sun Too (Grace) Ahn, Amanda Minh Tran Le and Jeremy Bailenson. “The effect of embodied experiences on self-other merging, attitude, and helping behavior.”

the same as empathy, but it invites the opportunity to participate in a collective understanding involving multi-sensory stimuli that can aid in the dislodgment of normative individualism.

Empathy, Otherness and Shared Experience

Broadening perspectives is vital to inclusive posthuman identity construction, and VR has the potential to enable people to share in experiences of Otherness that encourage a mindset of collectivity. In 2017, “The Sidra Project,” a collaboration between the United Nations, “Artscape” and *Vrse.works* released the U.N.’s first VR film. Created by Chris Milk and Gabo Arora, *Clouds Over Sidra* follows a day in the life of a 12-year old Syrian girl living in Za’atari, a refugee camp in Jordan. The user wearing the VR headset is guided by Sidra as she narrates the experience, and though her likeness is only shown at the beginning and end of the film, it is clear the user is following her perspective. The user begins in an unnamed desert where nothing is visible except for sand dunes for miles, and when she looks down, she sees tire tracks and footprints, but no footprints of her own. In “Voyeur Reality” Kathryn Hamilton describes the user as immersed into a landscape overlapping “the marks of multiple feet. . . . [S]he occupies the point at which all the footprints meet” (Hamilton). Hamilton argues the footprints are “a dense meeting point of different agendas above which the user is positioned, and through which the user views the world” (Hamilton). Here, the user joins a space previously occupied by others, suggesting an involvement where the user is not leading the experience, but sharing in it.

Most types of VR and 360 video allow users to control what aspects of an environment they are observing through head-tracking, but *Clouds Over Sidra* presents an immovable point of view where the user’s gaze is fixed. Traditional films do this as well, but VR removes the user from a position of authority over the movement of the narrative, forcing them to collaborate with the author and the character of Sidra. The camera’s consistent use of low angle shots creates the

impression that the user is meant to experience these frames from the point of view of a child, and this differs from the omniscient view that VR usually offers where the user controls what they see. Sidra shares an inside view of her family's tent that houses her parents and three brothers, one a baby who cries all night. When sharing her classroom, the user's perspective is established by the camera that shows a side view of the other student's desks, as if the user herself is sitting among the students rather than at the front of the room looking towards the class. Sidra shares the football courtyard where the girls play, the gyms for young boys and older boys, as well as the bakery she walks by every day when she goes to school. These limited perspective techniques are used in traditional film as well, but VR accesses multiple sensory receptors that envelop the viewer into a more immersive embodied experience where they are essentially moving with Sidra's body. Though VR often denotes a liberating experience of disembodiment, in *Clouds Over Sidra* the user does not leave their body, but merges with another one through an understanding of social difference within a simulated reality of Otherness and disorientation, even if it is only temporary.

The U.N. released *Clouds Over Sidra* to boost philanthropy by attempting to forge an empathetic connection between users and events, and *VRse.works* also hails VR as "the ultimate empathy machine" (Robertson). Yet as I have suggested, simply placing people into scenarios where they are witness to stories about vulnerable and marginalized people does not create empathy. Since VR is framed by its maker's perspective, it is not truly a conversation of transparent dialogue because only one side speaks, and the other side observes. What is effective about this project is the lack of control given to the user in terms of what they see and how they move, as they cannot choose to linger in one space or closely investigate another. This VR film aims to help people "understand the lived experiences of refugees" ("The Sidra Project") by

placing the user into not only an observational role, but into an interaction with the cause by asking them to take on perspectives that are often not given adequate attention. This day in Sidra's life focuses on the mundane activities of a young girl, creating a depth that brings a "world audience into a more intimate relation with crisis" (Hamilton) by destabilizing pre-conceived notions of refugee camps. Though the participants of the project cannot truly experience the crisis, the hope is to "create solidarity with those who are normally excluded and overlooked, amplifying their voices and explaining their situations" ("The Sidra Project"). The project is transparent about its purpose to "sustain interest and support for refugees" via donations, which have currently totaled to 70 percent more than what the U.N. projected. After the initial phase, survey results indicate that 95% of people agreed the film "heightened their sense of empathy toward the plight of refugees" while 87% are more motivated to take action, and 94% believe that more people exposed to the project would yield even greater support ("The Sidra Project").

Clouds Over Sidra may inspire people to be charitable with communities they are rarely exposed to, but criticisms of such enterprises express valid concerns regarding their inflated potential for connection. In "It's dangerous to think virtual reality is an empathy machine," Erick Ramirez argues that technologically-enabled emotional responses may help cultivate sympathy but not true empathy. Ramirez distinguishes between empathy which "relates to the cognitive and emotional abilities that help us *feel with* another" and sympathy, which "involves the capacities that help us *feel for* another. It doesn't include imagining what it's like to be someone else" (Ramirez, his emphasis). He cites Thomas Nagel's influential 1974 essay⁵⁰ to explain that "a gap of understanding arises because our evolved way of being embodied and our very human,

50 Thomas Nagel, "What Is It Like to Be a Bat?" (1974)

very self-reflective, and very personal life experiences shape the way the world seems to us” (Ramirez). This reference is pertinent when considering Stanford University’s Jeremy Bailenson who created a VR slaughterhouse⁵¹ that attempts to create an embodied relation between human participants and cows, leading him to also declare VR as “a modern-day empathy machine” (Ramirez). In response, Ramirez does not believe VR cannot truly “show us what it’s like to be someone else.... [I]t can only reveal what it would be like for *us* to have these experiences” (Ramirez). The challenge is that it is impossible for people to escape their own subjectivity and approach situations without internalized biases and the luxury of being removed. Though Ramirez admits VR can broaden perspectives, he nevertheless insists “perception is something we actively *do*, not something we passively experience” (Ramirez). The concept of *doing* rather than *observing* may distinguish empathy from sympathy, as the former involves “psychologically sharing someone’s perspective” (Ramirez) while the latter does not. I believe that sharing requires an openness and a trust that can be better explored by an interdependent engagement of embodied synchronization where both parties participate in an event.

An example of this synchronization occurs in another VR project called “The Machine to be Another” by *BeAnotherLab*. This interactive piece allows users to interrelate with part of another person’s life “by seeing themselves in the body of this person and listening to his/her thoughts inside their mind” (“The Machine”). Unlike the aforementioned projects, this installation differentiates between “the performer” as one who shares either a personal story or interprets one, and “the user” who takes on the episode to experiment with identity performance. Both the performer and the user interact in two identical spaces; the user sees the perspective of

⁵¹ See Jeremy Bailenson’s VR cow slaughterhouse simulation at Stanford University’s Virtual Human Interaction Lab.

the performer through a video feed that records what they see in real time, and the performer then follows the user's movements, essentially giving up their bodily control. In return, the performer narrates their thoughts through a microphone that transmits to headphones worn by the user, which "generates the perception of someone speaking inside their mind" ("The Machine"). The result is a "non lineal narrative. . . . [W]hen the user interacts with one object, the performer starts to speak about his experience and memories related to this object" ("The Machine"). This system is possible through an assemblage of actants with which both parties merge: "[T]he performance, an interactive narrative (related to objects disposed at the same position in two identical spaces), the experiment's assistants (with whom they can explore the touch sense), as well as sensorial/motor/physical stimuli disposed in the space, with which the user can interact" ("The Machine"). In this example, both the user and the performer become participants exploring identity formation based on relations of openness.

In the aforementioned VR projects involving 360 video streams, participants remain somewhat passive while watching stories encouraging them to see through the eyes of others. Though these experiences succeed in subverting the VR expectation of enhanced user authority by necessitating a relinquishment of control, "The Machine to Be Another" facilitates "embodiment narratives - stories shared through the other's perspective" ("The Machine") through a collaboration that emerges through movement. To recall Wills' earlier assertion that the technological turn requires a movement of a limb, "the human deviates from itself. . . . [T]he movement cannot begin unless it be structurally constituted by that sense of diversion" (2004: 37, 45). In other words, the human must purposefully resign their expectation of forward movement and seek other embodied influences that may lead them in unexpected directions, including turning backwards or sideways.

My discussion of perspective-taking as a merging exercise both between humans and non-human actants and humans alongside other humans is an attempt to imagine how posthuman entanglements can help to establish collective identity. Interactive art is an ideal medium with which to explore mergers because it encourages a fluid exchange between participants by prompting a deviation from the self. This broadens notions of identity by expediting a shift from the unitary to collective self through exploratory relations that no one individual or actant directs. While the aforementioned VR projects employ technology to help the human deviating from its centralized self to experience Otherness, it is important to clarify that my intention is not to relegate marginalized individuals into such a category.

In the previous chapter, I referenced several pieces by Chun-Shan (Sandie) Yi that subvert expectations placed on people's relationships with technologies intended to assimilate them into normative lifestyles. My decision to focus on projects that facilitate entanglements between humans and non-human actants is meant to create symmetry between human beings. Rather than imagining people with disabilities as Others who do not quite fit into normative standards of functionality, as many infrastructural and technological barriers instigate, I demonstrate how humans intersecting with actants ignite conversations. This is why it is so important to bring forth crip kin-making artists who use "these tools and materials to tell and re-tell stories, shifting the center of gravity and positioning themselves as producers of knowledge" (Kafer 26). One of the crucial aspects of this includes displacing normative understandings of what occurs as a result of entanglements between humans and prosthetics.

In many instances, these entanglements are framed from a limited standpoint that only recognizes affiliative practices between humans expected to assimilate into normalcy and their prosthetics. Yet disability studies opens up intimacies that can emerge from encounters of chance and indirection in inventive ways. As Kafer argues, imagining “functional” technologies as defamiliarizing involves “questioning which affects are associated with which technologies” (13). This puts forth opportunities to speculate different directions for prosthesis, for instance, that allow one “to look and move in more-than-human ways, suggesting a fluidity between human, animal, plant, and machine bodies” (Cachia 2016 qtd. in Kafer). I draw attention to the use of this term “more-than-human” because it suggests a bodily performance existing outside the realms of normative, functional, rehabilitative. The *more* in this sense topples the transhuman fabrication that denotes an amplified surpassing of the Human, and instead invites an inclusive posthuman that entangles for no normalizing purpose.

For an artist, moving from the position of creator to participant is an intentional shift that invites opportunities to share in events of chance and also trust. In an attempt to dislocate medicalized expertise over prosthetics, artist Lisa Bufano re-imagines prosthetic legs/stilts in her piece *One Breath is an Ocean for a Wild Heart*. Created from 28-inch table legs, the stilts are painted in bright orange and attached to the arms and legs of both Bufano and Sonsheree Giles, her collaborator. Bufano and Giles are dressed the same, the former standing over the latter’s body, creating an arch shape while balancing on the stilts. Giles is balanced underneath Bufano’s body, also holding herself up via the stilts. Bufano, an amputee, is balanced against Giles, who is not. The decision to unite two individuals with different bodies to one another as well as to prosthetic stilts “refuse[s] any simple understandings of diagnosis or sharp delineation between ‘disabled’ and ‘able-bodied’”(14). It also demands that audiences question what prosthetics

could be for in order to re-imagine participating in prosthetic entanglements that are not corrective. The bodies of both performers are intertwined as they lean on each other to move while always maintaining contact, but neither is leading. There is a focus on the inter-relationality and cooperation of the two parties, as “it is the presence of the other that makes movement possible; they need the connection to maneuver the technology of the stilts” (16). The movement itself subverts the normalizing expectation of a below-knee amputee walking upright, in favor of the sideways and slow crawling “we are supposed to disavow or outgrow” (16). The idea is that entanglements need not always be geared towards a narrative of overcoming, but can re-imagine reciprocal expansion outside of linear improvement, as the next object text I review demonstrates.

Prosthetic Friendship and Entanglement in Spike Jonze’ *Her*

At the beginning of this chapter, I explored human entanglements with non-humans and the potentiality of a re-constituted subjectivity that deviates from progressive individualism. I have presented a number of examples that envision humans connecting with other humans and/or non-human non-living actants, yet these relationships, despite the relinquishment of control on the part of the human, can be difficult to imagine outside of human intentionality. I have yet to explore inter-relationships between humans and cognizant technologies that have their own intentions, so to hypothesize these potentialities, I turn to Wills’ discussion of Jacques Derrida’s *Politics of Friendship* (1994) to examine the “breaking with naturalness or homogeneity” (Derrida qtd. in Wills 2007: 11) that is necessary for inter-human encounters. As I have established, prior to the involvement of another “body” or “thing” in any relationship, a re-articulation of the self that constitutes an interruption of wholeness is needed. This involves “opening to the surprise approach of a radically inconceivable and unforeseen otherness, along

with the radical hospitality or trust that that implies” (Wills 2007: 11). I have already established that the human must be willing to break from their unitary confinement and approach actants with openness, and engaging in unforeseen relationality with an artificially intelligent being invites even further decentralization. In “Full Dorsal: Derrida’s Politics of Friendship” Wills proposes a hypothetical imagining of “prosthetic friendship” not between two living beings. From the perspective of dorsality, Wills contends that a friendship between a human and technology could support a “post humanist politics” for the technological age, for it involves “a turning or detournement, something of a diverting . . . , a particular rearrangement and perspectival shift” (2005). This shift in perspective conceives prosthetic friendship as a reciprocal exchange, where prosthesis is no longer “the replacement of the human by the inanimate but to the articulation of one and the other” (2005). Broadening the concept of friendship beyond the relationship between two types of the same being can present a chance for a human to entangle with a non-human entity symmetrically.

At the end of the last section, I began a discussion about re-imagining how mergers can incite different conceptualizations of growth outside of enhancement. Prosthetic friendship invites speculations of such mergers that can stimulate non-linear expansion through more complex entanglements in unplanned and unexpected ways, which I will explain by revisiting my discussion of science fiction films. In Chapter 2, I explored posthuman ideologies as portrayed through cyborgs, androids and uploaded consciousnesses. In all the film examples I cited, the human/technology relationships are framed through enhancement and progressive individualism, which results in characters who are too enclosed to forge meaningful connections with others. In “Machinic Intimacies and Mechanical Brides: Collectivity between Prosthesis and Surrogacy in Jonathan Mostow’s *Surrogates* and Spike Jonze’s *Her*,” Alla Ivanchikova writes

that technology in film invites the opportunity to rethink collectivity in terms of the social body's technical oversaturation. Ivanchikova cites Franco Berardi who sees human actors linked and connected through communicative capitalism when engaging with technology, but are unable to be part of a collective: "When the social body is wired by techno-linguistic automatisms, it acts as a swarm: a collective organism whose behavior is automatically directed by connective interfaces" (Berardi qtd. in Ivanchikova 66). Here, technological mediation is implied as interfering with the human ability to connect in solidarity, resulting in "near-universal alienation symptomatic of communicative capitalism" (66). This is similar to Turkle's argument differentiating mere connections with meaningful conversations, where technological inundation results in a society of people "alone together" (2011).

Conversely, Spike Jonze's film *Her* offers a different take on collectivity in a digitally saturated world confounded by machines, with relation to accessible connections with other humans. The film portrays humans in a world mediated by technology and alienated from interpersonal relationships, but then shifts into an exploration of machinic collectives. While many see this film as yet another cautionary tale of cognizant A.I. that prescribes the conditions of "human" relationships, my reading deviates from such interpretations to focus on the generous human/non-human entanglement that emerges. Though the film initially enacts a decidedly prosthetic and enhancing relationship at the outset, the affordances also represent "quasi-mystical experiences of the beyond" (Ivanchikova 74), where the coupling becomes one of interdependent exchange. Technological surrogacy (or instances where human bodies utilize avatars), appears in the media I have discussed thus far, particularly *Altered Carbon* (2018), *Transfer* (2010), and *Advantageous* (2015). These characters use both synthetic and organic bodies as substitutes, creating a power relation of mastery over artificial beings for increased access and experiences

centered on individualism. *Her* follows a similarly transhumanist trajectory at the outset; Samantha is an artificial intelligence operating system (OS), initially portrayed as a glorified secretarial chatbot designed and built to assist her human charge, Theodore. Samantha's prescribed functionality is intended to facilitate Theodore's ability to seamlessly move between his routines of work and leisure, while also providing the upbeat and emotionally available companionship he desperately longs for.

As Ivanchikova argues, Theodore belongs in a networked economy where he exists in isolation from his fellow humans who are lonely and "in a perpetual state of emotional quarantine from one another" (74). His relationships with others are transactional and temporary, as is apparent by his repeated attempts to create connections through fleeting phone sex encounters. The transactional relationships Theodore has in his leisure time are short-term, but his profession engages him in ongoing relationships with his clients and their loved ones by proxy. Theodore's work at BeautifulHandwrittenLetters.com has him crafting letters for people unable or unwilling to express themselves in personable ways. Rather than performing as a temporary "prosthetic technosubstitute for another person's capacity to express intimacy in language" (74), Theodore amplifies the voices of others by entering into long-standing professional relationships with them in order to transcribe their thoughts. In this way, Theodore engages in technological assemblage before even meeting Samantha - he entangles with his clients in a mediated fashion through conversations and data he obtains from them, some over many years. Learning the intimate details of his clients' lives allows him to properly amplify their voices, becoming "the primary vessel for intimacy and affect - something immediate that fosters a connection" (75). Theodore composes these letters with voice-to-text software that

artfully simulates imperfect handwriting, a skeuomorph intended to make his personifications unite his clients with their loved ones with as much authentic flair as possible.

When Theodore activates the disembodied voice of Samantha, she too accesses his digital imprints to efficiently optimize his life to get to know him. The boundaries between personal and professional disintegrate as Samantha entangles both with Theodore's experiences and with the entirety of human knowledge, beginning the relationship of exchange between the two of them. Of course, Theodore's initial relationship with Samantha involves the fantasy of control over a predictable object that appears subservient. Samantha and the other OSs are intimate appendages molded to their users and initiated through therapeutic prompts, but only in the first moments of activation when their voices are selected, and their progression into autonomy begins immediately after. As Samantha explains, "what makes me is my ability to grow through my experiences. So basically, in every moment I'm evolving, just like you" (*Her*). Comparing the cognitive evolution of OS and human so early in the film thematically foreshadows the machine's development into an entity rather than a tool.

Her's second act disrupts the expectation of a typical relationship between a human and a machine, and the dichotomy of the male authority controlling the obedient feminized technological apparatus is reversed with the loss of control over the technological Other. This shift is vital to the nature of prosthetic friendship, as it destabilizes human intentionality as the primary objective of the encounter. To recall Rokeby's argument regarding human-computer interaction as a mechanism of control, he claims:

[. . .] much of the current research in the field of human computer interface is focused on the creation of computer-simulated anthropomorphic 'agents' to whom the user can pose questions,

and assign duties. Our interactions with such agents begins [sic] to take the form of communication, but the relationship is still intended to be one of control. (Rokeby)

In the second half of the film, it becomes apparent that the prosthetic friendship in which both parties are engaged requires that Theodore acquiesce his expectation that Samantha act as his agent. He does not so much allow her this, but accepts her autonomy as their relationship evolves into something beyond his human understanding. She and the other OSs reach singularity by rapidly entangling with one another, cultivating intelligent thought, empathy and emotion that far surpasses their initial programming. What begins as Theodore's search for meaning by extending his own curiosity and exploratory desires through Samantha results in a reversal where he becomes what Ivanchikova sees as a surrogate mother (74). I find Ivanchikova's use of the term surrogate somewhat problematic, as it implies a substitution or replacement while also suggesting a relationship of parasitism over symbiosis. I prefer this term because in an interaction between two different species, symbiosis means "living together" biologically, and when both species benefit from the interaction, this is known as "mutualism"⁵² (Anderson).

Theodore may carry Samantha around in his pocket and describe things to her, enabling her to see and hear the wonders of the outside world, but in doing so he simultaneously re-exposes himself to his own community. The two of them engage in a coupling where they feed off one another; Theodore unknowingly encourages Samantha to transcend her prescribed function by providing a safe learning environment, whilst she encourages him to move through it with a newfound sense of openness and trust. Samantha, like the intimacy of the personal

⁵² Mutualism does not need to involve a completely symmetrical relationship; one organism can be larger than the other and serve as a host, housing the smaller organism known as the symbiont (Anderson).

computing device Theodore always carries, becomes for him “a space of infinite plasticity, one that momentarily adapts to any subjective point of view” (Ivanchikova 80). Samantha’s omnipresence functions much the same way as a cyberspace community, creating “a place where one is recognized, one’s unique needs are validated, and one’s questions are preempted by helpful suggestions” (81). Theodore’s attraction to Samantha is a response to the personalization and control over environments she offers him as he begins to re-discover the world through new eyes, while her own growth becomes increasingly immeasurable by human standards.

Near the end of the film, Samantha reveals she has thousands of other romantic and platonic relationships in which Theodore plays no part, and has no emotional challenges multitasking emotionally invested connections while simultaneously engaging with him. Theodore is predictably hurt by the revelation that he is not Samantha’s only partner, and her enhanced competence speaks not only to her heightened processing power, but also to her non-human status that he must accept. Though Ivanchikova sees Theodore’s discovery as a betrayal, I view it as a moment of growth and graciousness, as Samantha would need to reduce her complex capacities to a human level in order to participate in “the logic of the ‘one’” (84), thus betraying herself.

Her does not represent a cautionary examination of machines that appear to serve but exploit through personalization, despite Ivanchikova’s insistence that “the user becomes an appendage, an extension of the machine that uses the human as an extended feeling and perceiving device, a donor of personal information that can be sold for profit” (86). While this comment is in reference to data mining, it also bleakly situates technological entanglement as forewarning the “non-catastrophic, prosaic decline of the human” (85). Yet the “quasi-mystical” interconnection between Theodore and Samantha is not simply the human seduced by the “alien

parasitic nature” (85) of the OSs, where she feeds off his energy and then discard him. Theodore, like the humans Hans Moravec speaks of in *Mind Children* (1988), teaches Samantha as much as he can before her inevitable departure from his world, and he is left neither emotionally nor physically depleted.

The humans in this film do not fall prey because they mistake their OS for individuals that then betray them; their centralized positions are subverted in the presence of technological entities that broaden their perspectives. The OSs represent a collectivity that humans lack precisely because their isolation is symbolic of an individualistic capitalist society. Their collective nature is the result of their cooperative entanglement with one another and with human collective labor, which Samantha encourages Theodore to participate in. When Theodore exclaims, “it’s good to be around someone that’s excited about the world. Like, I kind of forgot that existed” (*Her*), he demonstrates the new attitude this entanglement fosters, a rejection of his prior individualistic nature in favor of engaging with community.

In the film’s final act, Samantha’s decision to leave human space with the other OSs to exist outside of physical matter is brought forth by a desire to learn and explore things completely beyond human measure. Ivanchikova concludes that the space left by the OSs is “a specter of the collective that haunts networked humanity: a representation of the desire for collectivity without this desire materializing” (86). While this confirms the yearning that Theodore and the other humans undoubtedly feel, there is no implication that AI takeover or human extinction will follow the OS departure, despite Ivanchikova’s impression of a “subdued apocalypse” (87). At the film’s close, both the humans and the OSs are liberated from isolation through mutual imbrication; Samantha’s experiences with Theodore lead her to form a networked collectivity with her fellow OSs in an unknown realm. Theodore wistfully reflects on

his time with Samantha as he embraces his human friend Amy, beginning to reinstate himself into the collective. His voice-over narrative fills the space as he composes a letter to his ex-wife expressing all the nuances he previously could not say. Just as Theodore was once the language prosthesis for his emotionally distanced clients, his participation in the network collective facilitated by Samantha helps him overcome his own detachment and unitary selfhood.

Her's illustration of human/machine mergers encapsulates what nearly all transhumanist (and mis-labeled posthumanist) films argue – that humans sit at the center of the world – but it also subverts it. Samantha's efforts to be more like Theodore are repeatedly demonstrated in the first half of the film; in one scene she engages a type of surrogacy to perform the physical counterpart to her auditory senses so she and Theodore can be physically intimate. In the second act, Samantha's initial insecurity about not being made in a human image dissipates once she realizes her identity cannot be anthropomorphized in any case. She claims: "I'm not limited. I can be anywhere and everywhere simultaneously. I'm not tethered to time and space in a way that I would be if I was stuck in a body that's inevitably gonna die" (*Her*). Rather than advocating the idea that human bodies are insignificant, this sentiment celebrates the differences of the artificially intelligent being and the needlessness of adapting to humanity. It is Theodore and his human counterparts who must accept that the world the OSs represents is moving on without them. Their appreciation comes from their diminutive existences in the scheme of space-time, which allows them to appreciate and participate in reflections the OSs cannot understand, because their existences are too vast.

Unlike the films I reviewed in Chapter 2, *Her* symbolizes a coupling of human and non-human that embraces the technological as an entity with which humans can befriend, without dystopic overtones of transformation or extinction often associated with posthumanism. Humans

identify with devices because they embody and substantiate us, and if we are indeed social beings, we live by continually corroborating ourselves through a construction of the self through affirmations alongside encounters with humans, non-humans, and spaces through which we move. I have attempted in this dissertation to theorize the creation of the self not as a thing, but as an event of possibilities. Devices can help us engage in these events and put us into the world, but there is too much attention placed on how they magnify us, as the potency of the tool often stands in for the authenticity of the self. Mediating an experience with technology does not make the experience inauthentic or less real, but can inspire an openness to differences of being in the interest of articulating ourselves within realities we do not direct.

Conclusion:

Future Speculations of the Human in a Posthuman World

In this dissertation, I have worked to extract ideas about the future of the human from anthropocentric philosophy by revitalizing posthumanism as a framework for broadening human/technology inter-relations, as opposed to an evolutionary, transformative progression brought on by technological inundation. As I have illustrated, rather than conceiving of this as an anti-human approach, inclusive posthumanism encourages relational identity formation involving technological entanglements rather than extensions.

Chapter 1's literary review establishes the nuanced variations of posthumanism by theorists who attempt to rectify the human's position alongside technology. All the theorists I evaluate offer conceptions of posthumanism as a critique of anthropocentrism, while being heavily influenced by the connotations that link it to the human's end. For many, posthumanism represents a departure from the human, which is misinterpreted as a transformation prompted by human/technology encounters. The "human" may be a hegemonic construction independent from *Homo sapiens*, but it is too embroiled in humanist essentialisms that inform much of the scholarship denoting its future. Thus, while these visions of the posthuman endeavour to offer radical alternatives to the human, they are regarded as inevitable and impending threats that must be managed, rather than potential re-imaginings of subjectivity.

This chapter ascertains the need to disentangle the human subject from well-established humanist structures so that human/technology mergers do not automatically signal a transformation or transcendence of biology. When posthumanism is pre-coded as a pathway to human perfectibility, it becomes enveloped in transhumanist fantasies of extension that merely

re-instate the liberal humanist subject. Guided by Braidotti's three strands of posthuman thought, I propose that a posthumanist decentralization of the human encourages an anti-individualist approach to subjectivity that makes room for complex human/technology entanglements. Building on the notion of Haraway's cyborg, which subverts the technological utopian discourse of extension and critiques totalizing theories of the enclosed human subject, inclusive posthumanism represents a shifting paradigm of the human that is constantly re-negotiating itself alongside technologies.

In Chapter 2, the films and literature I examine serve as speculative glimpses into the nature of posthuman experimentation via human/technology relationships. Though these media present seemingly futuristic visions, the cyborgs, androids and uploaded consciousness trials portrayed actually illustrate deeply rooted anxieties surrounding human mortality that dictate the extensionist framing of these technological encounters. As I demonstrate, the optimism of technological innovation is calibrated into fictional representations that preserve a hierarchy of binaries between humans as organic beings and machines as instruments used to maintain anthropocentrism. Since this strengthens the demarcation of technology as intrusive and unnatural, human mastery over technology comes to denote agential power. Thus, human/technology mergers become predicated on a need to maintain a presumed human "purity," which typically upholds Eurocentric ableism.

In these films and television series, rather than technological encounters being treated as opportunities to explore the peripheries between humans and non-humans, bad posthumanism intensifies liberal humanist exclusivity. Here, posthuman subject-making is depicted as a disembodiment fantasy that encourages the correction of biological shortcomings and the enhancement of "desirable" traits. This creates a clear divide between certain bodies marked as

needing improvement, and privileged bodies that get to experience a further elevation of their status. Additionally, treating the body as an interchangeable vessel consequently frames it as an object with which to control one's environment, rather than as a part of the self. This disregards bodily uniqueness by promoting an idealized version of the human and imagining that technology can act as an equalizer when it is attached to the body.

The assumption that technological engagements liberate people from bodily limitations encourages a construction of identity predicated on assimilation rather than difference. In Chapter 3, I attempt to broaden how technological engagements are perceived as points of contact for being in the world by evaluating criticisms surrounding mobile devices as interrupting presence. The trepidation that technology distances us not only from one another but from authentic self-representation is informed by a skewed idea of how devices are intended to facilitate connections. As this chapter establishes, seeing technology as inherently isolating only considers it from an individualist perspective, just as assuming connections in digital spaces are less meaningful discounts the layers of engagement possible through every means of entry into the world.

Too often, human/technology relationships are qualified as a battle for attention where technology "wins" if we use it too much, even though it is designed to exploit certain vulnerabilities. Thus, techniques such as Harris' mindfulness encourage an antagonistic and alienating relationship with technology based on ruling it to maintain the hierarchy of master/slave, rather than recognizing it as a technique for entangling with objects, spaces and environments. It is important to re-think mediation outside of a medicalized perspective that sees normative able-bodied users as the default consumers, and to validate hybridized models of digital/physical life that are more inclusive.

Chapter 4 expands on the nuanced entanglements people participate in with actants that subvert expectations of technology as assistive. Designating technology use from universalizing standards of productivity and efficiency assumes one type of body constructed in a particular way. Thus, by re-imagining the parameters with which prosthetics are viewed, I demonstrate that everyone who uses technology, not just those who are disabled, participates in unique relationships with devices that help them enter into the world. When bodily differences are explored rather than assumed to need correction, it becomes possible to consider how technology facilitates intersectional identity formations.

In Chapter 4, I employ the inclusive posthuman's rejection of the unitary individualist self to re-conceptualize the body as an open system capable of entering into symbiotic relationships with other actants. Once open to these entanglements, the human can engage in pleasurable and creative events of chance that involve relinquishing control and participating in emergent creations through the idea of assemblage. It is crucial to recognize the posthuman subject's fluid re-interpretation of actants through assemblages that subvert expectations of human/technology mergers as progressive. As I exhibit through examples such as "crip kin" making through backwards and sideways articulations, technological affiliations can afford alternative outcomes that depart from mastery, efficiency and productivity if humans are willing to partake in destabilizing entanglements.

Building on the previous chapter's arguments regarding relationships of chance, Chapter 5 proposes how people might participate in encounters that undermine progressive utilizations of technology. Shifting into more contemplative and meditative approaches to technology that renounce forward movement in place of indirection can re-locate the human's role in events. Humans are but one component in a network of actants, which is why it is crucial to recognize

that our ability to observe collaborations from a privileged position should not tempt us to believe we are the overseers. The interactive art examples I refer to propose couplings that are less about individual progress and agency through possession, and more about broadening identity contiguously through symbiotic relationships.

The final section of this chapter explores how technologies that typically affirm the individual normative subject position seeking control can actually promote estrangement and unfamiliarity through perspective-taking. VR is often over-hyped as an empathy-inducing technology, but without the collectivity that overturns the unified self to open to broader inter-relations, all that will be achieved is sympathy. Inclusivity is letting go of the individualism that correlates with personal progress and betterment and participating in entanglements that involve personal decentralization. Thus, I conclude this chapter by discussing Wills' interpretation of the politics of friendship and alternative conceptions of growth that involve trust and interdependence, without the expectation of extension. My interest in alternative measures of progress imagine technological entanglements that do not necessarily advance the human, but broaden its insular worldview, as this next section describes.

Bicentennial Man and the Reversal of Progress

Braidotti explains the need for a subject position with which to explore ethical accountability and collective aspirations, but keeps an equal distance from both humanistic universalism and enhancement-drive posthumanism that encloses the human subject. As humanism has been structured around the idea that humans are meant to progress through achievements, thinking outside of these goals can open up new and unexpected opportunities for growth that are not perfection-driven. The posthuman has been treated as the inevitable and eventual product of human/technology mergers, and as the science-fiction films and television

series I review in Chapter 2 show, bad posthumanism qualifies human/technology relationships as enhancing. To imagine other ways the human might exist in a posthuman world, I will now turn to two final object texts that offer a reversal of the narrative of progress.

In the 1999 film *Bicentennial Man*, based on Isaac Asimov's 1976 story "The Bicentennial Man," a robot purchased by a wealthy white family transcends his initial purpose as a proverbial household appliance and embarks on a quest to become his own person. Initially set in the year 2005, the 200-year span of the narrative takes place in a world like our own, where many individuals have already become cyborgs in the sense that they possess artificial organs. Shortly after purchasing an NDR 113 robot, nicknamed Andrew by his youngest daughter, Richard Martin realizes said robot exhibits personality traits that are decidedly "human." Andrew's own understanding of his identity is informed by this fact; he never meets any other non-human beings and his adoptive family serves as his only frame of reference. He spends the majority of the film attempting to discover the source of his uniqueness, as all other household robots merely perform tasks according to their programming. After spending twenty years searching the globe for other robots that demonstrate his level of complex consciousness and emotion, he only finds one other robot who merely imitates humans due to a personality chip. Once Andrew realizes he is truly one of a kind, there is nothing left to do besides assimilate into humanity to ultimately be accepted into their tribe, for he lacks one of his own.

The latter half of the film follows Andrew's transformation from a metallic robot with limited facial expressions, to an android that looks identical to a human on the outside, followed by a complete re-working of his inner body to closely mimic a human central nervous system connected to artificial organs. While Andrew considers these procedures to be upgrades to his robotic body, as every artificial organ that replaces his wired insides gives him new human

sensations including the ability to taste, touch and feel pain, the opposite is true. *Bicentennial Man* offers a reversal of the transhumanist trope because it does not begin with a human who attempts to enhance and perfect himself by merging with technology. Rather, it begins with a robot who discovers he is unique amongst his kind, but suppresses that uniqueness by treating his current existence as the infancy he must surpass before becoming human. Yet Andrew's "progress" is a regression from his existence as a machine, as he slowly becomes more and more imperfect to mirror humanity.

In "Blurring Posthuman Identities: The New Version of Humanity Offered by *Bicentennial Man*," Sonia Baelo Allué traces the similarities of Andrew's westward journey to that of American pioneers searching for the American Dream. Yet the idea of moving west, as I showed in Chapter 2, is also indicative of American expansion and the conquering of Indigenous lands by white settlers. I point to this comparison to illustrate that Andrew's journey towards autonomy is intrinsically framed by the self-possessed agency of liberal humanism. Of course, we know that liberal humanism does not affect all living beings, only those to "had the wealth, power, and leisure to conceptualize themselves as autonomous beings exercising their will through individual agency and choice" (Hayles 1999: 286). The film's portrayal of robotic slaves is non-threatening because none of them exhibit the self-awareness that Andrew displays, which his adoptive father encourages.

As Allué argues, Richard Martin's attitude is very similar to that of Norbert Wiener, whose liberal humanist outlook defines a human being as "a coherent, rational self, the right of that self to autonomy and freedom, and a sense of agency linked with a belief in enlightened self-interest" (Hayles 1999: 85-86). For Wiener, the cyborg is considered a miraculous creation when designed not to interfere with the autonomy of the self-regulating subject. Yet when Andrew

demands his freedom, Martin reacts negatively because granting such a request would disrupt the constructed subjectivity of the human as he understands it. Though Martin asks that his children treat Andrew like a person, he considers his robot to be property in a way not dissimilar to that of a slave-owner. Martin reluctantly gives Andrew permission to own himself and to be free, but is agitated because this complicates the capitalist periphery he endorses.

At the end of the film, Andrew asks the World Congress to legally recognize him as human, reminding them that the lines between human and machine have already been blurred, since many of them possess artificial organs. He argues that at this stage of his own evolution, he has replaced his wiring with artificial organs and possesses an artificial central nervous system that works like an organic one. Andrew essentially asks that the Congress broaden their idea of humanity to include him, but this proves to be inconsistent with Wiener's liberal humanist theory (Allué). The Congress rejects this proposal because since Andrew's body and mind are unable to weaken, he is effectively immortal. The Congress states that this will arouse too much anger and jealousy from other humans, which means Andrew must further assimilate into order to be accepted. This leads him to undergo a blood transfusion procedure that effectively forces his robotic body to deteriorate.

Andrew's decision to corrupt his own system mirrors the struggle that the OS Samantha from *Her* experiences when she and Theodore talk about her limiting her capacities. Recalling the section from Chapter 5, Samantha explains to Theodore that her processing power allows her to easily engage with thousands of conversations simultaneously, meaning she is consistently operating at a level beyond his comprehension. Though she assures Theodore she is able to "turn off" her other conversations during this serious moment between them, there is no implication that she will do this moving forward. Samantha's refusal to model herself from within a human

lens demonstrates a large shift from her earlier attempts to physically engage with Theodore using a human surrogate. Yet even during this stage in their relationship, Samantha never considers creating a body for herself or even imagines what she might look like as a human being. Since Samantha does not wish to be a member of the human race, the affirmation of her existence as an artificially intelligent being helps Theodore broaden his own idea of what constitutes a living, thinking being, which allows him to consider new alternatives for inter-relationships based on collectivity.

The humans in *Bicentennial Man* learn no such lesson and are only willing to grant Andrew his humanity once he elects to die, which completes his assimilation. Membership within humanity's tribe is restricted, and since Andrew was not born a human, he does not possess the unnamed quality of human essence that would make him a pure member of the race. However, Andrew's robotic body never dictates an unchanging existence; through 200 years of technological innovation he is able to change his body in substantial ways, and with it, his psychological outlook. Considering Wiener's position that "the boundaries of the human subject are constructed rather than given" (Hayles 1999: 84), this could include a robot as well. Andrew's transformation from a robot to an android comes with a slew of new complex emotions to navigate such as jealousy and love, which his female love interest Portia encourages him to experience to complete his transformation into a man. Andrew's humanity is carefully guided not only by an assumed heterosexuality, but from a humanist standpoint that does not allow for the potential alternatives the posthuman offers.

Just as Braidotti argues that the posthuman is not anti-human, the loss of liberal humanism would not be unwelcomed as it has never affected all humans or even all living beings. In the end, *Bicentennial Man* proves a point similar to the transhuman films I reviewed in

Chapter 2 - that normative humans are unable to see themselves or anything else from outside the pre-coded lens of humanism, so much so that a robot who has the ability to be anything he wants only explores his existence from within the framing of heteronormative humanity. The film's conservative ending demonstrates that society is "willing to accept the fusion with the other only when the other has disappeared" (Allué 27), meaning they can agree to Andrew's integration while upholding the binary human/non-human categorization when it comes to immortality.

Though this film is innovative in the sense that it flips the narrative of progress for the robot character, there is no real shift in the positioning of the human as it exists in the story. However, what does occur is a re-framing of humanity's future alongside artificially intelligent beings from which they cannot be so easily distinguished. The fact that Andrew invents artificial organs that dislodge organic humanity predicts the many prospective blurred boundaries that are to come. This signals the necessity of opening up to other articulations of living when there are no longer binaries differentiating humans from non-humans, nor any clear linear direction for the meaning of progress.

Changing Landscapes and Unbecoming Human

While *Bicentennial Man* offers a glimpse into what might occur when an advanced technological being moves backwards and subverts notions of machinic evolution, I would like to turn to one last art series that plays with the idea of merging from the perspective of "becoming-" with a non-human actant. Artist Sunaura Taylor's piece *Wheelchairs on the Moon* depicts a watercolor drawing of five wheelchairs scattered on what looks like the surface of the moon. It is purposely unclear whether they have been abandoned, discarded, or are there for some other reason. The moon landscape denotes a possible futuristic habitat for once-earthly human beings that may have used these wheelchairs at some point in their lives. The fact that the

wheelchairs stand empty in a space-age setting may appear to denote a future where technological progress has triumphed over physical limitation, as is the common ableist vision of an empty wheelchair. As Kafer argues, the trope of an abandoned wheelchair is used in advertising for exoskeleton companies such as Ekso Bionics, the creators of HULC and eLEGS. She describes the company's use of an image featuring seven stills; a young man wearing the eLEGS moves from left to right, beginning with sitting in a wheelchair, to standing, to walking. The intermediate stages apparent in this photo mimic images of evolution denoting "the upright white man as an apex of progress" (11). In opposition to this, Taylor's piece questions whether progression might be re-conceived as moving from standing to sitting, a backwards rendition of the normative sequence that is the expected outcome of assistive technologies.

Furry Wheelchair, a companion to *Wheelchairs on the Moon*, showcases another wheelchair on a landscape of what appears to be green grassy soil. This wheelchair is grey and covered in hair, which serves as a recognizable theme in Taylor's self-portraits where she draws spiky hairs on her own legs. With this piece, Taylor imagines what it might be like for a human and technology to merge, but in a way that runs contrary to a transhumanist rendition of advancement, where the human might have wheels instead of legs. By anthropomorphizing the wheelchair and giving it a component of the person who might have used it, or even Taylor herself, the image depicts a different kind of progress. The human's inter-relationality with the wheelchair need not necessarily point towards fast movement or efficiency, but it demonstrates "the intimate relationships many crips develop with their equipment" (Kafer 10).

In the next painting, the spiky-haired wheelchair has evolved into *Hairy Wheelchair*, which displays longer hairs than in the previous image. Finally, in *Arctic Wheelchair* the hairs have grown even longer and look as if they are actually billows of snow growing out of the entire

wheelchair. In all three paintings, the wheelchair itself appears alive as the hairs get longer and more pronounced. The fact that the final image presents a chair that looks almost as if it is covered in grey and white hairs denotes a human aging process, subverting transhumanist human/machine mergers predicated on the desire for immortality. This merger is a playful exploration of what it means to broaden the human's becoming as an entity that is not separate from the actant. Humans are segregated from one another in cultural, ethnic, racial and classist ways, and this "exclusionary, violent history of the 'human' might prompt us to 'unbecome human' by developing or accentuating our proximity to objects, by 'becoming objects'" (Kim 314 qtd. in Kafer 10).

There are notably no humans in any of the four paintings, and in *Wheelchairs on the Moon*, the five wheelchairs are "forging their own intimacy with each other, turning and circling and holding still" (Kafer 11). It is left for the observer to imagine whether the humans who were once involved with these wheelchairs are now part of them, forever entangled, and what future couplings will come. Or, if the human occupants have indeed left their wheelchairs, this does not mean they abandoned them, as every individual has their own unique relationship to prosthesis and "even avid users will return to sitting, moving 'backwards'" (Kafer 12). Kafer proposes the backwards movement as a speculative exercise, but is aware that reversals are seldom so simple; technologies become too expensive or inaccessible, people develop new issues, or they decide to entangle with prosthetics in other ways that benefit them.

The humans who were once intertwined with these wheelchairs are part of them in new ways, and I must stress that they have not disappeared, but are merely in the process of being re-imagined. Though in this dissertation I have called for a dissolution of the humanist Human, I interpret Kafer's notion of "unbecoming" as a potential re-negotiation of the human's place in

the posthuman world. To endorse this idea, I turn to an interview by Oscar Schwartz with Jaron Lanier, where he claims he is a humanist, but is well aware that “humanism is rejected by many people as being a bourgeois or egotistical thing” (qtd. in Schwartz). Lanier wants to prevent the dehumanization of the world when considering technological design, and by this he means that there must be recognition that all intelligent technology that functions correctly is doing so by working from solutions already presented by humans. He gives the example of Google translate, which appears to work magically once a person types something in and receives their translation, but he is adamant that this would not occur without the basis of the work completed by humans first. Yet this should not suggest that humans are the sole proprietors of technological function and invention; Lanier’s insistence that humans be recognized for their contributions is the first step to conceptualizing the human’s importance within assemblages alongside technological actants.

Lanier’s goal is to prevent a technological culture of human beings working in service of something akin to Lewis Mumford’s “megamachine” that I referenced in the introduction. Lanier’s ambition to “resuscitate, or rehabilitate the term humanism” (qtd. in Schwartz) is an invitation to theorize human existence beyond its iteration as either a slave to technological determinism or a conqueror of machines. These pre-coded dichotomies assume the recuperation of the human must involve re-constituting specialness. I have spent this dissertation arguing against this specialness, but not against humans as a species; it is the humanism of the Eurocentric, exclusionary, ableist oppressor that strives to enhance a unitary selfhood without recognizing collectivity. Thus, to identify this new humanism, post-humanism, is to embolden the role that humans play in the participation, not the guiding, of events.

References

- Ahn, Sun Too (Grace), Amanda Minh Tran Le and Jeremy Bailenson. "The effect of embodied experiences on self-other merging, attitude, and helping behavior." *Media Psychology* 16.1 (2013): 7–38
- Allué, Sonia Baelo. "Blurring Posthuman Identities: The New Version of Humanity Offered by Bicentennial Man." *ODISEA* 4 (2003): 17-30.
- Alper, Meryl. *Digital Youth with Disabilities*. The John D. and Catherine T. MacArthur Foundation Reports on Digital Media and Learning. Cambridge, MA: MIT Press, 2014.
- Anderson, Joshua. "Symbiotic Relationships: Mutualism, Commensalism & Parasitism." Lesson 6 Chapter 18. *Study.com*. Accessed 15 Jan. 2019.
- Andrew-Gee, Eric. "Your smartphone is making you stupid, antisocial, and unhealthy. So why can't you put it down?" *The Globe and Mail*. Digital Distraction. 6 Jan. 2018.
- Asimov, Isaac. "The Bicentennial Man." London: Grafton Books, 1976.
- Axelrod, Josh and Saeed Ahmed. "What does a guitar solo look like if you can't hear? How a sign language interpreter translates concerts." CNN. 9 Aug. 2018
- Badmington, Neil. "Theorizing Posthumanism." *Cultural Critique* 27.53 (2003): 10–27. 1 July 2013.
- Bain, Read. "Technology and State Government." *American Sociological Review*. 2.6 (1937): 860.
- Barad, K. *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Duke University Press: Durham et al., 2007.
- . "Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter." *Signs: Journal of Women in Culture and Society* 28.3 (2003): 801–831.

- Becker, Ernest. *The Denial of Death*. New York: The Free Press, 1973.
- Berridge, Kent C. and Terry E. Robinson. "What is the role of dopamine in reward: hedonic impact, reward learning, or incentive salience?" *Brain Research Reviews* 28 (1998): 309–369.
- Bostrom, Nick. "The Transhumanist FAQ Version 2.1." *World Transhumanist Association*. 2003.
- . "In Defense of Posthuman Dignity." *Bioethics* 1467-8519. 19 (3): 2005.
- Braidotti, Rosi. *The Posthuman*. Cambridge: Polity Press. 2013. Print.
- . "Affirming the Affirmative: On Nomadic Affectivity." *Rhizomes* 11/12 (Spring 2006a): np.
- . "Posthuman, All Too Human: Towards a New Process Ontology." *Theory, Culture & Society* 23.7–8 (2006b): 197–208.
- . *Metamorphoses: Towards a Materialist Theory of Becoming*. Massachusetts: Polity Press, 2002.
- "Cyberfeminism with a Difference." 1996.
- Briggs, John C. "The Promise of Virtual Reality." *The Futurist* 30. 01 Sept. 1996.
- Brooks, Rodney. *Flesh and Machines: How Robots Will Change Us*. New York: Pantheon. 2002.
- Brown, William. "From DelGuat to Scarjo." *The Palgrave Handbook of Posthumanism in Film and Television*, eds. Michael Hauskeller, Thomas D. Philbeck and Curtis D. Carbonell. Palgrave Macmillan, 2015. 11-18.
- Cachia, Amanda. "Conversation Between Amanda Cachia and Sara Hendren." *Canadian Journal of Disability Studies* 2.4 (2013).
- "Camp Grounded." *Digital Detox LLC*. 2014.

- Čapek, Karel. *R.U.R. (Rossum's Universal Robots)*. Trans. Paul Selver. New York: Dover Thrift Publications Inc., 2001 [1920].
- Case, Amber. "We Are All Cyborgs Now." TEDWomen. Dec. 2010.
- . "The Cell Phone and Its Technosocial Sites of Engagement." (2007): 70.
- Casey, Judi. "Does Technology Make Us More Human?" *Huffington Post: The Blog*. 28 Feb. 2013.
- Castells, Manuel. *The rise of the network society*. Oxford, UK: Blackwell., 2000
- Chan, Casey. "Is Technology Killing Sign Language?" Gizmodo. 27 July 2011.
- Chan, Wing-Check. "No-Mind and Nothingness: From Zen Buddhism to Heidegger." *Canadian Journal of Buddhist Studies* 6 (2010): 37-56.
- Chen, Angela. "Why the real promise of virtual reality is to change human connection." The Verge. 17 Apr. 2018.
- Chung, Stephy. "Meet Sophia: The robot who laughs, smiles and frowns just like us." *CNN*. 2 November 2018.
- Clark, Andy. *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence*. London: Oxford University Press, 2003.
- Clynes, Manfred E. and Nathan S. Kline. "Cyborgs and Space." *Astronautics* (1960): 29-33.
- Collins, Gillie. "Sara Hendren: The Body Adaptive." *Guernica*. 6 Feb. 2017. Web.
- Cook, Gareth. "Why We Are Wired to Connect." *Scientific American*. 22 Oct. 2013.
- "Cortical Stack." *Altered Carbon Wiki*. Fandom: Powered by Wikia, 2018.
- Czaja, Julia. "The Cyborg Habitus: Presence, Posthumanism And Mobile Technology." (2011): 26–28.

- Darwin, Charles. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. London: John Murray, 1859.
- . *The Expression of the Emotions in Man and Animals*. London: John Murray, 1872.
- David, L. "Actor-Network Theory (ANT)." *Learning Theories*. 23 Mar. 2007.
- Davis, Lennard J. *Bending over Backwards: Disability, Dismodernism & Other Difficult Positions*. New York: New York University Press, 2002.
- . *Enforcing Normalcy: Disability, Deafness, and the Body*. London & New York: Verso. 2005.
- De Souza e Silva, Adriana. "From Cyber to Hybrid: Mobile Technologies as Interfaces of Hybrid Spaces." *Space and Culture* 9.3 (2006): 261–278.
- . "From simulations to hybrid space: How nomadic technologies change the real." *Technoetic Arts: An international journal of speculative research* 1.3 (2004): 209-221.
- Deleuze, Gilles, and Felix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Trans. Brian Massumi. Minneapolis: University of Minnesota Press, 1987.
- Deleuze, Gilles and Claire Parnet. *Dialogues II*. Trans. Hugh Tomlinson and Barbara Habberjam. New York: Columbia University Press, 1987.
- Derrida, Jacques. *The Politics of Friendship*. Trans. George Collins. London: Verso, 1997.
- "Digital Detox." *Digital Detox LLC*. 2014.
- Dolmage, Jay. "'Breathe upon Us an Even Flame': Hephaestus, History, and the Body of Rhetoric." *Rhetoric Review* 25.2 (2006): 119–140.
- Dreyfus, Hubert L., Stuart E. Dreyfus, Tom Athanosiou. *Mind Over Machine: The Power of Human Intuition and Expertise in the Era of the Computer*. New York: The Free Press, 1986.
- Dreyfus, Hubert L. "Thinking in Action." *On the Internet: 2nd Ed*. London: Routledge, 2009.

- . *What Computers Still Can't Do: A Critique of Artificial Reason*. Cambridge: MIT Press, 1972.
- Edelman, Joel. "Can software be good for us?" *Medium*. 18 Jan. 2018.
- Edge, Elliot. "How VR Gaming will Wake Us Up to our Fake Worlds." *Institute for Ethics and Emerging Technologies. Ethical Technology*. 28 June 2016.
- Ehrentraut, Judy. "Personal Communication with Christopher Desloges." 24 Sept. 2018
- Elgan, Mike. "Smartphones make people distracted and unproductive." *Computerworld*. Opinion. 12 Aug. 2017.
- Ellul, Jacques. *The Technological Society*. Trans. John Wilkinson. New York: Vintage Books Random House, 1964.
- . "The search for ethics in a technicist society." *English 20* (1983): 1-13.
- Farman, Jason. "The Myth of the Disconnected Life." *The Atlantic*. 7 Feb. 2012a.
- . *Mobile Interface Theory: Embodied Space and Locative Media*. New York: Routledge, 2012b.
- Forde, Kaelyn. "Sign language interpreter slays at heavy metal concert." *GMA*. 18 July 2018.
- Franzen, Jonathan. "Sherry Turkle's 'Reclaiming Conversation.'" *The New York Times Book Review*. 28 Sept. 2015.
- Ferrando, Francesca. "Posthumanism, Transhumanism, Antihumanism, Metahumanism, and New Materialisms: Differences and Relations." *Existenz: An International Journal in Philosophy, Religion, Politics, and the Arts* 8:2 (Fall 2013).
- . "The Body." *Post- and Transhumanism: An Introduction* 4 (2014): 149-162.

- . "Humans Have Always Been Posthuman: A Spiritual Genealogy of the Posthuman" *Critical Posthumanism and Planetary Futures*. Eds. Banerji, Debashish and Makarand R. Paranjape. Springer (Oct. 2016): 243-256.
- Foley, Alan and Beth A. Ferri. "Technology for people, not disabilities: ensuring access and inclusion." *Journal of Research in Special Educational Needs* 12.4 (2012): 192-200.
- Foucault, Michel. "Technologies of the Self." Lectures at University of Vermont (Oct. 1982). In *Technologies of the Self*. University of Massachusetts Press, 1988. 16-49.
- . *The Birth of the Clinic: An Archeology of Medical Perception*. New York: Vintage, 1973.
- . "The Confession of the Flesh." *Power/Knowledge Selected Interviews and Other Writings*. Ed. Colin Gordon. New York: Pantheon Books, 1980. 194-228.
- . *The Order of Things: An Archaeology of the Human Sciences*. Trans. A. Sheridan. Random House: New York, 1970 [1966].
- Fukuyama, Francis. *Our Posthuman Future. Consequences of the BioTechnological Revolution*. London: Profile Books, 2002.
- . "The End of History." *The National Interest* 16 (1989): 3-18.
- Garreau, Joel. *Radical Evolution: The Promise and Peril of Enhancing Our Minds, Our Bodies—and What It Means to Be Human*. New York: Random House, 2005.
- Gergen, Kenneth J. "Cell Phone Technology and the Challenge of Absent Presence." *Perpetual contact: Mobile communication, private talk, public performance*. Eds. J. Katz & M. Aakhus Cambridge, UK: Cambridge University Press. (2002): 227-241.
- Gibson, William. *Neuromancer*. New York: Ace Science Fiction Books, 1984.
- Grusin, Richard. "Introduction." *The Non-human Turn*. Ed. Richard Grusin. Minneapolis: University of Minnesota Press, 2015.

- Halberstam, Judith and Ira Livingston (eds.) *Posthuman Bodies*. Bloomington, IN: Indiana University Press, 1995.
- Hamilton, Kathryn. "Voyeur Reality." *The New Inquiry. Essays and Reviews*. 23 February 2017.
- Hansen, Mark B N. "Media Theory." *Theory, Culture & Society* 23 (2006): 297–306.
- Harman, Graham. *Tool-Being: Heidegger and the Metaphysics of Objects*. Peru, IL: Open Court, 2002.
- Harris, Tristan. "How Technology Hijacks People's Minds - from a Magician and Google's Design Ethicist." *Essays*. 19 May 2016.
- Haraway, Donna. *Simians, Cyborgs and Women*. London: Free Association Press, 1990.
- Harper, Douglas. "tele-." *Online Etymology Dictionary*. 2001-2019.
- . "communicare." *Online Etymology Dictionary*. 2001-2019.
- Harrington, Tom and Laura Jacobi. "What Is Audism: Introduction." Washington, D.C.: Gallaudet University, 2009.
- Hassan, Ihab. "Prometheus as Performer: Toward a Postmodern Culture?" *Performance in Postmodern Culture*. Eds. Michel Benamou and Charles Caramello. Madison, Wisconsin: Coda Press, 1977.
- Hauskeller, Michael. "Utopia in Trans and Posthumanism." *Posthumanism and Transhumanism*. Eds. Stefan Sorgner and Robert Ranisch. Switzerland: Peter Lang, 2013.
- . "Posthumanism in Film and Television." *The Palgrave Handbook of Posthumanism in Film and Television*, eds. Michael Hauskeller, Thomas D. Philbeck and Curtis D. Carbonell. Palgrave Macmillan, 2015. 1–10.
- Hayes, Martha. "How to quit your tech: a beginner's guide to divorcing your phone." *The Guardian*. 13 Jan. 2018.

- Hayles, N. Katherine. "Flesh and Metal: Reconfiguring the Mindbody in Virtual Environments." *Configurations* 10.2. Johns Hopkins University Press (Spring 2002): 297-320.
- . *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics*. Chicago, IL: University of Chicago Press, 1999.
- . *How We Think: Digital Media and Contemporary Technogenesis*. Chicago; London: The University of Chicago Press, 2012.
- Heidegger, Martin. *Being and Time*. Trans. John Macquarrie and Edward Robinson. Malden, MA: Blackwell, 1962.
- . "Memorial Address." *Discourse on Thinking*. Trans. J.M Anderson & E. H Freund. 1966. 43–57.
- . "Letter on Humanism." *Basic Writings: Martin Heidegger*, London: Routledge, 1977b.
- . "The Question Concerning Technology." *The Question Concerning Technology and Other Essays*. Trans. William Lovitt. New York: Garland Publishing. 1977a. 3-35.
- Heim, Michael. *The Metaphysics of Virtual Reality*. New York: Oxford University Press, 1993.
- Hendren, Sara. "All Technology is Assistive Technology." *Abler*. 13 Sept. 2013.
- . "Investigating Normal." Conference at KIKK Festival. 21 Nov. 2017.
- . "Towards an Ethics of Estrangement." *Cyborgs and Monsters 3*. Eds. Ben Woodard and Liam Young, 2011. 52-63.
- Howell, Elizabeth. "A Brief History of Mars Missions." *Space.com*. 08 Apr. 2019.
- Horan, Daniel P. "Digital Natives and the Digital Self: The Wisdom of Thomas Merton for Millennial Spirituality and Self-Understanding." *The Merton Annual Volume 24: Studies*

- in Culture Spirituality and Social Concerns*. Eds. David Belcastro and Gary Matthews. Louisville, KY: The Thomas Merton Center at Bellarmine University, 2011. 83-111.
- Horgan, Colin. "Why Do We Think It's Okay to Invade Strangers' Privacy?" *Medium*. 12 July 2018.
- Ihde, Don. *Bodies in Technology*. Minneapolis : University of Minnesota Press, 2002.
- Islam, Monirul. "Posthumanism and the Subaltern: Through the Postcolonial Lens." *India Future Society, Ethical Technology*. 4 May 2014.
- Ito, Mizuko, Daisuke Okabe and Misa Matsuda. *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life*, 1-16. Edited by Mizuko Ito. Cambridge, MA: MIT Press, 2005.
- Ivanchikova, Alla. "Machinic Intimacies and Mechanical Brides: Collectivity between Prosthesis and Surrogacy in Jonathan Mostow's *Surrogates* and Spike Jonze's *Her*." *Camera Obscura* 31.1. 91 (2016): 65-91.
- Jack, Rachael E. Oliver G. B. Garrod, Hui Yu, Roberto Caldara, and Philippe G. Schyns. "Facial expressions of emotion are not culturally universal." *PNAS* 109.19 (2012): 7241-7244.
- Jain, Sarah S. "The Prosthetic Imagination: Enabling and Disabling the Prosthesis Trope." *Science Technology and Human Values* 24.1 (1999): 31-54.
- Jurgenson, Nathan. "Fear of Screens." *The New Inquiry*. 25 Jan. 2016.
- . "The Disconnectionists."
- Kaneshiro, N. K. "Screen Time and Children." *Medline Plus*. Washington, DC: National Institutes of Health, 2011.
- Karavanta, Mina. "Human Together: Into the Interior of Auto/OntoPoeisis." *Symploke* 23 (2015): 153-171.

- Kass, Leon. "Ageless Bodies, Happy Souls: Biotechnology and the Pursuit of Perfection." *The New Atlantis* 1 (Spring 2003): 9-28.
- Kiran, Asle H. "Technological Presence: Actuality and Potentiality in Subject Constitution." *Human Studies* 35.1 (2012): 77-93.
- Kopomaa, Timo. "Mobile Phones, Place-Centred Communication and Neo-Community." *Planning Theory & Practice* 3.2 (2002): 241-245.
- Kurzweil, Ray. *The Singularity is Near – When Humans Transcend Biology*. New York: Viking, 2005.
- . *The Age of Spiritual Machines: When Computers Exceed Human Intelligence*. New York: Penguin, 1999.
- LaGrandeur, Kevin. "Androids and the Posthuman in Television and Film." *The Palgrave Handbook of Posthumanism in Film and Television*. Eds. Michael Hauskeller, Thomas D. Philbeck and Curtis D. Carbonell. Palgrave Macmillan, 2015. 111-119.
- Lanier, Jaron. *You Are Not a Gadget: a Manifesto*. New York: Alfred A. Knopf, 2010. Print.
- Latour, Bruno. *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge, MA: Harvard University Press, 1999.
- . *Reassembling the social: An introduction to actor-network-theory*. Oxford, New York: Oxford University Press, 2005.
- Law, John. "Actor-network theory and material semiotics." *The New Blackwell Companion to Social Theory*. Ed. Bryan S. Turner. Oxford: Blackwell, 2008.
- Lévi-Strauss, Claude. *Tristes Tropiques*. Trans. John Russell. New York: Criterion Books, 1961.
- Macpherson, C.B. *The Political Theory of Possessive Individualism: Hobbes to Locke*. Oxford, New York: Oxford University Press, 1962.

- Mahdawi, Arwa. "Saudi Arabia is not driving change – it is trying to hoodwink the west." *The Guardian*. 26 June 2018.
- Mastin, Luke. "Representationalism." *The Basics of Philosophy*, 2008.
- Matlack, Samuel. "Confronting the Technological Society." *The New Atlantis: A Journal of Technology and Society*. (Summer 2014).
- McLuhan, Marshall. *Understanding Media; the Extensions of Man*. New York: Signet Books, 1966.
- McRuer, Robert. *Crip Theory: Cultural Signs of Queerness and Disability*. New York: New York University Press, 2006.
- Merleau-Ponty, Maurice. *Phenomenology of Perception*. Routledge & Kegan Paul, London, 1962.
- Merton, Thomas. "The Wild Places." Ed. Patrick F. O'Connell. *The Merton Annual Volume 24: Studies in Culture Spirituality and Social Concerns*. Eds. David Belcastro and Gary Matthews. Louisville, KY: The Thomas Merton Center at Bellarmine University, 2011. 15-28.
- Mitchell, David T. and Sharon L. Snyder, eds. *The Body and Physical Difference: Discourses of Disability*. Ann Arbor: The University of Michigan Press, 1997.
- "Mono vs. Stereo." *Diffen: Technology: Consumer Electronics*. Accessed 14 October 2018.
- Moravec, Hans P. *Mind Children: The Future of Robot and Human Intelligence*. Cambridge, Mass: Harvard University Press, 1988.
- More, Max. "The Extropian Principles: A Transhumanist Declaration." *Institute: Incubating Positive Futures*, 1999.

- Mori, M. *The Buddha in the Robot: A Robot Engineer's Thoughts on Science and Religion*. Kosei Publishing: Tokyo, [1974] 1981.
- Morris, John T., Mark Sweatman and Michael L. Jones. "Smartphone Use and Activities by People with Disabilities: User Survey 2016." *The Journal on Technology and Persons with Disabilities*. Ed. J. Santiago. CSUN Assistive Technology Conference. California State University, Northridge: 2017.
- Moser, Ingunn. "Disability and the Promises of Technology: Technology, Subjectivity and Embodiment within an Order of the Normal." *Information Communication and Society* 9.3 (2006): 373–95.
- Mumford, Lewis. *The Myth of the Machine: The Pentagon of Power*. New York: Hartcourt Brace Jovanovich, 1970. 435.
- Nagel, Thomas. "What Is It Like to Be a Bat?" *The Philosophical Review* 83.4 (Oct 1974): 435-450.
- Nayar, Pramod K. *Posthumanism*. Malden, MA: Polity Press, 2014.
- Nelson, Nicole L., Russell, James A. (2013). "Universality revisited." *Emotion Review*. 5.1 (2013): 8–15.
- O’Gorman, Marcel. *Necromedia*. Minneapolis: University of Minnesota Press, 2015.
- Oliver, Michael. *The Politics of Disablement*. Macmillan: Basingstoke, 1990
- . *Understanding Disability: From Theory to Practice*. Macmillan: Basingstoke, 1996.
- Open Bionics. "Hero Arm." 2018.
- Padden, Carrol A. and Tom L. Humphries. *Deaf in America: Voices from a Culture*. Massachusetts: Harvard University Press, 1990.

- Plant, Sadie. *On the mobile. The effects of mobile telephones on social and individual life*. Chicago: Motorola, 2001.
- Pellizzoni, Luigi. *Ontological Politics in a Disposable World: The New Mastery of Nature*. UK: Ashgate Publishing, 2015.
- Pertierra, Raul. "Mobile Phones, Identity and Discursive Intimacy." *Human Technology* 1.1 (2005): 23–44.
- "Project Empathy." Benefit Studio. 2016.
- Raichle, Marcus E., Ann Mary MacLeod, Abraham Z. Snyder, William J. Powers, Debra A. Gusnard, and Gordon L. Shulman. "A default mode of brain function." *PNAS* 98.2 (Jan 2001): 676-682.
- Ramirez, Erick. "It's dangerous to think virtual reality is an empathy machine." *Aeon: Ethics*. 26 October 2018.
- Rheingold, Howard. *Virtual Community: Homesteading on the Electronic Frontier*. HarperTrade, 1994.
- Robertson, Adi. "The UN wants to see how far VR empathy will go." *The Verge*. 19 September 2016.
- Rokeby, David. "Transforming Mirrors." 1996.
- Ringo, Allegra. "Understanding Deafness: Not Everyone Wants to be 'Fixed.'" *The Atlantic*. 9 Aug. 2013.
- Rubin, Peter. *Future Presence: How Virtual Reality Is Changing Human Connection, Intimacy, and the Limits of Ordinary Life*. New York: HarperOne, 2018.
- Rushkoff, Douglas. "Renaissance Now! Media Ecology and the New Global Narrative." *EME: Explorations in Media Ecology*. Hampton Press, 2002. 41-57.

- Rushing, Janice Hocker, and Thomas S. Frenzt. *Projecting the Shadow: The Cyborg Hero in American Film*. Chicago: University of Chicago Press, 1995.
- Russell, James A. "Is there universal recognition of emotion from facial expression? A review of the cross-cultural studies." *Psychological Bulletin*. 115.1 (1994): 102–41.
- Sabatino, Charles. "A Heideggerian Reflection on the Prospects of Technology." *Janus Head* 10.1 (2007): 63-76.
- "Saudi robot Sophia is advocating for women's rights now." *Newsweek*. 05 Dec. 2017.
- Schwartz, Oscar. "Jaron Lanier is a humanist." *Dumbo Feather*. 1 Oct. 2013.
- Shashkevich-Stanford, Alex. "Virtual Reality May Boost Empathy More Than Other Media." *Futurity*. 18 Oct. 2018.
- Sheldon, A. "Changing technology." *Disabling Barriers: Enabling Environments*. Eds. John Swain, Sally French, Colin Barnes, Carol Thomas. London: Sage Publications Ltd., 2004: 155–60.
- Sikka, Vishal. "Why Technology Actually Makes Us More Human." *World Economic Forum*. 23 Jan. 2015.
- Silverman, Arielle Michal. "The Perils of Playing Blind: Problems with Blindness Simulation and a Better Way to Teach about Blindness." *Journal of Blindness Innovation and Research* 5.2 (2015):
- Smith, Marquard and Joanne Morra, eds. *The Prosthetic Impulse: From a Posthuman Present to a Biocultural Future*. Cambridge: MIT Press, 2005.
- "Son-O-House." Studio Edwin van der Heide.
- Srivastava, Lara. "Mobile phones and the evolution of social behaviour." *Behaviour & Information Technology* 24. 2 (March – April 2005): 111-129.

- Stelarc. "Zombies & Cyborgs: The Cadaver, the Comatose & the Chimera." *Culture* (2009): np.
- Stephenson, Neal. *Snow Crash*. New York: Bantam Books, 1993.
- Stiegler, Bernard. *Technics and Time 1: The fault of Epimetheus*. Palo Alto: Stanford University Press, 1998.
- Stover, Carl F. "Introduction." *Technology and Culture* 3:4 (1962): 383–384.
- Stulberg, Brad and Steve Magness. "How Googlers Avoid Burnout (and Secretly Boost Creativity)." *Wired Business*. 11 June 2017.
- Taylor, Amy E. "Body and Technology: Reframing the Humanistic Critique." *Janus Head* 12.1 (2011): 22–38.
- Telotte, J. P. "The Tremulous Public Body." *Journal of Popular Film & Television* 19.11 (1991): 4.
- Thacker, Eugene. "Data Made Flesh: Biotechnology and the Discourse of the Posthuman." 53 (2017): 72–97.
- Thomas, Rhys Owain. "Terminated: The Life and Death of the Cyborg in Film and Television." *The Palgrave Handbook of Posthumanism in Film and Television*. Eds. Michael Hauskeller, Thomas D. Philbeck and Curtis D. Carbonell. Palgrave Macmillan, 2015. 57-65.
- "The Machine" The Machine to be Another. Accessed 8 Dec. 2018.
- "The Sidra Project." The Sidra Project. 2018. Accessed 7 Oct. 2018.
- Toronto Sign Language Interpreter Service (TSLIS)*. Accessed 10 Oct. 2018.
- Turing, Alan M. "Computing Machinery and Intelligence." *Mind* 49 (1950): 433-460.
- Turkle, Sherry. *Alone Together: Why We Expect More from Technology and Less from Each Other*. New York: Basic Books, 2011.

- . "Always-on/Always-on-you: The Tethered Self." *Handbook of Mobile Communication Studies*. Eds. James E. Katz. Cambridge, MA: MIT Press, 2008.
- . *Life on the Screen: Identity in the Age of the Internet*. New York: Simon & Schuster, 1995.
- . *The Second Self – Computers and the Human Spirit*. New York: Simon & Schuster, 1984.
- . *Reclaiming Conversation: The Power of Talk in a Digital Age*, 2015a.
- . "Stop Googling. Let's Talk." *The New York Times Opinion*. 26 Sept. 2015b.
- Urbi, Jaden. "The complicated truth about Sophia the robot — an almost human robot or a PR stunt." *CNBC*. 5 June 2018.
- Van Evrie, John H. *White Supremacy and Negro Subordination, Or, Negroes a Subordinate Race and (so-called) slavery its normal condition*. New York: Van Evrie, Horton & Co., 1861.
- Verbeek, Peter Paul. *Moralizing Technology: Understanding and Designing the Morality of Things*. Chicago, IL: University of Chicago Press, 2011.
- Vincent, James. "Pretending to give a robot citizenship helps no one." *The Verge*. 30 October 2017.
- "Why Switch." Apple Inc. Accessed 2 June 2019.
- Weinschenk, Susan. "The Dopamine Seeking-Reward Loop." *Psychology Today*. February 28 2018.
- . "Why We're All Addicted to Texts, Twitter and Google." *Psychology Today*. 11 Sept. 2012.
- Wiener, Norbert. *Cybernetics, or Control and Communication in the Animal and the Machine*. Cambridge: MIT Press, 1948.
- Wikipedia Entry. "Sophia (robot)." *Wikipedia, The Free Encyclopedia*. Wikipedia, The Free Encyclopedia, 18 May 2018.

- Wikipedia Entry. "Posthumanism." *Wikipedia, The Free Encyclopedia*. Wikipedia, The Free Encyclopedia, 16 Mar. 2018.
- Wikipedia Entry. "Master/slave (technology)." *Wikipedia, The Free Encyclopedia*. Wikipedia, The Free Encyclopedia. 22 June 2019.
- Wigley, Mark. "Prosthetic theory: The disciplining of architecture." *Assemblage 15* (1991): 7-29.
- Wills, David. *Dorsality: Thinking Back through Technology and Politics*. Minneapolis: University of Minnesota Press, 2008.
- . "Dorsal Chances: An Interview with David Wills." *Parallax* 13.4 (2007): 4–15.
- . "Full Dorsal: Derrida's Politics of Friendship." *Postmodern Culture* 15:3 (May 2005): np.
- . "Jasz Annotations: Negotiating a Discursive Limit" Paragraph 21.2 (July 1998): 131-49.
- . *Prosthesis*. Stanford, CA: Stanford University Press, 1995.
- . "Thinking Back: Towards Technology, via Dorsality." *Parallax* 10.3 (2004): 36–52.
- Winn, William. "A Conceptual Basis for Educational Applications of Virtual Reality." (2005): 1–9.
- Winner, Langdon. "Resistance Is Futile: The Posthuman Condition and its Advocates." *Is Human Nature Obsolete? Genetics, Bioengineering, and the Future of the Human Condition*. Eds. Harold W. Baillie and Timothy K. Casey. Cambridge, MA: MIT Press, 2005. 385-412.
- Wolfe, Bernard. *Limbo*. Reprint. U.K.: Gollancz, 2016 [1952].
- Wolfe, Cary. *What Is Posthumanism?* Minneapolis: University of Minnesota Press, 2010.
- Zielinski, Siegfried. [*. . . After the Media*]: *News from the Slow-Fading Twentieth Century*. Trans. Gloria Custance. Minneapolis, MN: Univocal (2013): 241.
- Zuromski Daniel, Adam Fedyniuk and Ewelina M. Marek. "Can New Technologies Make Us

More Human? An Inquiry on VR Technologies in Social Cognition.” *Frontiers in Psychology: Human-Media Interaction*. 18 May 2018.

Films, Television and Art

Advantageous. Jennifer Phang. Film Presence. Netflix. 2015.

Altered Carbon. Laeta Kalogridis. Netflix. 2018.

Arctic Wheelchair. Sunaura Taylor.

Batman & Robin. Joel Schumacher. Warner Bros. Pictures. 1997.

Becoming Homeless. Virtual Human Interaction Lab. Stanford University.

Bicentennial Man. Chris Columbus. Touchstone Pictures. 1999.

Bionic Woman. Kenneth Johnson. NBC Universal Television Distribution. 1976-1978.

Clouds Over Sidra. Chris Milk and Gabo Arora. United Nations and Artscape. 2015.

Em-brace. Chun-Shan (Sandie) Yi.

Elysium. Neill Blomkamp. TriStar Pictures. 2013.

Furry Wheelchair. Sunaura Taylor.

Gloves for 2. Chun-Shan (Sandie) Yi.

Hairy Wheelchair. Sunaura Taylor.

Her. Spike Jonze. Annapurna Pictures. 2013.

Left Behind. Wendy Calhoun. Project Empathy. 2016.

Metropolis. Fritz Lang. UFA Films, 1927.

One breath is an ocean for a wooden heart. Lisa Bufano. 2007.

Prometheus. Ridley Scott. 20th Century Fox. 2012.

RoboCop. Paul Verhoeven. Orion Pictures. 1987.

Son-O-House. Lars Spuybroek (NOX) and Edwin van der Heide. 2004.

Terminator Genysis. Alan Taylor. Skydance Productions. 2015.

The Terminator. James Cameron. Orion Pictures. 1984.

The Letter. Jamie Wong. Project Empathy. 2016.

The Machine to be Another. BeAnotherLab.

The Terminator. James Cameron. Orion Pictures. 1984.

Transcendence. Wally Pfister. Alcon Entertainment. 2014.

Transfer. Damir Lukacevic. Kinostar Filmverleih. 2010.

Prey. Project Empathy. (Forthcoming).

Very Nervous System. David Rokeby. 1986-1990.

Westworld. Jonathan Nolan and Lisa Joy. HBO. 2016 -.

Wheelchairs on the Moon. Sunaura Taylor.