

# CYBORGIFICATION AND THE DISABLED BODY

# CYBORGIFICATION AND THE DISABLED BODY

BY SAMANTHA LYNNE SARGENT, B.A. HON

A Thesis Submitted to the School of Graduate Studies in Partial Fulfilment of the Requirements  
for the Degree Master of Arts

McMaster University © Copyright by Samantha Lynne Sargent, August 2016

Master's Thesis- S. Sargent; McMaster University- Philosophy

McMaster University MASTER OF ARTS (2016) Hamilton, Ontario (Philosophy)

TITLE: Cyborgification and the Disabled Body AUTHOR: Samantha Lynne Sargent, B.A. Hon (McMaster University) SUPERVISOR: Professor Elisabeth Gedge NUMBER OF PAGES: viii, 76

## Lay Abstract

In this thesis I aim at unpacking the ways in which traditional theories about disability fail to view the disabled body in an accurate way. I examine the advance of prosthetic technologies as they relate to disability and suggest that in this way the disabled person is a very good example of a cyborg. I then apply cyborg ideologies to ideas of disability and suggest the cyborgification of the disabled body is beneficial both from a flourishing and an ideological standpoint. I finally consider and respond to some objections against advanced prosthetics and transhumanism more broadly.

## Abstract

In this thesis, I examine traditional philosophical arguments concerning the disabled body. I contribute to disability theory by focusing on disabled individuals who employ the use of advanced prosthetics, and by looking at the implications of said prosthetics on disabled individuals' lived experiences and the ideology of disability. I join other thinkers in finding current disability theory inadequate in its attempts to accurately describe disability and aid disabled individuals to flourish and resist discrimination and marginalization. I suggest that advanced prosthetic use by disabled persons results in the overt cyborgification of the disabled body. Furthermore, I suggest that the cyborgification of the disabled body requires us to re-evaluate the binary of ability vs. disability, and requires us to stop essentializing the disabled body as disabled. I suggest therefore, that these new technologies should be considered morally permissible, and respond to possible objections from the standpoints of fairness and from concerns more broadly regarding transhumanism. Ultimately, questions remain as to any regulatory schemes that should possibly be put in place regarding advanced prosthetics to either limit or promote access to advanced prosthetic technologies for various groups, and to what degree disabled persons should be able to draw on medical resources to access advanced prosthetics.

## Acknowledgements

I would like to express my deepest thanks to Prof. Elisabeth Gedge for all of her hard work and support of my scholarship and research in the course of completing this thesis. Furthermore, I would like to thank her for supporting my interests and fostering my love of philosophy throughout my academic career. Her guidance was irreplaceable in my research efforts and editing processes. Furthermore, I would like to thank Prof. Nancy Doubleday for her support and comments as a second reader. More broadly, I would like to thank the McMaster Philosophy department as a whole for supporting my academic endeavors throughout two degrees- their staff and faculty is truly unparalleled in their support, kindness, and intellectual stimulation. Finally I would like to thank my friends and family who have supported my interests in all things science fiction, and who have put up with my arguments for years and will no doubt continue to do so for as long as I have ideas to speak.

TABLE OF CONTENTS

**CHAPTER 1: INTRODUCTION ..... 1**

**CHAPTER 2: NARRATIVES OF DISABILITY ..... 7**

SECTION 2.1: INTRODUCTION ..... 7

SECTION 2.2: NARRATIVES OF DISABILITY ..... 7

*Subsection 2.2a: Medical and Social Approaches..... 7*

*Subsection 2.2b: What is Bad about Disability?..... 9*

SECTION 2.3: PROBLEMS OF AUTONOMY ..... 12

*Subsection 2.3a: Resisting Universalist Understandings of Disability ..... 14*

*Subsection 2.3b: Prosthetic Interventions..... 16*

SECTION 2.4: PERSONAL NARRATIVES OF DISABILITY AND PROSTHETIC ..... 18

**CHAPTER 3: CYBORG POSSIBILITIES ..... 24**

SECTION 3.1: A CYBORGIAN VIEW ON THE BUSINESS OF BINARIES ..... 25

SECTION 3.2: DECONSTRUCTING BINARIES: DONNA HARAWAY AND CYBORG FEMINISM ..... 30

SECTION 3.3: THE CYBORG AS OPPOSITIONAL CONSCIOUSNESS; SOME CONSIDERATIONS FROM CHELA SANDOVAL ..... 34

SECTION 3.4: THE CYBORG AS POLITICAL POSSIBILITY AND PERIL ..... 36

SECTION 3.5: CONCLUSORY REMARKS ..... 39

**CHAPTER 4: BUILDING “FAIR” CYBORGS ..... 41**

SECTION 4.1: INTRODUCTION ..... 41

SECTION 4.2: “THAT’S NOT FAIR!”: CYBORG ANXIETIES ..... 41

SECTION 4.3: “THE NORM”: WHAT DISCUSSIONS OF FAIRNESS IMPLY ..... 47

SECTION 4.4: THE GENETIC LOTTERY: THE FAIRNESS OF IN-BORN ADVANTAGES ..... 51

SECTION 4.5: CONCLUSION ..... 55

**CHAPTER 5: TRANSCENDENCE OR TERROR?: TRANSHUMAN WORRIES..... 58**

SECTION 5.1: INTRODUCTION ..... 58

SECTION 5.2: THREATS TO HUMAN DIGNITY ..... 59

SECTION 5.3: THE TRANSHUMAN OTHER ..... 67

SECTION 5.4: THE BOUGHT BODY ..... 68

SECTION 5.5 : CONCLUSION ..... 70

**CHAPTER 6: “I WOULD RATHER BE A CYBORG THAN A GODDESS”: SOME FINAL THOUGHTS ON CYBORGIFICATION AND THE DISABLED BODY..... 72**

SECTION 6.1: MAKING SENSE OF DISABILITY IN A CYBORG WORLD ..... 73

SECTION 6.2: FLOURISHING AND REGULATORY SCHEMES ..... 74

SECTION 6.3: FINAL THOUGHTS..... 75

SECTION 5.4: THE BOUGHT BODY ..... 68

SECTION 5.5 : CONCLUSION ..... 70

## Declaration of Academic Achievement

This thesis represents original research and writing that I conducted under the guidance of Prof. Elisabeth Gedge. I proposed a course of research, and conducted a literature review on disability theory and cyborg philosophy. I outlined, and wrote the manuscript of this thesis with editorial assistance from Prof. Elisabeth Gedge and revised the manuscript based on the input of Prof. Gedge and Prof. Nancy Doubleday. All argumentation presented in my thesis is my own original work.



## **Chapter 1: Introduction**

It is a privilege to have an able body: a body that is able to move with average capacity, which does not limit the actions available to you by virtue of you inhabiting that body. An able body is also a privilege that many of us do not take note of. A disabled body, however, is a body that carries with it weighty stigma, and limitations which range from small to great. It is generally not the body, however, that creates the stigma, but rather the society we inhabit that is so uncomfortable with the idea of disability. As Jackie Leach Scully writes in *Disability Bioethics*, “most of us find the notion of a failing or defective body emotionally difficult,” and are reluctant to accept disabled bodies in public view<sup>1</sup>. As a culture, when we view disabled persons “we are not sure if [the] person should be valued *because of or in spite of or irrespective of an impairment*,” and we fail in making that valuation in part because we make many assumptions “about the relationship[s] between physical variation, impairment, and quality of life”<sup>2</sup>. The difficulty that we as a society have in viewing and valuing disabled bodies has only been complicated by the advances of technology, and the new ways available to both society and disabled individuals of coping with disabled bodies. Advanced prosthetics are one of these ways of coping.

In 2004, Paralympic athlete, and bi-lateral below the knee amputee Oscar Pistorious set a world record for speed against other impaired athletes who were considered to be less impaired than him (uni-lateral below the knee amputees).<sup>3</sup> This was possible in part because of the types of prosthetics that were available to him to assist him in dealing with his amputation. He earned

---

<sup>1</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 1-2

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

<sup>3</sup> David Howe, “Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes,” *Sociology* 45, no. 5 (2011) 867

the moniker “blade runner” because of the prosthetic carbon fibre ‘blades’ he used instead of feet in his races, which enabled his victories<sup>4</sup>. The use of these prosthetics has also caused individuals to label him and others like him cyborgs.

Prosthetics like Pistorious’ straddle the line between allowing disabled individuals the same capacity that able bodied individuals enjoy, and taking them beyond the capacity that an able body would provide in to a territory that is entirely new. While prosthetics have typically been thought of as a therapeutic answer to the ‘problem’ of disability, the proliferation of technology in this field means that prosthetics can now be used not merely as something which allows a disabled person to function at a level approximating an abled person, but to transcend what any ‘natural’ body is capable of. Pistorious’ prosthetics allow him the capacity of an able bodied individual in that they allow him to run, but when Pistorious was fighting to be able to compete in the Olympics it was argued that this would be unfair because his prosthetics actually enhanced his capacity beyond what an able body would be capable of by allowing him to use 25% less energy while running than an able bodied athlete would use.<sup>5</sup>

While the disabled cyborg functioning at this level of capacity may be a new innovation, the idea of the cyborg is not. Donna Haraway began the bioethical discussion of the cyborg when she wrote her now famous “A Cyborg Manifesto” in 1985, and suggested that the idea of the cyborg creates a world of “joint kinship with animals and machines, not afraid of permanently

---

<sup>4</sup> *Ibid* (868)

<sup>5</sup> London 2012 Olympics: Oscar Pistorius finally runs in Games after five year battle.  
<http://www.telegraph.co.uk/sport/olympics/athletics/9452280/London-2012-Olympics-Oscar-Pistorius-finally-runs-in-Games-after-five-year-battle.html>

partial identities and contradictory standpoints”<sup>6</sup>. This optimistic view relating to cyborg possibilities is shared by athletes such as Pistorious, and other disabled individuals like Aimee Mullins and Neil Harbisson who view prosthetics that push them into the realm of cyborg as inherently positive because of the choices that prosthetics offer to disabled individuals that would not exist otherwise. Advanced prosthetics can offer choices that can go beyond the choices disabled bodies are normally offered (e.g. the ability to run faster than a uni-lateral amputee as a bi-lateral amputee). Furthermore, they now offer choices that go beyond even what an average able body would provide.

While these choices are excellent for disabled individuals, there is contention over whether these choices ought to be allowed- particularly when the choices offered by advanced prosthetics go beyond what an average able body is able to provide. In this thesis I will contend with three types of concerns surrounding advanced prosthetics and the ‘cyborgification’ of the human body. First I will deal with those that claim this type of transhumanist modification is unfair. Secondly, I will deal with claims that using advanced prosthetics to modify the human body will be ultimately negative on the basis that transhumanism itself is unethical in its quest to dominate or ‘play god’ with the body and narrow the total range of human experience. Finally, throughout this thesis I will consider whether or not the existence of advanced prosthetics on its own is coercive to disabled individuals and communities which may not wish to remedy or mitigate their disabilities via prosthetic enhancement.

---

<sup>6</sup> Donna Haraway, “A manifesto for cyborgs: Science technology and socialist feminist in the 1980s.” *The Post-Modern* (Cambridge: Cambridge University Press, 1994) 82

In his novel, *Our Posthuman Future* Fukuyama contends that human nature is such that cyborg innovations such as gene modification and advanced prosthetics violate 'human dignity'<sup>7</sup>. Meanwhile, David Howe voices concerns specific to disabled athletes. He argues that advanced prosthetics can actually be harmful to the disabled community by limiting the number of possible disabled sport competitors since competition becomes inaccessible to those who are not affluent enough to afford cyborg technologies. Further, competitions thereby become unfair and biased towards the level of tech you can afford<sup>8</sup>. Furthermore, Scully notes even within the context of normal prosthetics, disabled individuals may feel undue pressure to conform to able bodied communities, and may receive benefits from their disabilities that able bodied individuals are not afforded<sup>9</sup> and which they would be loath to forfeit.

Therefore, it is the goal of this thesis to explore the impact of prosthetics and advanced prosthetics on the community of the disabled. Given Scully's work in *Disability Bioethics*, we know that many disabled individuals feel they are often reduced to their disability, and often find prosthetics an awkward solution to the problem of disability. However, we continue to push forward in the realm of cyborg technologies, working towards prosthetics that not only restore capacity (in the cases of those with acquired disabilities) or allow 'normal' functioning, but enhance capacity beyond what a non-enhanced human would usually be capable of. This raises new questions about what constitutes an "able" body, and leaves room for the possibility that our definition of an "able" body may change given prosthetic advancement. I will argue in my thesis that the continued development of enhancement prosthetics and the rise of the cyborg will be of net benefit to the disabled community, as it will broaden standards of both disability and ability,

---

<sup>7</sup> Francis Fukuyama, *Our Posthuman Future* (New York: Farrar, Straus and Giroux, 2002)

<sup>8</sup> David Howe, "Cyborg and Supercrip," 874

<sup>9</sup> Jackie Leach Scully, *Disability Bioethics*, 72

and allow for greater autonomy through capacity. To show this I will consider current attitudes towards disability in bioethics and personal narratives about living with disability and using advanced prosthetics, as well as suggestions of the inclusive nature of the cyborg and the ideologies it represents made by Donna Haraway and Chris Hables Gray. Throughout this discussion I will compare and contrast our failures to adequately theorize about disability with the possibilities that cyborgification offers, and furthermore, how cyborgification offers an avenue of resistance when fighting ideological binaries surrounding disability. However, given concerns surrounding cyborg and other transhumanist technologies, I will also consider concerns about the “fairness” of advanced prosthetics, particularly in regard to disabled athletes, and of transhumanism more generally in regards to Francis Fukuyama’s concerns about enhanced humans.

The realm of emerging cyborg technologies is large, and so for the purposes of this thesis, I will be concentrating primarily on prosthetics that are not merely teleoperators, but rather are integrated into the human body and work with its systems in a closer manner. Teleoperators “perform as appendages of man”, take the form of things like tongs in a bakery or the CANADARM on the ISS, and are more properly understood as cybernetic machines rather than beings.<sup>10</sup> In contrast, I will be examining things such as prosthetic limbs that attach at a joint to a living person, as well as machines that are integrated into human bodies such as synthetic organs, pacemakers, hearing aids, and are used on a daily basis (as opposed to for example, dialysis given to a kidney patient twice a week). While my arguments may apply to broader ranges of cyborg technologies, as my concern is mainly with physical disability, I will be

---

<sup>10</sup>Edwin Johnsen, William Corliss, “Teleoperators and Human Augmentation,” in *The Cyborg Handbook*, ed. Chris Hables Grey (London: Routledge, 1995), 84-85.

examining the prosthetics that are used by those with physical disabilities. The definition of a 'cyborg' is broader still than the realm of prosthetics, and while I will be dipping into metaphorical possibilities of the cyborg in this paper, again, I am primarily concerned with those cyborgs who are also disabled individuals.

Furthermore, throughout this thesis I will be discussing prosthetics both that bring disabled bodies' capacities up to the level of an able-bodied individual's capacities, and those that allow bodies to function beyond what would traditionally be possible. I will consider two types of what I will call "enhancement prosthetics": those that add additional capacity where there is none on an able body (such as Neil Harbisson's ability to 'feel' color), and those that improve an existing capacity beyond what an average able body would be capable of (such as Pistorious' blades). These categories must exist on a spectrum, given that able bodies themselves do, and while I believe my arguments are applicable throughout these spectra, there may be liminal cases where it would be questionable whether or not such a prosthetic would be deemed to be one of enhancement. My arguments will be presented with regard to either enhancement or general prosthetics, and particular cases that transcend these boundaries would need to be examined more closely to see which umbra they ought to fall under; but it is not my endeavor to give a list of which prosthetics are or are not morally permissible. It is my endeavor to illustrate the potential positives, and placate the potential concerns about the cyborgification, and transhumanification of the disabled body.

## **Chapter 2: Narratives of Disability**

### **Introduction**

We seem to be uncomfortable with looking at, thinking about, and recognizing disability. This has created a system of theorizing about disability which can only understand disability either in terms of the medical or the social. Therefore, this historic failure in theorizing about disabled individuals requires that any ethical analysis of technologies that impact the lives and narratives of disabled individuals be sensitive to the particular experiences of disability, not only as the non-disabled construe them, but as recounted by the disabled themselves. Our traditional failures are, however, unfortunately manifold and leave many questions unanswered about how we should think about aspects of disability such as autonomy, and prosthetic use. In this chapter I will describe the failures of our theoretical approaches to theorizing disability, examine the problems of autonomy that arise for disabled bodies both generally and in conjunction with prosthetic use, and examine personal testimony of disabled individuals and their relationships with prosthetics to attempt to give a more nuanced understanding of disability and how advanced prosthetics may influence disabled individuals.

### **Historic Failures in Theorizing Disability**

#### **Medical and Social Approaches**

The first problem that arises when approaching disabled bodies is in the decision of *how* to approach and understand the body. Historically, there have been two broad types of approach possible: biological reductionism and post-structuralist or post-modernist understanding<sup>11</sup>. As Scully writes, biological reductionism leads to the medicalization of disability, and therefore to

---

<sup>11</sup>Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 4.

the idea that the disabled body is a problem to be solved and that therapeutic treatment is the best course of action.<sup>12</sup> This puts disability firmly ‘in’ the body, and does not necessarily take into account the ways in which disability is experienced as generated outside the body (e.g. social stigma). For the reductionist understanding, therapeutic intervention is what is needed to solve the problem of disability. Conversely, post-structuralist and post-modernist understandings *do* acknowledge the social sphere of disability, recognizing “the course of social interactions that inscribe identities on bodies”<sup>13</sup>. However, they do not always take in to account that while embodiment is social, it also rests on the biologic. This can lead post-modernist ideas to come “untethered from materiality, forgetting that bodies have real constraints (including anatomical and biochemical ones)”<sup>14</sup>. Furthermore, it can result in a rejection of therapeutic intervention even where that intervention may be beneficial or done in concert with social change. It is therefore important in our discussion that we not take for granted the idea that the hurdles of being disabled can be solved either purely through medicalization and therapeutic action, or purely through social change and acceptance of disabled bodies. Instead, we must respect both that embodiment is something that cannot be taken for granted, and that it can be both limiting, and (as will later be shown) in some cases desirable for the different experiences it offers. We must respect the differences in different types of disability, and we must respect that there are a myriad of ways in which an individual might formulate an idea of what is best for them when handling their disability. Finally, we must simultaneously refuse to reduce problems arising from disability simply to the dysfunction of the body itself.

---

<sup>12</sup> *Ibid.*

<sup>13</sup> *Ibid.*

<sup>14</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 7.



The failure of the two approaches mentioned above has led to more concrete examples of questionable policies relating to disabled bodies, particularly in regard to parents and their children. Generally speaking, bioethics addresses disabled bodies by paying attention to issues such as euthanasia, prenatal testing, reproductive choices of disabled individuals, and gene therapy<sup>15</sup>. In contrast, there has been very little discussion surrounding the ethics of therapies like advanced prosthetics, perhaps because they are less permanent interventions than things such as euthanasia, or because every day prosthetics such as wheelchairs and hearing aids are so ubiquitous they are thought to be benign. However, these aids, while an integral part of functioning through disability for many disabled individuals, are something that must be learned in concert with learning to live in a disabled body more generally.<sup>16</sup> Furthermore, it is becoming rapidly apparent that the quantity, quality, and capacity of prosthetic interventions is exploding due to our current technological landscape and the advent of 3-D printing technologies. This requires that we re-evaluate the impact that these devices can have on the lives of the disabled and our understanding of disability.

### What is Bad about Disability?

In addition to the problems that arise when we theorize about how to treat disability in academic discourse, there is a serious problem with identifying what disability actually is in the first place once we have recognized the shortcomings of the medical and social models. For the purposes of this thesis I will be focusing on individuals with physical impairments, but disability comes in many forms, and it is often contentious what disability is, and what is actually disabling

---

<sup>15</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 10.

<sup>16</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 12

about disability<sup>17</sup>. While Scully emphasizes the need for a definition of disability for legal and social reasons, she does also recognize that “legal wording is often kept deliberately vague here to leave room for case-by-case interpretation”<sup>18</sup>. While the legal and the ethical are not congruous, we face the same problem when making sweeping determinations about morality which may or may not hold in specific marginal cases.

The medical definition of disability is just as broad as the legal one. For medicine, disability is viewed as “a defect or deficit located in an individual”, and both defect and deficit are determined by comparison with a “norm of physical or mental structure or function”<sup>19</sup>. For the purposes of this thesis this will be the definition of disability I will be working with, though without consideration or attention to mental structures and function, as we are in a far more technologically advanced place in regards to the body than to the mind. However, unlike general medical approaches, I am still more concerned with how social structures and influences outside the body can cause disability than the actual deficit in structure or function, and with how advanced prosthetics may be used therapeutically for both purposes. Therefore, while I will be using the medical definition pragmatically to identify who “counts” as disabled, I will be taking a modified medical approach which considers that oftentimes it is the social stigma and lack of accommodation which makes impairment disabling.

While many aspects of disability may come from the body itself, there are also disabled individuals who would subjectively claim that “they are perfectly fine as they are, or that the *bad thing* about the impairment is not the particular deprivation other people say it is, but something

---

<sup>17</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 20

<sup>18</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 22

<sup>19</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 23

else”.<sup>20</sup> For example, someone missing a limb may be able to function perfectly well but may be made to feel uncomfortable or disabled by their treatment by other individuals. They may be ogled, or pitied, or assumed to be incapable which means they are both experiencing social stigma and may also internalize feelings of inadequacy. Just as it is difficult to identify what is ‘bad’ about disability, as ‘disabilities’ may be so disparate, it is hard to account for the specific hurdles experienced by individuals as there are so many types of disabilities, and ways of becoming or being disabled. Speaking generally about disability may lead to some individuals’ experiences being left out of the discussion. And advanced prosthetics are affecting many different communities of disabled individuals (those with sensory impairments, those with mobility impairments, those with chronic illnesses, etc.), and it is impossible to consider each and every implication of each type of prosthetic with regards to each experience of disability when their only shared characteristic is that they help to compensate for some impairment.

If we are to understand disability socially as well as medically, then we can begin to separate the impairment or deficit of disability from disability itself. Under a social model, *impairment* “is an individual biological manifestation” such as loss of eyesight, loss of limb, etc., while *disability* is the disadvantages that are caused by societal norms which do not take into account the experiences and needs of individuals with impairments, and which limit their ability to participate in society.<sup>21</sup> This distinction helps us separate the impairment from experiences of disability, but for the purposes of this thesis, I will be using the term “disabled” to refer to individuals with impairments as it would be too onerous to identify the social experiences of disability when talking about such a wide range of impairments and experiences. Under the

---

<sup>20</sup> *Ibid.*

<sup>21</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 25

social model, a physical impairment such as that of Pistorius is disabling because of the lack of accommodation in social spaces for him to have his blades and carry them with him on an aeroplane, or, in a more everyday example, the experience of a wheelchair bound individual being unable to access local businesses due to a lack of wheelchair ramps is disabling. These causes of disability can be even more insidious because they can also bar individuals with impairments from important aspects of everyday life such as the labor market, which in turn limits their freedoms by economically marginalizing them.<sup>22</sup> However, just as the body cannot be separated from the social realm that it inhabits, disability cannot be entirely divorced from the body that has the impairment. In other words, the problems of disability cannot be solved solely through social acceptance of impairment any more than they can be solved solely by therapeutic interventions with the body.

### **Problems of Autonomy**

Regardless of which model we should understand disability under, living as an embodied person with a disability creates both problems and opportunities for autonomy. These problems and opportunities will be unique to their experiences of disability because of the interaction between their impairment and the way they are treated in society and by the medical establishment. Scully notes that “At whatever stage of life impairment becomes apparent, the person with a physical disability must integrate identity and body function in ways that differ from the common experience” and that they must accept their variant body in a way which still allows the body to be used “automatically and unselfconsciously in culturally acceptable

---

<sup>22</sup> *Ibid.*

ways”<sup>23</sup>. Despite disability, disabled individuals are expected to fit into society without too much fuss, and may therefore feel pressured into being “‘good’ disabled people”, and in so doing may compromise their autonomous wishes<sup>24</sup>. They must conceal their struggles for the benefit of the able bodied individuals who may feel uncomfortable watching, or who may be burdened by the extra work that is required to support those with disabilities. In this way, societal pressures to use prosthetics may be experienced as a reduction of choice for the disabled individual even should that pressure result in a decision to do something like buy an automatic wheelchair to be able to have increased mobility (and therefore choices). Yes, the wheelchair brings increased mobility, but if our society demands through its lack of accommodation of difference that a wheelchair be used, then is it really a choice? Furthermore, the pressure to use therapeutic interventions to cope with disability can increase the perception that disability is straightforwardly bad, when embodied difference need not always be a problem<sup>25</sup>. Rather than thinking about ‘solving’ the problem of disability, Scully suggests that we use disability as a way to allow us to think differently.<sup>26</sup> I would further suggest that disability and advanced prosthetics can be used in concert as a way to allow us to think differently. Rather than suggesting that advanced prosthetics are merely a way of allowing disabled individuals to function as able bodied individuals, I will be positing that advanced prosthetics are a possible way to break down the binary of abled and disabled bodies, and that this will allow both increased choices for those who are disabled, and will result in different approaches to the body opening up through the possibility of technology. This is something that could not have been achieved through the

---

<sup>23</sup> Frank G., “On Embodiment: A case study of congenital limb deficiency in American culture”, *Culture, Medicine and Psychiatry* no. 10 (1986), 189-219

<sup>24</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 13

<sup>25</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 16

<sup>26</sup> *Ibid.*

examination and use of historic prosthetics, as we are only now realizing the potential that prosthetics have to elevate human capacity beyond even what an able bodied person could accomplish, and thus show the distinction between ability and disability to be illusory and the capacity of the disabled to be contingent only on our technological and imaginative efforts.

### Resisting Universalist Understandings of Disability

While impairment and disability are often experienced as hampering, there are select communities of disabled individuals who resist traditional therapeutic interventions and find joy and opportunity *because* of their impairment, rather than in spite of it. It is important to consider these communities, because they aid in resisting ableist discourse which says that disability is always a harm. Furthermore, it is these communities who may wish to resist interventions such as advanced prosthetics on the basis that they not feel coerced into overcoming their impairment through technological means. However, even should these individuals or groups choose not to employ the use of advanced prosthetics, they may still be positively impacted by their availability.

One of the most prominent examples of a disabled community which finds unique opportunity in the experience of disability is the community of hearing-impaired individuals. Some individuals within “the Deaf world argue that being deaf is more like being a member of a distinct social or ethnic group than it is like other physical impairments”<sup>27</sup>. This Deaf community is usually comprised of individuals with some level of hearing loss, and some individuals with severe hearing loss are not part of these communities<sup>28</sup>. These communities are not a holistic representation of deafness, but they are spaces that would not exist without individuals with

---

<sup>27</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 59

<sup>28</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 60

hearing loss. It is possible to see how even normal prosthetics such as hearing aids could risk disrupting these communities, especially in the cases of individuals with only partial hearing loss, whose hearing aids only brought their hearing up to the able-bodied hearing standard. While it seems obvious that deafness is an impairment that limits choices, in this case, hearing is a capacity which limits inclusion into the Deaf community. In fact, Dena Davis in “Genetic Dilemmas and the Child’s Right to an Open Future” argues that having a diversity of communities, including Deaf communities, increases autonomy because it increases the number and ways in which people may elect to live.<sup>29</sup> These communities still survive despite the widespread availability of hearing aids and other technological interventions that help to compensate for hearing impairments. The nature of disability as a lived experience means that it is very hard to make judgements on what kinds of decisions are reasonable for disabled individuals to make, as we do not have epistemic insight into their experience, and cannot properly understand the contexts in which they are making decisions.

While not strictly a disabled community, there is a small subset of individuals who experience Body Integrity Identity Disorder (BIID) who desire to become disabled. BIID is a mental health disorder (though it is not recognized by the American Psychiatric Association) which causes individuals to feel that they inhabit the ‘wrong body’, rather like individuals who identify as being transgender do<sup>30</sup>. Many individuals who have BIID for that reason identify themselves as being “transabled”. Some individuals do successfully transition and do become disabled, though their experiences are generally excluded from disability studies. These individuals feel a strong desire to become disabled, and while disabled individuals discount the

---

<sup>29</sup> Davis, D., “Genetic dilemmas and the child’s right to an open future.” *Hastings Center Report* no. 27 (1997), 7-15

<sup>30</sup> Alexandre Baril, “How dare you pretend to be disabled?’ The discounting of transabled people and their claims in disability movements and studies.” *Disability and Society* no. 30 (2015), 690

transabled as romanticizing, fetishizing, and failing to understand realities of being disabled, individuals with BIID truly feel as though they inhabit the wrong body and suffer the effects of body dysphoria as such. Marginalizing these individuals from the disabled community also risks creating a 'hierarchy of disability' where there are 'good' disabled individuals who are victims of disability and 'bad' disabled individuals who are responsible for their condition (which could be applied to disability acquired at birth vs. through an avoidable accident, for example).<sup>31</sup> For these reasons, it is problematic to generalize about disabled experiences being wholly good *or* wholly bad. Furthermore, these communities show us ways in which disability might be desirable, and remind us to resist a singular narrative of disability.

### Prosthetic Interventions

The hierarchy of "good disabled" vs. "bad disabled" is similar to the one which is intolerant of disabled individuals who choose to remain disabled despite available treatments (such as prosthetics). The group of BIID individuals also illustrates one of the major worries that advanced prosthetics causes: that individuals will choose to become disabled so as to access prosthetics that are superior to their existing limbs, creating a system whereby those with the determination to disable themselves will drain resources away from those who are 'truly' disabled<sup>32</sup>. However, the fact remains that those individuals with BIID who do successfully 'transition' to being disabled already do exist and there are disabled individuals who would rather choose to not access the resources that would allow them to have existing prosthetics. What is important is that those with disabilities are supported regardless of how they acquired

---

<sup>31</sup> Alexandre Baril, "How dare you pretend to be disabled?' The discounting of transabled people and their claims in disability movements and studies." *Disability and Society* no. 30 (2015), 696

<sup>32</sup> Alexandre Baril, "How dare you pretend to be disabled?' The discounting of transabled people and their claims in disability movements and studies." *Disability and Society* no. 30 (2015), 693



their disability, and that they should be respected whichever course they pursue in treating and living with their disability. Prosthetics mean that there are more possibilities of how to go about living one's life and that a plurality of choices arise from the possibilities that prosthetics offer. Furthermore, the increase in the types of prosthetics available due to technological advances and 3-D printing techniques means that there are many choices of how to compensate for disability with prosthetic use. There remains the concern that resources may be taken away from those who need them should individuals without mental health concerns like BIID begin chopping off healthy limbs, but this seems to be more a matter of policy regarding the distribution of advanced prosthetics rather than their actual impact on the disabled community and their moral permissibility as such.

In addition to these examples of disabled communities who may see their disability as a positive, there are examples of disabled individuals who, while impaired, simply do not wish to have therapeutic intervention to assist them with their impairment. This is another group of individuals who may not accept or appreciate advanced prosthetics becoming a part of the disabled landscape. Scully gives the examples of infants born in the 1960s with limb anomalies due to the prescription of thalidomide.<sup>33</sup> These infants were largely provided with prosthetic limbs despite the fact that there was “accumulating evidence that the children could often devise their own way of moving about or manipulating objects using limbs they had in unusual but serviceable ways”.<sup>34</sup> These infants, and later children, largely found prosthetics to be cumbersome and disadvantageous when compared to using their “stumps” to perform tasks such as eating, or even driving.<sup>35</sup> However, there is resistance to the practice of coping with physical

---

<sup>33</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 69

<sup>34</sup> *Ibid.*

<sup>35</sup> *Ibid.*

impairment when the coping mechanisms that are used are non-therapeutic in nature and instead focus on finding capacity in what remains. Scully cites a 2007 legal case in which a woman with no upper limbs was brusquely treated by a McDonald's drive-thru personnel when she drove her car through the drive through with only her legs and feet, and used a foot to pick up her order through the drive-thru window<sup>36</sup>. The woman went on to win her suit, but nonetheless experienced discrimination for using non-standard limbs in her everyday life despite the fact that she functioned perfectly well utilizing her body in that way. This societal treatment of individuals with impairments who resist therapeutic intervention to allow them to function in more "normal" ways risks cutting off ways of living that allow disabled individuals to function perfectly adequately and instead coerces them into the use of prosthetics which can be more cumbersome to use than not. Individuals like this who wish to resist therapeutic intervention and prosthetic assistance must not be coerced into transitioning into using advanced prosthetics unless they so wish.

### **Personal Narratives of Disability and Prosthetic Use**

In addition to individuals and communities who desire or benefit from a lack of therapeutic interventions, there are many disabled individuals and communities who welcome therapeutic interventions, and in particular, prosthetic solutions to the problems that impairments cause them in their everyday lives. A prominent advocate for prosthetic use and development is the model and speaker Aimee Mullins. In her 2009 Ted Talk "My 12 Pairs of Legs," Mullins talks about her experiences inspiring innovators to build different prosthetics that integrate aesthetics *and* function, and her experiences as a disabled motivational speaker. She describes a

---

<sup>36</sup> A.M. Pallasch, "Denied service for using her feet, woman claims." *Chicago Sun-Times* (2007), July 2.

moment where she spoke to some schoolchildren, and in presenting to them her multiple pairs of legs she describes her experience as going, “from being a woman that these kids would have been trained to see as disabled to somebody who had potential that their bodies didn’t have yet, someone who might be superabled”<sup>37</sup>. She is particularly interested in the aesthetics of disability, and notes that she appreciates when she is told ‘she does not look disabled’ and it is prosthetics that make this possible for her. She suggests that the aesthetically pleasing nature of her prosthetics invites individuals “to look a little longer, and maybe even understand” her disability<sup>38</sup>. While she enjoys ‘passing’ and the benefits it offers, this is no longer her only goal. Instead of working towards solely replicating ‘human’ legs, she also revels in the creative possibility prosthetics offers. In collaboration with others, she has used this creativity to create a number of legs including legs that contain growing beets, glass legs, jellyfish legs, and carved wooden legs that look like elaborate boots. Furthermore, she can change her height and speed on a day to day basis by choosing the height and type of prosthetic she chooses to wear<sup>39</sup>. She views prosthetics as giving, “the wearer [has] the power to create whatever they want to create” in the space that disability leaves.<sup>40</sup> In the way she describes her prosthetics it is clear that they have at the very least positively benefitted her in her life and have mitigated her experience of disability both by allowing her to ‘pass’ as able bodied, and by allowing her to transcend both what the average body is capable of and what it is ‘supposed’ to look like.

While some individuals criticize Mullins for reinforcing able-bodied norms and conventional standards of female beauty in her quest for ‘pretty legs’, this is not necessarily the

---

<sup>37</sup> Aimee Mullins, “Aimee Mullins: My 12 pairs of Legs” [Video File] (2009)

<sup>38</sup> *Ibid.*

<sup>39</sup> *Ibid.*

<sup>40</sup> *Ibid.*

case.<sup>41</sup> Although in some ways she does embody the “Cyborgian sex kitten”, this is only part of her identity as an amputee<sup>42</sup>. As she says in her own words, her concern is in increasing the choice and aesthetic possibilities open to amputees, and she finds pride not only in conforming to traditional beauty standards but in the power she has to alter her height, and in the artistic possibilities of going beyond what is naturally human. It is hard to see how cheetah legs or those that grow vegetables are merely conforming to a traditional beauty standard. While her legs that enable her to wear high heels do conform to traditional beauty standards, they are simply one of her many options. While some of her prosthetics may “not challenge any esthetic conventions of beauty or offer [...] potentially disruptive possibilities”, others do, and the choice that she has to alter her body on a day to day basis and take control of the empty space that disability leaves her with is both powerful and disruptive.

While Mullins pioneers prosthetics for aesthetics primarily, and secondarily increases the choices that are available to her as a ‘superabled’ person, others focus primarily on the possibilities that prosthetics offer that cannot be replicated by the ‘normal’ human body. One of these individuals is Neil Harbisson, an artist, self-proclaimed cyborg, and cyborg activist. Harbisson, like Mullins, has benefitted extremely from advances in prosthetics, and the creative possibilities that advanced prosthetics offer. Harbisson suffers from achromatopsia, a rare condition that causes him to be entirely colorblind, to the point where he sees the world entirely in shades of gray<sup>43</sup>. In collaboration with Adam Montandon and others, Harbisson created the “eyeborg” a camera which extends above Harbisson’s head and which allows him to perceive

---

<sup>41</sup> Marquard Smith, “The Vulnerable Articulate: James Gillingham, Aimee Mullins, and Matthew Barney”, *The Prosthetic Impulse* (2006), 58

<sup>42</sup> *Ibid.*

<sup>43</sup> Neil Harbisson, “Neil Harbisson: I Listen to color” [Video File] (2012)

color by transforming the picture the camera perceives into sound waves that he hears through his bones.<sup>44</sup> Initially, he had to memorize the sounds that went with particular colors, but through continued use of his prosthetic the sound has become just a part of his perception of the world, and he can immediately identify the color without going through the work of translation<sup>45</sup>. Furthermore, he describes both being able to think and dream in color. This process has caused him to describe himself as a cyborg, and as such he fought to have his passport photo include the eyeborg because of its integration into his identity<sup>46</sup>. His new ability to convert color into sound has also allowed him other skills, such as translating music into colored pictures, and associating individuals based on the color-sounds their faces make when perceived by the eyeborg. Perhaps most usefully, he can also perceive ultraviolet rays, and he uses this skill to avoid sunbathing on days when the UV index is particularly high. Since he has become a cyborg, he has also become a figure in cyborg activism, and highly encourages innovation into advanced prosthetics that increase human capacities beyond what is traditionally possible<sup>47</sup>. Through his work he has transformed his impairment into a synesthesia-like capability, and has launched a successful art and music career by using the skills his prosthetic has provided him with to integrate the two in a way which previously would not have been possible.

These activists are not the only disabled individuals to dream of becoming cyborgs, and to revel in the possibility that advanced prosthetics offer. In *Cyborg Citizen* Chris Hables Gray writes about a “psychedelic biker” named Bandit who was experimenting with different attachments he could craft for his hand which had only two vestigial fingers as early as 1992.<sup>48</sup>

---

<sup>44</sup> *Ibid*

<sup>45</sup> *Ibid*

<sup>46</sup> *Ibid*

<sup>47</sup> *Ibid*

<sup>48</sup> Chris Hables Gray, *Cyborg Citizen* (New York: Routledge, 2002), 99

Bandit created various attachments for his hand which aided him in puppeteering, working on machines, handling electronics, riding his bicycle, and even partying.<sup>49</sup> In his experience individuals born with their disability “had a very secure relationship to their prostheses. The prosthesis was not something they resented; it was a part of them that was all the more interesting because it was removable, adjustable, and interchangeable”.<sup>50</sup> The relationship of the disabled to their prosthetic varies greatly across individuals, and individual experiences. Some individuals must adjust to their prosthetics after acquiring an impairment. For example, Gray writes that Christopher Reeve, while once superman, adjusted to his wheelchair to the point where he described it as being part of his body”<sup>51</sup>. He goes on to describe the complex relationships that individuals have with their prosthetics, particularly those that are applicable at the end of life (especially when individuals need to be attached to large machines to allow them to continue breathing/keep their blood circulating). These relationships, however, vary greatly depending on the individual, the nature and way in which they come to their cyborgification, and how comfortable they are with the moniker of cyborg in the first place.

It is clear that disability is a concept that is difficult to conceive of holistically. Disabled individuals lead very different lives based on the type of disability they have, their attitude towards their disability, and the social challenges they experience related to their disability, depending on the community they inhabit. While some individuals desire to be disabled, others merely cope with their disabilities either with prosthetics or without, and still more search for possibilities beyond even what able-bodied individuals can strive for. Therefore, in the next section I will discuss the idea of the ‘cyborg’ that Mullins and Harbisson find hope in, and how

---

<sup>49</sup> *Ibid*

<sup>50</sup> *Ibid*

<sup>51</sup> Chris Hables Gray, *Cyborg Citizen* (New York: Routledge, 2002), 100

advanced prosthetics can do exactly what Mullins has already found in her personal life: create possibilities in the space that disability leaves.

### **Chapter 3: Cyborg Possibilities**

While Aimee Mullins articulates a personal experience of putting a prosthetic possibility in the place that disability leaves, feminist philosopher and cultural scholar Donna Haraway suggests that it is the idea of the cyborg itself which opens possibilities for all persons even before prosthetics enter into the equation. In this chapter I will argue with reference to Haraway and others that the cyborg as a concept is one of inherent possibility because of its requirement of partial identities and attention to difference. Furthermore, with specific attention to the disabled prosthetic user *as* cyborg, I will illustrate the ways in which the ideological conception of the cyborg- even separate from the corporeal possibilities it offers- will be beneficial to the disabled community as it will break down the dichotomizing binary of ability vs. disability. Finally, I will make note of some interpretations of Haraway that can be applied to the concept of disability and the advanced-prosthetic-user-as-cyborg, which argue that the cyborg is ideologically beneficial politically and is an avenue of political resistance in addition to its work on binaries. Finally, I will begin to deal with some concerns that the possibility of the cyborg that Haraway offers may overbroad or susceptible to mis-use.

It has already been demonstrated that for general purposes we can consider disability to be “a defect or deficit located in an individual”, with the defect and deficit being determined by reference to a “norm of physical or mental structure or function”<sup>52</sup>. If we are to determine disability by this medical definition we still must first find a norm of physical structure and function to compare against, thereby allowing us to determine what an impairment that is a “defect or deficit” looks like. This raises the question: What is the norm?

---

<sup>52</sup> Jackie Leach Scully, *Disability Bioethics* (Maryland: Rowman & Littlefield, 2008), 23



A Cyborgian View on the Business of Binaries

In “A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century”, Donna Haraway argues that the cyborg has become the norm, and that acknowledging and deconstructing the cyborg is an avenue to the acknowledgement and deconstruction of difference- particularly the difference between male and female bodies. When the average person thinks of a ‘cyborg’ generally they think of science fiction, and the cyborg is the representation either of horror or hope for the forward evolution of humanity. More broadly, and less fantastically, a cyborg “is a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction”<sup>53</sup>. Perhaps when we think of describing individuals like Mullins, Pistorious, or Harbisson, we do not think to call them cyborgs, but by this definition and by their own descriptions, they are. They and other cyborgs walk invisibly among us from the individual who uses a hearing aid or pacemaker, to the individual who relies so heavily on their cellular device that they may as well be physically integrated. Yet, we do not think of them or ourselves as cyborgs. How can this still be possible in our increasingly technologized world in which we depend on machine interfaces for so many aspects of our daily lives? These interactions do not make us cyborgs in the physical sense the way that prosthetics, pacemakers, etc. do, but they do make us metaphorical cyborgs.

Haraway suggests that this lack of acknowledgement can be seen as coming from historic ideologies which dichotomize. As Haraway writes, the traditions of ‘Western’ science and politics are also traditions of racism, male-dominance, capitalism, appropriations of natural resources. These traditions have all involved battlegrounds where “the relation between organism

---

<sup>53</sup> Donna Haraway, *Simians, Cyborgs, and Women* (Routledge, 1991), 149

and machine has been a border war.”<sup>54</sup> This ideological ‘war’ that we are engaged in requires sides, and requires that the sides be opposite. With nature on one side and technology on the other, the cyborg which is inherently *both* technological and organic is a threat, and it must be pushed either to the organic (nature) or the technological (man) lest we risk acknowledging that these are not dichotomies that can be maintained without mythmaking. In other words, we cannot draw a line down the cyborged body, cutting off the prosthetic, the hearing aid from the organic whole. When we integrate ourselves with machines they become a part of our person. Neil Harbisson would not be a person who could dream in color without his eyeborg, and so cutting off the prosthetic would be both damaging to him and also would fail to entirely remove artifacts of his borgification. Yet, this is what our modern myths ask us to do: to cut clear lines between the natural and the artificial. This cutting is what the cyborg resists, telling us that the cyborg is not made of two parts that can be separated but rather a whole that integrates two disparate mediums.

The binaries that the cyborg resists are dangerous for two reasons. First, these binaries are those of domination and subordination. Binaries of domination and subordination require that one category be painted as inherently inferior to the other on the basis of mere difference. Secondly, these dichotomies reinforce both institutionalized power and proliferate further dichotomies based on other kinds of difference.<sup>55</sup> Dichotomies should be distinguished from hierarchies, as hierarchies are open to change and re-organization, while dichotomies are not. Dichotomies may still be benign in cases where they do not devolve into dualisms (e.g. I am male or female is an acceptable statement where there is still room to accept trans, and non-

---

<sup>54</sup> Donna Haraway, *Simians, Cyborgs, and Women* (Routledge, 1991), 150

<sup>55</sup> Val Plumwood, *Feminism and the Mastery of Nature* (Routledge, 1993), 41

binary identities, but if it devolves into a dualism where other classifications are not allowed it becomes harmful). Binaries once created exclude the possibility of shared characteristics or reorganization and instead the properties that relate to the binaries are fixed, mutually exclusive, and internalized.<sup>56</sup> Plumwood and Haraway discuss the binaries of gender, lining up the pairs as things like, “culture/nature, reason/nature, male/female, master/slave, universal/particular, subject/object”<sup>57</sup>. These binaries are represented side-by-side in the same body and therefore defied by the cyborg- the ultimate union between the rational creations of technology and the natural creation of the human body- but they are also represented in our understandings of disability and the binary of abled/disabled. The disabled lines up with the natural, slave, necessity, against all of those things that we are told are superior. The painting of disability in these terms is intensely misleading, but nonetheless it is the way the binary trains us to think about disability: as an essentializing difference which precludes ability and all of ability's related characteristics.

Plumwood suggests that there are five characteristics which make something a dualism or binary. These characteristics are: Backgrounding, Radical Exclusion, Incorporation, Instrumentalism, and Homogenisation. I will demonstrate now how the ability/disability binary fits in to this framework. Backgrounding is essentially the act of denial by the master in the binary that they depend on the subordination of the other. The master is set up as the universal, while in actuality the boundary of mastery is defined by the slave and so the master both depends on the slave while simultaneously denying that fact because this dependency challenges the master's dominance.<sup>58</sup> The abled person relies on the disabled to identify themselves in such a

---

<sup>56</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 47

<sup>57</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 43

<sup>58</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 48-49

way. The abled person may be incapable of athletic movement while the disabled person may be extremely fit, and yet the abled person can always refer to themselves as abled even if they cannot do something that someone disabled can. The universality and ubiquity of the abled perspective hushes questions of what it means to be disabled and denies that the disabled perspective is valuable or desirable because of its subordination.

The devaluation of the disabled individual's capacity corresponds with the next characteristic that categorizes dualistic binaries: Radical Exclusion. Radical exclusion says that "there need only be a single characteristic which is different, possessed by the one but not the other, in order to guarantee distinctness"<sup>59</sup>. This difference is then magnified, while shared qualities are treated as inessential to further separate the dominant from the subordinate and vice versa until the binary pair comprises in two totally disparate worlds and ideologies which naturalizes the domination of the idealized master in relation to the totally othered slave.<sup>60</sup> We see this with both our unexamined social biases towards simultaneously feeling pity and disgust for the disabled body in contrast to the abled one, and in our presumptions that disability implies a lack of capacity rather than a mere difference in capacity.

The third characteristic that Plumwood identifies as being essential to a dualistic binary is that of Incorporation. Incorporation refers to the idea that in a binary, it is not merely said that there are two things that are different, but rather that there are two things and that their relationship is *not* one of equals.<sup>61</sup> Instead, the master's "qualities are taken as primary, and as defining social value"<sup>62</sup>. The master *is*, while the slave is what is lacking or absent. Again, this

---

<sup>59</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 49

<sup>60</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 50

<sup>61</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 52

<sup>62</sup> *Ibid.*

lines up with common presumptions about disability. The abled person *is*, even if they are lacking in capacity, while the disabled person *isn't*, regardless of what they may be able to do.

The fourth and fifth characteristics Plumwood discusses are corollaries to Exclusion and Incorporation, identified as Instrumentalism and Homogenisation. Instrumentalism corresponds with the Exclusion of the other, and can be understood as the mindset that the master has to the slave, where the master does not recognize that the slave has “a centre of desires or needs on their own account”<sup>63</sup>. This can be seen in attitudes towards disability such as those that businesses espouse when they do not want to be bothered to make the spaces they occupy accessible to individuals with disability. If there is an inconvenience to the disabled, it does not matter because it is always the desires of the master that need to be fulfilled first even if those desires are less integral to the master's experience or happiness than the desires of the slaves are to their experience or happiness. Homogenisation corresponds with Incorporation in that it asks us to treat all those slaves and othered as the same, even if there are significant differences. Plumwood gives the example of “non-English ‘foreign’ immigrants” who despite the multiplicity of their cultures, languages, and experiences were all ignored because they were all non-English.<sup>64</sup> This too, is reflected in our understanding of disability. I have already discussed the problematic aspects of containing all individuals with impairment under the umbrella of “disability” despite difference in kinds, expressions, and experiences of impairment and yet we continue to homogenize and treat the prototypical disabled experience as though it were the only one and the only expression. The differences are erased by the binary construction and the label

---

<sup>63</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 53

<sup>64</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 53

of disability, which means that we cannot accurately even view the problem that exists in our treatment and understanding of various disabilities.

The key to dissolving this binary, however, seems possible through the existence and understanding of the cyborg if we are to believe what Haraway will suggest. Plumwood cautions that the way to defeat the harms caused by the existence of binaries is not to merely invert the power structure within the binary. We must not merely understand the slave as master and the master as slave. This would still lead to an incomplete understanding of identity, and would result in similarly problematic circumstances by continuing to tie the disparate groups' identities to one another.<sup>65</sup> Rather, we must deconstruct these binaries in a way that simultaneously affirms the identities which have been devalued, and revises our understanding of them to recognize difference and continuity.<sup>66</sup> Furthermore, to make radical change to the foundations of the binary, "we must unmask more fully the identity of the master hidden behind the neutral guide of the human and of the ideals of rationality".<sup>67</sup> The cyborg, Haraway argues, is the perfect tool for this job.

### Deconstructing Binaries: Donna Haraway and Cyborg Feminism

While some may view the coming of the cyborg as apocalyptic, it is clear that the metaphorical cyborg is already here, represented in the partiality and multiplicity of identities of all those who experience the world through the mediation of their phones and in individuals like Mullins and Harbison. The apocalypse we are in is not a cyborgian one, as it will be shown that

---

<sup>65</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 61

<sup>66</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 62-66

<sup>67</sup> Val Plumwood, *Feminism and the Master of Nature* (Routledge, 1993), 68

the cyborg gives an avenue to resist binaries in a way that does not merely reinforce or flip the valuation of the dichotomized parties. A cyborg from a non-apocalyptic perspective “Might be about lived social and bodily realities in which people are not afraid of their joint kinship with animals and machines, not afraid of permanently partial identities and contradictory standpoint.”<sup>68</sup> This idea of ‘partial identities’ and contradictions is the antithesis of how we have dealt with disability. The label ‘disabled’ does not take into account what capacities, what abilities still remain. It reduces the individual described by it to one aspect of their identity out of many. The label ‘cyborg’ is one of possibility that is comfortable with partiality. Haraway wants cyborg feminists “to argue that ‘we’ do not want any more natural matrix of unity and that no construction is whole.”<sup>69</sup> If we do this, we already see the body as incomplete. We see that there is already space for possibility whether or not there is impairment to provide it, with the only difference between bodies being the place and kind of space that exists. Furthermore, it allows our embodied identities to move beyond the confines of the body itself. The cyborg allows us to ask, “Why should our bodies end at the skin, or include at best other beings encapsulated by skin?”<sup>70</sup> Individuals like Mullins, Harbisson, and Pistorious show us that our bodies need not, and this possibility of a body beyond skin is one that everyone shares. The able body is limited in different ways than the disabled body, but without cyborgification it is limited nonetheless. The machine, the prosthetic can be seen not as “sin, but an aspect of embodiment”<sup>71</sup>

If we are to extrapolate, the dichotomies that the cyborg disrupts also line up with those that are damaging to the disabled. In the Western world we draw lines between ability and

---

<sup>68</sup> Donna Haraway, *Simians, Cyborgs, and Women* (Routledge, 1991), 154

<sup>69</sup> Donna Haraway, *Simians, Cyborgs, and Women* (Routledge, 1991), 157

<sup>70</sup> Donna Haraway, *Simians, Cyborgs, and Women* (Routledge, 1991), 178

<sup>71</sup> Donna Haraway, *Simians, Cyborgs, and Women* (Routledge, 1991), 180

disability, and between 'productive workers' and those who must be cared for and their caretakers. One side represents the so-called positives of human progress, society, and the capitalist ideal, while the other is in some way inferior. These dichotomies surrounding disability are clearly false dichotomies in the same way that the divide between nature and culture is, and yet they loom large in cultural ideals and stereotypes in the same way. However, the cyborg offers hope for breaking down these binaries in the same way it breaks down others, and can reveal the falsity of this kind of divide. By accepting the cyborg, we can "embrac[e] the possibilities inherent in the breakdown of clean distinctions between organism and machine and similar distinctions structuring the Western self."<sup>72</sup> The volume of the possible breakdowns allows us to "crack the matrices of domination and ope[n] geometric possibilities"<sup>73</sup>. One of these 'matrices of domination' has been the distinction of disability and ability. Harbisson by all accounts has a disability, he has an impairment in his ability to see color that 'able-bodied' individuals do not have (even if color-blindness is common, his total condition is quite rare). Yet, through his cyborgification he makes the rest of us look disabled. With the exception of individuals with synesthesia (its own medical 'problem'), the general public cannot hear color. We do not have the capacity to hear color in our dreams, or to turn musical pieces into works of art, or to compliment individuals on the sounds their faces make. Can the rest of us be said to have an impairment because of this deficit when Harbisson has this capacity? Through Harbisson's cyborgification he has more capacity, is better abled than we are, and yet he retains his disability. The cyborg allows the possibility of super-ability in combination with disability even when relating to the same capacity (in this case 'seeing' color). The cyborg therefore *does* have the potential to breakdown the binary of ability/disability in the same way it breaks down

---

<sup>72</sup> Donna Haraway, *Simians, Cyborgs, and Women* (Routledge, 1991), 174

<sup>73</sup> *Ibid.*



the nature/technology divide. The cyborg *demand*s partial identities for the disabled that use advanced prosthetics. There is no way for Harbisson to use his eyeborg without qualifying simultaneously as super abled and disabled.

The cyborgs' demand of respect and attention to partial identities does something to disability that disabled individuals have long desired: it makes disability only one aspect of their identity rather than a label describing what they are. It becomes something they have, a characteristic such as having brown hair or blonde hair as opposed to a subsuming characteristic of their identity. When disability becomes an incidental aspect of one's body or personality, disability quickly becomes far less limiting from an ideological standpoint. It allows the cracks in the matrices of domination to show possibility. The cyborg means that we must re-evaluate the relationship between disability and ability. If we acknowledge Harbisson's cyborgian nature we would likely think it incorrect to term Harbisson disabled even in a casual social setting without providing further caveats about his capacity to still view color if only in a different way. Identifying him solely in terms of his disability would be intensely misleading. It would likely be misleading to identify *any* disabled person by their disability, but cyborgification makes this mistake overt and obvious. With the cyborg we cannot help but see the dichotomy between ability and disability crumbling before our eyes. Not only do we no longer know where to place the disabled person, we also do not know where to place ourselves. If we are standing in a room with a very tall Mullins, and she changes her legs and is suddenly at our height we are forced to confront a reality in which we can do less than she can, a reality in which we do not have the ability to pick the best legs for the task at hand. If we are listening to music with Harbisson, we are forced to confront a reality in which we cannot see and experience music in the way that he can, a reality in which we do not have the ability to do so. In short, we are forced to confront a

reality in which it is *our* capacity that is impaired or lacking, not that of the disabled individual; a reality in which the human body is limited, but the limit of enhancement has not yet been reached.

### The Cyborg as Oppositional Consciousness; Some considerations from Chela Sandoval

Chela Sandoval finds a broader, but similar hope in Haraway's writing. For Sandoval, cyborg feminism and cyborg societies more broadly are an opportunity to encourage oppositional consciousness which encourages difference.<sup>74</sup> For Sandoval, Haraway celebrates difference through the cyborg in that in the cyborg difference is nothing but "elaborate" specificity and hence an opportunity to engage with and learn from the other.<sup>75</sup>

While Sandoval still situates her discussion of Haraway as being representative of feminism rather than as disability activism, she encourages us to view Haraway as being representative of "U.S. Third World Feminism". She identifies this type of feminism as something which seeks to "provide the links capable of bridging the divided minds of the first world academy, and to create grounds for what must be considered a new form of transdisciplinary work that centers the methodology of the oppressed- of the subaltern- as a new form of post-western empire knowledge information that can transform current formations and disciplinizations of knowledge in the academy"<sup>76</sup>. This work and knowledge need not only be applied to feminist and indigenous projects. Perhaps it only speaks more to disability's counter-culture nature that it is not mentioned explicitly in these feminist texts which take into account

---

<sup>74</sup> Chela Sandoval, "New Sciences: Cyborg Feminism and the Methodology of the Oppressed" in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 413

<sup>75</sup> *Ibid.*

<sup>76</sup> Chela Sandoval, "New Sciences: Cyborg Feminism and the Methodology of the Oppressed" in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 410

gender and race in their cyborg politic- especially as the disabled have always been represented among the cyborgs.

Sandoval speaks to the Manifesto's significance across classes of the oppressed, viewing it "as a challenge to all social movement theory"<sup>77</sup>. For Sandoval, Haraway's cyborg feminism requires that attention be given to "oppositional consciousness" and to "subjugated and situated knowledges."<sup>78</sup> If we are to be genuine in our quest to break the boundaries of oppositional pairs, and to be comfortable with partial identities and pay attention to the types of knowledge that come through partiality we must accept the voices of the disabled into our cyborg politic. The toxicity of the binary between ability and disability has in addition to impairment resulted in the disabled to certainly be in possession of both subjugated and situated knowledges that must be paid attention to.

Regardless of the lack of inclusivity of disability in Haraway and Sandoval's feminism, we need not be cyborgian feminists to see the merits of Haraway and Sandoval's arguments. We need only acknowledge the perspectives they uncover through their attention to partialities and situated knowledge and their linkage of these partialities to the idea of the cyborg. We need only acknowledge the fact that the cyborg reveals the myths we hold about our bodies and the world we navigate them through. The cyborg merely reveals what is already there, screaming to be heard: that there is no clear line in the sand between our cities and the natural world outside, that there is no clear line between the feminine and the masculine; that there is no clear line between ability and disability. The disabled that choose to live as cyborgs and fill their empty spaces with

---

<sup>77</sup> Chela Sandoval, "New Sciences: Cyborg Feminism and the Methodology of the Oppressed" in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 415

<sup>78</sup> Chela Sandoval, "New Sciences: Cyborg Feminism and the Methodology of the Oppressed" in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 419

possibility merely write large what many in the disabled community seem to say, that disability is only one aspect of a multiplicity of identities, a part but not the whole nor even necessarily the defining characteristic.

### The Cyborg as Political Possibility and Peril

Chris Hables Gray takes this argument one step further and suggests that cyborg possibilities do not just operate on an individual or metaphorical level, but also on social and political systems in a more overt way. In “The Cyborg Body Politic: Version 1.2”, he argues that places of cyborg activity are potential spaces of political agency.<sup>79</sup> He sees the cyborg body that is interfaced “intimately with various prosthetics” as a potential model “for political structures that subject and partially construct us”<sup>80</sup>. In reconstituting our own bodies, we may find new avenues of political expression. This would be especially valuable for marginalized groups such as the disabled who in a capitalist society may find themselves both underrepresented and oppressed because of inaccurate notions of how their disability contributes to their personhood. The cyborg body offers us a “new map, a new way to conceive of power and identity” and this can be even more powerful for those first in line to build their cyborg bodies, those who *require* cyborg bodies just to be accepted in ways that an able bodied individual cannot imagine.<sup>81</sup> Furthermore, the cyborg body helps us “move beyond the paralyzing dualism of humans as inviolable, natural individuals with independent plots and ‘lifestyles’, and humans as resource for social machinery, as cogs in wheels or operators serving the Net.”<sup>82</sup> In short, the cyborg body

---

<sup>79</sup> Chris Hables Gray, “The Cyborg Body Politic: version 1.2”, in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 459

<sup>80</sup> *Ibid.*

<sup>81</sup> *Ibid.*

<sup>82</sup> Chris Hables Gray, “The Cyborg Body Politic: version 1.2”, in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 463

integrates the master and the slave of Plumwood's dichotomies while rejecting their essentiality, saying that each is in part both, but that no human is either inviolable or to be used as a slave or resource. It revises a holistic identity and creates a partiality in its place, leaving space for both excellence and weakness and rejects characterizing attributes as only one or the other.

This vision and possibility comes with one caveat. As Gray puts it "there is no choice between utopia and dystopia, Good Terminator or Evil Terminator- they are both here"<sup>83</sup>. The multiplicity and fragmented nature of the cyborg, Gray argues, can be just as easily appropriated or hybridized by the devils as it can be by the angels. This can happen two ways: the cyborgs themselves can be problematic, or the metaphor can be re-appropriated and redefined by various groups.<sup>84</sup> These concerns, however, are not damaging to Haraway's arguments for the possibility of the cyborg, or for my suggestion that advanced prosthetics and cyborgification will be beneficial for the disabled community and the understanding of disability. Haraway merely argues that the cyborg can open up discourse, dissolve binaries, and allow individuals to be satisfied with fragmented identities. This in no way excludes the possibility of morally bad cyborgs. Cyborgs, regardless of their goodness or badness, reveal systems of oppression that work through the myth of binaries (even if those binaries are a lie and those entities are themselves cyborgs). It is in the unmasking itself that cyborgs do their moral work, rather than what they do with what lies behind the mask.

By similar logic, it seems odd to believe that a misappropriation of the metaphor of the cyborg could be damning to its inherent possibility. The entire point of the cyborg metaphor is

---

<sup>83</sup> Chris Hables Gray, "The Cyborg Body Politic: version 1.2", in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 465

<sup>84</sup> Chris Hables Gray, "The Cyborg Body Politic: version 1.2", in *The Cyborg Handbook*, ed. Chris Hables Gray (Great Britain: Routledge, 1995), 463-464

that it means we must be attentive to the individual parts and ways in which the cyborg is a cyborg. The cyborg cannot be used to say anything meaningful about the thing that is a cyborg without further qualifying the details of the intersection and function of the organic matter and the technological. The details and intersection of the natural and the organic can only be explained as a product of the society which both made the technologic and made its enabling capacity desirable. Unless the explanation of the cyborg is garbled or mistaken (which seems a possibility with any theory) it will in and of itself involve the unravelling of some of our myths and binaries. In addition, should a non-cyborg be identified as a cyborg, the misappropriation should be readily apparent under scrutiny, and should a cyborg be denied the label? This as we have seen already occurs and has no impact on the positives that cyborgification engenders and the possibility of its raising awareness.

As far as my own arguments go, I have stated that I am chiefly concerned with the impact of advanced prosthetics and their cyborgian nature on understandings of disability. I presume that the 'morally bad' cyborgs of this class will be the transabled, or perhaps more futuristically, those who remove their own limbs not because of a question of identity but because of the availability of something better. I will deal with concerns over some of these 'morally bad' cyborgs in my discussion of fairness and arguments against transhumanism. For the purposes of this section and how these 'morally bad' cyborgs relate to the conception of the cyborg I argue that they have no impact on how the idea of the cyborg breaks down the binary between ability and disability. If able bodied individuals wish to disable themselves to become cyborgs this is (perhaps) a worrying occurrence. However, it would result in a world in which the *desired mode of being* would be disabled, which would completely invert the nearly unanimous status quo. Individuals would go through suffering (or surgery) to become impaired because the impairment

would mean nothing in comparison to the possibility cyborgification and advanced prosthetic use offers us. This is not to say that it will result in Plumwood's inversion of the ability/disability hierarchy, but rather that it will cause attention to be paid to the particularities of disability and the possibilities therein. Still, we may think perhaps these individuals who disable themselves to become cyborgs are not the people we wish to take advantage of this type of technology. Regardless, it illustrates the way in which the cyborg and in particular, the disabled cyborg requires us to re-evaluate our opinions on disability, and consider the disabled in an entirely new framework. Similarly, the disabled being mis-identified or incorrectly identified as cyborgs seems to have little impact on the fact that the cyborg as an idea once brought in to the realm of disability discourse will result in a re-evaluation of our conceptions of disability and ability, and work to dissolve the binary between them.

### Conclusory Remarks

In this section I have demonstrated that the idea of the cyborg can be a powerful tool when applied to concepts of disability, and that the disabled-advanced-prosthetic-user-as-cyborg can do important ideological work by placing in the forefront the conflicting and exclusionary dichotomies we hold about ability and disability. I have illustrated through reference to Val Plumwood's theories on dichotomies of domination how the binary of ability and disability essentializes and devalues the disabled. Consequently, I have suggested with reference to Haraway, Sandoval, and Gray that the disabled cyborg reveals the problematic way in which we deal with disability, and illustrates that there is no essentializing feature about disability, nor is there a limit on what the disabled individual can do except for what their imagination can conceive and what our technology can accomplish. The cyborg requires that we give due attention to difference and partiality. When the cyborg is embodied by a disabled individual, it

requires that we give attention to not only the disability, but also to the other features of the individual including the way in which they navigate, compensate, or excel through their use of prosthetics and how their cyborg identity allows them to appreciate their partiality. It allows their disability to be acknowledged without it subsuming their identity. Furthermore, I have rejected the idea that the possible misappropriation of the cyborg or the possibility of there being “bad cyborgs” is damaging to the overall benefits of the term and its expression in the form of the disabled cyborg. Furthermore, I have rejected the idea those criticisms are damaging to my argument that the cyborg will be beneficial to the disabled community and to our understanding of disability. This, however, has still left us with some fears about what to do with the “bad cyborgs”, those individuals who use cyborgification to transcend the limitations of the human body and play God, or who wish to have an unfair advantage over others. In the next sections I will consider what makes a “bad cyborg” and how these two types of “bad cyborgs” may affect the benefit that advanced prosthetics and cyborgification represent for disabled individuals.



## **Chapter 4: Building “Fair” Cyborgs**

### Introduction

In Chapter 3 I focused on the ideological possibilities that cyborgs offer us, and in particular, the innovative ways in which the disabled cyborg can change our understanding of disability. I suggested that disabled cyborgs break down binaries between ability and disability by demanding that attention be paid to partial identities, and by revealing a lack of essentializing features of what disability entails. However, this does not mean that the existence of disabled cyborgs- especially those with advanced prosthetics- is not in any ways morally troubling. While disabled cyborgs who use enhancement prosthetics are the most adept at challenging the binaries between ability and disability due to their enhanced capacity, they are also the most troubling when we consider what their increased capacity means for fairness in terms of athletic competition and society at large. In this chapter I will explore some of the worries related to the unfairness of technologically enhancing a person's 'natural' capacity, and of the difficulty of judging enhanced persons against standards of normalcy. Furthermore, I will suggest that many of these concerns stem from ableist worries, and assumptions about what 'natural' capacity entails. Finally, I will suggest that the disabled cyborg will not be 'unfair' in any morally significant way, and that in fact the existence of enhancement technologies enabling disabled cyborgs will help to alleviate some of the unfairness which is currently inflicted on disabled individuals through standards of normalcy, and lack of acknowledgement of the 'genetic lottery'.

### “That’s not Fair!”: Cyborg anxieties

Athletic competition is the major site where anxieties about enhanced disabled cyborgs surface. The ideology of fair athletic competition raises concerns about the 'fairness' of cyborgs

because it becomes unclear at high level competition whether or not athletic success is a result of the *person* who is competing, or of the technology they are employing to achieve victory<sup>85</sup>.

Oscar Pistorious' bid to enter the Olympic Games after his success at the Paralympic Games highlighted this confusion. In 2004 at the Paralympic Games, Pistorious set a new world record above other athletes who were considered to be less impaired than him.<sup>86</sup> While Pistorious is a bi-lateral amputee, he competed against uni-lateral amputees and still was able to achieve success. However, he was barred from competing in the Olympic arena because of his prosthetics and the possible 'edge' they gave him on the competition. He was thought to have this edge because the design of his prosthetics is such that he can expend less energy in relation to a 'normal' runner.<sup>87</sup> While this ban was eventually lifted because Pistorious has no choice but to use prosthetics in a running contest, initially his use of them was deemed unfair.<sup>88</sup> When evaluating if it would be fair for Pistorious to compete alongside able-bodied athletes two questions were asked: first, did his prosthetics give him an advantage over the competition? and second, was he actually 'running' on his blades or engaging in a different sort of activity entirely (such as bouncing)? We can see these questions translating more broadly into societal transhuman worries. Will enhanced cyborgs be advantaged in such a way as to destroy fair societal interactions? Will they even be acting as humans or will they be something else entirely?

---

<sup>85</sup> David Howe, "Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes," *Sociology* 45, no. 5 (2011,) 877

<sup>86</sup> David Howe, "Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes," *Sociology* 45, no. 5 (2011) , 868

<sup>87</sup> London 2012 Olympics: Oscar Pistorious finally runs in Games after five year battle.

<http://www.telegraph.co.uk/sport/olympics/athletics/9452280/London-2012-Olympics-Oscar-Pistorious-finally-runs-in-Games-after-five-year-battle.html>

<sup>88</sup>David Howe, "Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes," *Sociology* 45, no. 5 (2011) 878

Concerns about fairness exist *now* in the sport arena, where disabled athletes and abled athletes are separated and categorized based on their level of impairment, and made to compete only against those on the same playing field as them. However, we can see this translating into other, broader worries further down the line where segregating individuals as to their status as cyborg would be less possible. Would Harbisson's sound/sight capacities make him more employable than someone with normal vision? Would Mullin's versatile legs give her an unfair advantage over an individual who had only their own pair for the rest of their life? These questions are difficult to answer because the cyborg is not yet prolific enough to tell what kinds of social advantages might result from cyborg technologies. However, disabled individuals already face social *disadvantages* as a result of their impairments and of ideological constructs which say that disability is an inherently bad thing. Therefore, it seems backwards to worry about going too far when bringing a disadvantaged group up in the same way that it seemed unusual to bar Pistorious from using his prosthetics when he has no other choice but to use them. The priority should be to allow the disadvantaged to exercise what capacities they have, even if those capacities are in some way superior to or different from what is traditionally possible. Pistorious is not really advantaged by his prosthetic use, but even if he was, he still must use prosthetics to be able to even attempt to compete. Therefore, the advantage would still be a reasonable allowance given the alternative of not being allowed to participate given the context of disadvantage and discrimination. Advantage is not the only concern of fairness when evaluating these technologies, however.

David Howe in "Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes" considers the idea that the use of advanced prosthetics might be unfair to able-bodied sports participants because of the increased capacity they offer

disabled athletes and ultimately rejects this possibility as I have done. However, he finds that these technologies may still be unfair to both abled and disabled athletes because of the 'leg race' that the use of this type of technology results in in sporting contexts. Howe argues that the increased sophistication of prosthetics has made sophisticated prosthetics a requirement for disabled athletes who wish to compete at a professional level. He finds that the use of flex-foot technology in running prosthetics like Pistorious' means that this type of technology is required to get to the Paralympic games (although it offers little advantage once there).<sup>89</sup> It is the *requirement* of advanced prosthetics to even be able to compete that Howe finds to be unfair. As he writes, "With state-of-the-art racing wheelchairs costing upwards of £5000 and ergonomically designed prosthesis costing up to £20,000, athletes from across the globe can find participation as cyborgs with state-of-the-art technology prohibitive".<sup>90</sup> It is not the technology itself that is unfair, but rather the prohibitive costs associated with it and the way those costs are inflicted on poorer and less developed nations who may not be able to compete as a result.

The use of cyborg technology in sport and the unfairness of the technology's prohibitive costs is not exclusive to disabled sport and prosthetic use, however. Howe elaborates, stating that able-bodied athletes take similar hi-tech devices to the Olympics, but "specialist clothing and shoes appear less like advanced technology in comparison to racing wheelchairs and prosthetic limbs [...] as they are not explicitly aids for mobility"<sup>91</sup>. The fact that able-bodied individuals' use of technology looks less like an unfair cyborg advantage than disabled athletes' use of

---

<sup>89</sup>David Howe, "Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes," *Sociology* 45, no. 5 (2011), 874

<sup>90</sup>David Howe, "Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes," *Sociology* 45, no. 5 (2011), 874

<sup>91</sup> David Howe, "Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes," *Sociology* 45, no. 5 (2011), 875

technology has two implications. First, it implies that the able-bodied technology user is not a cyborg in the same way that the disabled technology user is a cyborg. Secondly, it shows us that as long as the advantage is not visible we are more comfortable with it. This means that we are okay with allowing some sorts of advantages in sporting competitions. Perhaps the argument that could be made here is that doping and steroid use is equally invisible, and yet we have said that that type of advantage is impermissible but all that seems to illustrate is that we believe something that chemically enhances the body is in some way different for the purposes of sport than something which aids through a non-absorbed means. There may be other considerations here which would uncover the inconsistencies of dealing with doping in sports but that is beyond the scope of my thesis and only obliquely related to the issue of prosthetics. Regardless, it therefore does not seem that the high cost of cyborg prosthetics is an unsolvable or morally impermissible type of unfairness given our general comfort with wealth inequity, and other cost barriers to living certain types of lives. Furthermore, it means that advanced prosthetic use may be able to be made fair provided that the same prosthetics were available to all interested parties regardless of their economic means.

Finally, Howe finds that the use of cyborg technologies in disabled sport contexts may be unfair in terms of its societal and ideological impacts on those disabled athletes who do not need the same type of advanced prosthetics to compete but are nonetheless disabled. This worry seems akin to other 'hierarchy of disability' worries that have been mentioned and are common when theorizing about disabled bodies in academic contexts. Howe worries that narratives of prosthetic victory unfairly marginalize other disabled narratives and athletes. He quotes Berger, emphasizing that stories like Pistorious' "will foster unrealistic expectations about what people with disabilities can achieve, what they *should* be able to achieve if only they tried hard

enough.”<sup>92</sup> According to Howe, not only will the widespread use of cyborg technologies by disabled athletes be marginalizing to those with disabilities who cannot yet be aided by advanced prosthetics (or do not wish to be aided by advanced prosthetics), it will marginalize disabled athletes who are not disabled enough to need these technologies in the first place.<sup>93</sup> It is my contention that the positive ideological impacts that disabled cyborgs will have on understandings of disability will outweigh the possible harms of increased expectations. Furthermore, Howe seems to forget how narratives like Pistorious’ may empower disabled individuals to pursue their dreams even should those dreams be outside the reach of what is traditionally possible for disabled individuals. While it may make some disabled individuals feel inadequate, any individual may be made to feel inadequate in the face of excellence. Saying that stories like Pistorious’ will create unrealistic expectations for disabled individuals is like saying that stories like Beethoven’s will create unrealistic expectations for deaf individuals. There are always exceptional stories, and always individuals who will hold themselves or others to unrealistic standards.

Obviously, the question of access is an issue. It should not be the case that cyborg technologies should reinforce hierarchies of disability, or reinforce class inequities by denying the capacity that cyborg technologies allow to some groups of disabled individuals. This does not seem an insurmountable problem, however. While it is not the place of this thesis to speculate on what regulatory schemes should exist to protect both advanced prosthetic users and disabled individuals, in the next sections I will attempt to elucidate some of the reasons why it does not

---

<sup>92</sup> David Howe, “Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes,” *Sociology* 45, no. 5 (2011), 877

<sup>93</sup> David Howe, “Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes,” *Sociology* 45, no. 5 (2011), 877

make sense to talk about fairness in regards to disability because of the way discussions of fairness cause us to evaluate disability against a 'norm', and because these concerns generally fail to address the unfairness of the genetic lottery and other factors which cause disability and marginalize the disabled in the first place.

"The Norm": What discussions of fairness imply

In "Bound to be 'Normal': Assistive technology, fair opportunity, and athletic excellence," D.A. Baker asks us to consider what restricting Paralympic athletes to 'fair' technological aids really entails in the contexts of sporting competitions. She asks us to imagine an athletic competition where, several months before the actual competition is to take place, the athlete's "strength and metabolic capabilities are quantified and judged to be at or below the same range of function as that of his past or present athletic peers"<sup>94</sup>. At first, this seems similar to wrestling contests, where capacity instead of weight is judged in advance of the actual contest to ensure a level playing field. However, she elaborates that "during the time leading up to the competition our sprinter is not permitted to strengthen his legs, and in fact must ensure that his legs remain *at* or *below* the same range of function they were at the time they were initially measured."<sup>95</sup> According to Baker, the scenario she describes is analogous to the process that Paralympic athletes must undergo when they have their prosthetics evaluated for the purposes of fair athletic competition.

Baker argues that in every athletic competition, certain advantages are allowable while keeping the spirit of fair competition. For example, it is allowable that certain basketball players are taller than others, or that some individuals have stronger muscles, or better training. This

---

<sup>94</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 1

<sup>95</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 1

variance and advantage is allowable because otherwise, every 'fair' competition would end in a tie.<sup>96</sup> Perhaps it could be argued that there is some mental aspect to sports which allows equal bodies to triumph instead of tie, but this assumes that mental advantages are not advantages. Mental variance is currently allowable, but were we to engage in truly 'fair' competition we might also separate individuals based on their mental capacities, which may also be (and often are) the result of an inborn talent for drive and understanding. Similarly, certain types of technological advantages are allowable for use even by able bodied individuals. This harkens back to Howe's observation, and is apparent in sports such as skiing and swimming, where gear can significantly impact the level of excellence an athlete is capable of when professional sports outcomes are decided by fragments of seconds. Baker argues that the fact that in-born and non-prosthetic technological advantages are less regulated than prosthetic use assumes that "quantified standards of 'normal' human performance exist and are implicitly canonical," and she further argues that "this assumption disproportionately restricts individuals with disabilities from the same opportunities to achieve greatness as individuals without disabilities".<sup>97</sup>

This 'normal' standard is implied by regulations ensuring the fairness of Paralympic sport because if there is some way for a prosthetic to be 'unfair' then this means that there *is* some normal standard (NS) that prosthetic legs should be measured against and that these legs "should be reconfigured to fall at (or below) the NS" in order for athletes like Pistorius to compete fairly.<sup>98</sup> Baker brings up the case of Caster Semenya, an athlete who was made to undergo a gender test because her 'masculine physique' was giving her a competitive edge. However, once "the gender issue was settled the athlete was free to use her perceived abnormalities to gain a

---

<sup>96</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 1

<sup>97</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 1

<sup>98</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 2



competitive edge”<sup>99</sup>. Presumably, had her gender at birth been found to not correlate with the gender she chose to live as she would have been competing ‘unfairly’, but as it was she “was not required to feminize her appearance or weaken her muscles to bring them back to a level at or below a NS”<sup>100</sup>. It seems then that the issue of fairness or a NS has much more to do with what capacities we believe are ‘normal’ for certain groups of people (e.g. women, disabled individuals) than with what is actually fair in competition. Furthermore, the existence of a NS for groups of individuals with such a high variance of capacity (e.g. disabled individuals, transgendered individuals) when it does not exist for those with able bodies is discriminatory. If prosthetic users need to be brought down to ensure ‘fair competition’ why do we also not need to bring down able bodied athletes to ensure the same? As Baker writes, “individuals without disabilities are not restricted to perform within those NS’s in the future and so can push beyond the NS by changing their nutrition or upgrading their equipment”<sup>101</sup>. In short, when we hold disabled athletes to different standards than able bodied athletes to ensure fairness we are prohibiting them from bettering themselves beyond a certain standard. Furthermore, we prohibit them from bettering themselves while allowing able bodied athletes to improve themselves and their sporting technology. This is unacceptable. I would also argue that this would be unacceptable outside of sporting contests as well. While it still needs to be ensured that there is equitable distribution of technology so that a large range of individuals can better themselves through cyborgification, it seems morally bad to prohibit persons from bettering themselves. This is especially the case if the persons we are prohibiting from bettering themselves are already marginalized through their experiences of disability. Perhaps limiting people’s capacities is more

---

<sup>99</sup>D.A. Baker, “Bound to Be ‘Normal’”, *Consortium for Science, Policy, and Outcomes*. Arizona State University, 2

<sup>100</sup> D.A. Baker, “Bound to Be ‘Normal’”, *Consortium for Science, Policy, and Outcomes*. Arizona State University, 2

<sup>101</sup> D.A. Baker, “Bound to Be ‘Normal’”, *Consortium for Science, Policy, and Outcomes*. Arizona State University, 2

acceptable if we extend the application of the limitation rule and choose to limit the capacity of able bodied individuals as well. However, it seems absurd and invasive to police someone's bodily autonomy by saying that they are not allowed to improve themselves beyond a certain standard despite the fact that they may be able to, due to some abnormality in physiology or psychology.

It could also be argued that advanced prosthetics would be acceptable in sporting contexts if they could be accessed by all athletes. This could not apply to able-bodied athletes because they would all have access to able bodies and (with enough funds) sporting technology. Though, those of abnormal physiology could metaphorically stand for the enhanced cyborg. Presumably, the use of advanced prosthetics by all athletes is not an acceptable compromise to sporting bodies because of the fear that healthy individuals will become amputees to access advanced prosthetics as a way to compete in their chosen sport. I have already addressed some of the reasons the worry of amputations for prosthetic access is not as problematic as it is generally believed to be, and Baker argues that the self-amputation worry is absurd for three reasons. Firstly, this worry presumes that "retaining one's healthy limbs is a better state of the human condition than having prosthetic replacements".<sup>102</sup> Furthermore, it assumes that policies and social norms would sanction intentional amputation of healthy limbs.<sup>103</sup> This is clearly false if we look at the community of BIID individuals and how they are treated as an example. Finally, it assumes that individuals themselves would want to engage in this behaviour.<sup>104</sup> One could imagine athletes who were athletes because they wanted to win engaging in self-amputation and prosthetic use if it really was as advantageous to athletic competition as sporting bodies seem to

---

<sup>102</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 4

<sup>103</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 4

<sup>104</sup> D.A. Baker, "Bound to Be 'Normal'", *Consortium for Science, Policy, and Outcomes*. Arizona State University, 4

worry it is. However, athletes who compete for the sake of enjoying their bodies and their bodily capacities would presumably not want to alter their bodies in this way- especially given the training and time needed to adjust to impairment and to learn how to use advanced prosthetics. It is for these reasons that Baker rejects the idea that advanced prosthetics are unfair in sporting contexts. Presumably, these same reasons could be applied more broadly to social advantages. For example, Mullins would not be unfairly advantaged by her height despite the advantages it may offer her because although her height is not 'natural', it is in no way less fair than allowing a person who is naturally tall to retain their height. Furthermore, even if they made her the tallest person in the world, this would still not be inherently unfair because to say she needed to be shorter would be to imply some NS which is already clearly a false standard if she has the capacity to transcend it. Although this example is a little absurd because height at a certain point would likely no longer be advantageous, it serves to illustrate the difficulty of telling a group of individuals "no, even though the technology is available you cannot improve yourselves", particularly when this group is already marginalized.

#### The Genetic Lottery: The Fairness of In-Born Advantages

Perhaps it is still possible however, that there is some meaningful difference between improving one's self through enhancing by technological means and working on one's in-born talents 'naturally' or being 'naturally' gifted. What, then, does it mean to be 'naturally' gifted with a particular talent or physiology? Many philosophers write about the 'genetic lottery', which is an idea I believe is relevant to the issue of enhancing disabled persons through the use of advanced prosthetics. The genetic lottery (GL) refers to the idea that some persons have in-born advantages when compared to other persons. Usually this idea is invoked to show that individuals are not deserving of some sort of genetic defect or disease, but it can be also used to

show the same of in-born disabilities. The idea of the GL reminds us to consider that we could just as easily live in another world where we are not lucky enough to have been born of sound mind and able body, and that the types of advantages that good health offers are the by-product of happenstance and good luck rather than desert.

The fact that many of our natural advantages are the product of good luck in the genetic lottery generally results in an intuition that those who experience poor luck in the genetic lottery “should be compensated in terms of publicly funded health care services, and perhaps in other ways as well”.<sup>105</sup> It is not merely genetic diseases and disability that are the result of the genetic lottery, however. Attributes such as intelligence and attractiveness may also have genetic components, and as such are not evenly distributed. If we look at the lottery even more broadly, some individuals gain advantages such as being born in the correct country for them to flourish, or are lucky enough to be born to affluent parents. Yet, perhaps not *all* of these things are things we want to compensate individuals for. Holtug argues that the reason we have for compensating individuals who are unlucky in the GL is a *pro tanto* reason, and that it is defeasible by other interests. That is to say, generally speaking, we should compensate individuals who are unlucky in the genetic lottery, but there may be reasons some times that we should not compensate them. Perhaps we decide that aesthetic unattractiveness is something that we have been ‘unlucky’ about in the GL. However, we should not necessarily be compensated for it by being provided with plastic surgery because this reinforces traditional beauty standards, and is therefore not a good use for our scarce medical resources when we can compensate individuals for being unlucky in regards to a genetic disease instead. Therefore, it remains possible that some reasons to compensate are more defeasible than others. Furthermore, compensations may be best when

---

<sup>105</sup> Nils Holtug, “Does justice require genetic enhancements?”, *Journal of Medical Ethics*, no. 25 (1999), 137

they differ based on the specific inequities at hand. For example, we may compensate for bad luck in the financial GL (i.e. the affluence of the parents we are born to) by having social systems such as free healthcare and education, but not by compensating by giving every unlucky child some particular dollar amount because generally speaking children are not financially savvy. It is my contention that the use of advanced prosthetics is sometimes the best way to rectify the inequities caused by disability and that this is another reason they should be morally permissible. Furthermore, it is my contention that prosthetics which bring individuals beyond what is 'naturally' possible should be permitted because the breaking down of binaries should not merely be about equalizing differences but also about allowing all individuals to flourish based on their capacities, even if some of those capacities are technological in nature.<sup>106</sup>

There may still remain the question as to how the inequity of the GL justifies the use of advanced prosthetics when presumably the inequity of the GL could be rectified with a prosthetic that merely mirrors the capacity of the average person. This argument rests on two principles, however. First, that there is some sort of NS or minimal standard that results in fairness once that minimum is met. Perhaps Pistorious should be happy with a prosthetic that allows him to walk at an average pace, and we should say that his own standards of wanting to be an Olympically competitive athlete are too high for us to compensate for. I share the same question as Holtug does in this situation: "Why should our concern for disadvantaged individuals suddenly pop out of existence once the minimum is met?"<sup>107</sup> Pistorious is still disadvantaged in a very different

---

<sup>106</sup> Here I advocate for a standard of 'flourishing', but justifying this choice from a social policy standpoint is beyond the scope of this paper. Here, I merely wish to rebut arguments that advanced prosthetics would be unfair. For more information on this standard in regards to administering justice and resources to the disabled, see Mary Mahowald's article "A feminist standpoint on disability: our bodies, ourselves" in *Feminist Bioethics: At the Center, On the Margins*. She advocates for a flourishing standard, and sets out some basic guidelines for resource management, allowing that when flourishing cannot be met, function-based standards should apply.

<sup>107</sup> Nils Holtug, "Does justice require genetic enhancements?", *Journal of Medical Ethics*, no. 25 (1999), 140

way than someone who has a minimum capacity and is *not* disabled is disadvantaged. While the average person who has only a minimum capacity of mobility may change their capacity through exercise, training, hiring a coach, etc., Pistorious will always be limited in some way by his physical impairment unless intervention is allowed, and we allow compensation in the form of advanced prosthetics. Furthermore, there is some problematic grey area between what is enhancement and what is merely allowing for an average capacity. As shown here and in previous chapters, it is very difficult to determine what a NS or average capacity should look like, and as I have argued previously in this section, it seems very discriminatory to say that this standard is the limit for disabled individuals when so much more is possible.

Not all worries about compensating for the GL are the result of worries about enhancement. In fact, some members of the disabled community worry that compensation for disability merely encourages the medicalization of disability as discussed in Chapter 2. Obviously, some types of interventions are problematic; for example, Tom Shakespeare in “Disability, Genetics and Global Justice” gives the example of individuals with Down Syndrome who may turn to cosmetic surgery to avoid discrimination. This is problematic because it is a solution to discrimination, as opposed to being a solution for the impairment.<sup>108</sup> Rejecting all enhancements or compensations on this basis seems as absurd as taking a purely social view of disability as discussed in Chapter 2. While some things that make disability a ‘bad thing’ are certainly the result of discrimination, the discrimination is occurring because of some real impairment, and this impairment may or may not be disabling but is nonetheless an impairment and part of the lived reality of individuals who have them.

---

<sup>108</sup> Tom Shakespeare, “Disability, Genetics and Global Justice.” *Social Policy & Society* no. 4 (2005), 89

Some may object to my allusion to the GL as not all disabilities and impairments are the result of genetic misfortune. While this is true, many are, and as our system currently stands we do not feel that those disabled through non-genetic accident or even fault should be less able to access therapy to help them manage their disability than those who experience disability as a result of a genetic defect. We feel equally that those who are disabled from birth and those who are disabled as the result of accident are not deserving of their misfortune, the same way that we consider individuals born into poverty and those who experience poverty as a result of natural disaster are not responsible for their situation. Furthermore, we do not even punitively withhold treatment for disability from those who arguably *are* responsible for their disability, such as those who suffer from BIID and self-amputate or those who acquired impairment through some poor choices of their own (e.g. through a drunk-driving accident). Therefore, I believe that reference to the genetic lottery is a useful comparison which illustrates that concerns of advanced prosthetics being 'unfair' fail to adequately recognize other ways that our capacities are unfair and that those types of unfairness can be rectified through technological means.

### Conclusion

It is for the reasons presented above that I believe objections to the use of advanced prosthetics by disabled persons on the basis of fairness are illegitimate. While it is imperative that our medical resources are used to prevent inequities, it is not troubling when those on the receiving end of compensation are brought above some NS. It would only be troubling if already privileged individuals were taking advantage of this technology and of medical resources before those most in need had the ability to access them. In the case of advanced prosthetics I believe it reasonable to say that the disabled are those most in need.

It is still possible that Howe's final concern remains: that advanced prosthetics will be unfair to the group of disabled individuals who are not disabled enough to need advanced prosthetics in the first place. This is perhaps true in the case of disabled athletes, but this seems like an internal regulatory issue for sporting bodies should sporting bodies not allow advanced prosthetics to be used for certain types of impairments. Furthermore, the advanced prosthetics I am primarily interested in are not merely used for athletic capacity, but for enhancements of all kinds including things like Mullin's legs and Harbisson's eyeborg. I am even more interested in the types of creative possibilities that advanced prosthetics offers to help alleviate and transcend all kinds of impairments. It may still remain that these types of visible cyborgification will marginalize those kinds of disabilities that are invisible, and cannot benefit from cyborg technologies for a significant period of time. However, I reject the idea that the use of advanced prosthetics will be any more erasing or marginalizing to the group of disabled individuals who are not badly enough off to take advantage of advanced prosthetics than the status quo currently is. As I argued in Chapter 3, the visibility of disabled cyborgs will ideologically impact all those currently identified as 'disabled' in that it will shift the emphasis onto what *is* possible with or without technology, and encourage a societal ideology in which impairment is a partial identity rather than an essential one.

Yet, some concerns about cyborgs and advanced prosthetics remain. Despite the benefits to disabled communities and human capacity more generally, some scholars worry that transcending the human body in the ways that the use of advanced prosthetics begins to make possible will in some way destroy what makes us human. While their concerns are about 'posthuman' technologies more generally, these technologies include advanced prosthetics as these prosthetics allow for humans to attain capacities beyond what is 'naturally' available to us.



In the next section I will address worries that advanced prosthetic use, while beneficial to disabled persons, will be too damaging to what makes us human to morally permit.

## Chapter 5: Transcendence or Terror?: Transhuman Worries

### Introduction

In the last chapter I addressed some specific worries as to why the existence of disabled cyborgs using advanced prosthetics might be morally impermissible. I examined the possibly unfair benefits advanced prosthetics offer, and the power imbalance created due to the difference between what is 'naturally' possible and what is possible through prosthetic use. While I addressed the concern that advanced prosthetics could confer unfair advantages in sporting and other contexts, there remained worries as to how the use of advanced prosthetics and the process of cyborgification may impact what makes us human. In this section I will address broader concerns that "posthumans" and the movement of transhumanism (of which advanced prosthetics are a part) will defile our humanity in a way that is morally repugnant. I will examine Francis Fukuyama and others' claims that transhuman modifications violate "human dignity" and that they assume the body is something that can and should be perfected. I will respond to these claims by showing that the body and its capacities cannot be the source of human dignity, and that modifications do not necessarily involve a striving toward perfection or the idea that perfection of the body is possible or desirable. Instead, I will return to my claim that the types of modifications that advanced prosthetics offer open up the possibilities of the body and allow us new ways to appreciate and enjoy a range of bodies, identities, and capacities.

While Fukuyama's objections to posthumanism are especially against the use of genetic modification, cloning, and other medical interventions and types of reproduction that are significantly more permanent than the use of advanced prosthetics, he worries more broadly about "biotechnology". The worries he has about biotechnologies that are also applicable to

advanced prosthetics are that the widespread use of biotechnologies will violate 'human dignity' by significantly changing the characteristics of human life to the extent that it will no longer be clear which members of human society can properly be termed 'human', and that 'humanity' will become unrecognizable. His second concern is related to other worries that I have examined briefly before; that the widespread use of biotechnology assumes that the body is a problem to be solved and furthermore, that it is not the place of medicine to enhance the body's capacities. For Fukuyama, the existence of cyborgs who use advanced prosthetics would constitute a risk to our understandings of humanity and would contribute to the medicalization of the body.

### Threats to Human Dignity

Cyborgs like Mullins, Harbisson, and Pistorious, may also be described as 'post-humans', humans that have gone beyond what is 'naturally' human and what Fukuyama and others say may no longer be human because of the enhancements which separate them from the group of individuals defined as humanity. Although it has long been contentious whether we even *can* arrive at a definition of what a 'natural' human is, or what essential characteristics of humanity look like, many have tried and Fukuyama counts himself among that group. He argues that an understanding of what human beings are is essential to talk about human rights and morality because human rights and morality "speak to the most deeply felt and universal human drives, ambitions, and behaviours."<sup>109</sup> He defines 'human nature' as "the sum of the behaviour and characteristics that are typical of the human species, arising from genetic rather than environmental factors."<sup>110</sup> He further elaborates on this definition by noting that his

---

<sup>109</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 128

<sup>110</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 130

understanding of human nature leaves room for variance within the species *homo sapiens* and that it also includes behaviours that can be learned or modified as one of the characteristics of humans is that we are cultural animals. Therefore, for Fukuyama 'human nature' "refers to something close to the median of a distribution of behaviour or characteristics".<sup>111</sup>

He believes that theories which resist an account of there being a 'human nature' are mistaken for a number of possible reasons. First, if an account of human nature is refuted on the basis of the account not being universal (e.g. "using language" is perhaps a characteristic of human nature, but not all humans use language, so how can this be universal?), he believes that the refutation is often incorrect because it presupposes too narrow a definition of universality. As he emphasized previously, we must be generous and understand human universals across a continuum. A universal characteristic could be considered universal if it has a "single distinct median, and a relatively small standard deviation" which would still allow for some few members to lack the characteristic entirely, and presumably those members would still have other characteristics essential to human nature.<sup>112</sup>

Secondly, he believes that accounts of humanity which resist the idea of a human nature may do so in error because of the confusion that arises as a result of humans being cultural animals capable of learning. Since human beings are cultural animals capable of learning, there are certain instances where what we learn overrides our natural impulses. Fukuyama uses the Aristotelian example of ambidextrousness: "the right hand is naturally stronger than the left, yet it is possible for any man to make himself ambidextrous".<sup>113</sup> As such, while being cultural

---

<sup>111</sup> *Ibid.*

<sup>112</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 135

<sup>113</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 138

animals is part of our human nature for Fukuyama, the fact that certain cultured actions may appear to contradict other facets of human nature is not actually problematic for a definition of human nature which takes cultural context into account.

This leads Fukuyama to arrive at a number of conclusions about what human nature *does* entail. He believes that there are a number of aspects of human nature which are relatively uncontroversial. These aspects include cognition, language use, emotional responses such as caring for children or pursuing revenge, and interacting in our environment so as to develop these capacities “in the ways in which they are programmed to develop”.<sup>114</sup> These aspects of human nature are the ones he believes are at risk due to biotechnological inventions.

Fukuyama again anticipates the arguments that will be raised against his and others' attempts to define human nature. He acknowledges that other scholars will point out that characteristics like cognition, language, and care are not unique to humans, and that other animals share at least in part these attributes. While Fukuyama concedes that animals share many characteristics with humans, he believes that this does not grant them the same rights as humans. For example, he believes “we would not even consider granting the right to vote, for example, to creatures that, as a group, were incapable of learning human language”.<sup>115</sup> Instead, he posits that human rights emerge out of a holistic understanding of the combination of traits that are unique to humans (e.g. language use, WITH compassion, WITH cognition, WITH the ability to learn and participate in human culture), and while animals can share in some of these rights, their sharing in those rights is unconnected to human dignity. Human dignity, he finds, arises out of

---

<sup>114</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 141-43

<sup>115</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 146

the combination of traits that define human nature. It is that human dignity, he argues, which must be protected against the possibly corruptive influences of biotechnologies.

Fukuyama believes that “human dignity” is at risk when we start playing with biotechnologies because it may “disrupt either the unity or the continuity of human nature, and thereby the human rights that are based on it.”<sup>116</sup> He believes that biotechnology will disrupt this unity and continuity of human nature because it will make us less complex due to the inherently utilitarian ends of biotechnology. While what he terms “the utilitarian ends” of biotechnology are not necessary ends, he believes that there is a “constant pressure” which exists to reduce “a complex diversity of natural ends and purposes to just a few simple categories like pain and pleasure, or autonomy”<sup>117</sup>. While biotechnology allows wonders, Fukuyama argues that its use forces a constant trade-off. He says that “we can cure this disease, or prolong this person’s life, or make this child more tractable, at the expense of some ineffable human quality like genius, or ambition, or sheer diversity”<sup>118</sup>. In the case of advanced prosthetics and cyborg technologies, we can see this worry intersecting with others that have been previously discussed in this thesis. The worry goes something like this: If we allow or encourage cyborg technologies, disabled persons will feel pressured or desire to use them. If they use them ubiquitously, this encourages the view that disability is a bad thing, and will reduce diversity and the triumphant nature of the human spirit. All disabled persons will use cyborg technologies, healthy persons will disable themselves to be able to access these types of technologies, and we will begin to live in a homogeneous world of cyborg super-humans with capacities that disconnect us from our humanity by

---

<sup>116</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 172

<sup>117</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 172

<sup>118</sup> *Ibid.*

eradicating human weakness and variety. I have already dismantled a number of these nightmares. I have emphasized that the focus should not be merely on eliminating impairment, but finding possibility. I have elaborated on how assuming it is a bad thing to disable one's self to access cyborg technologies is ableist to begin with. However, perhaps it is possible that this *pressure* to homogenise differences through technology is too great. Perhaps it is problematic for us to eliminate disability through technology because even if it will promote flourishing, the loss of diversity and suffering is too great to justify allowing impaired persons to use advanced prosthetics.

However, Fukuyama has already conceded that humans are cultural animals. The pressure that comes out of biotechnology does not seem inherently separable from the pressures that come out of culture, and the new avenues of being that are opened up by sophisticated cultures. For example, someone may experience a negative pressure to be thin because of culturally constructed norms surrounding female beauty; is acquiescing to this pressure through dieting and extreme exercise programs really any different than altering one's body through technological means? Perhaps Fukuyama would say certain types of cultural pressures are also bad, but it would seem that these cultural aspects which are a part of human dignity, necessarily already put tension on other aspects of dignity and diversity.

Fukuyama argues that diversity is imperative to human dignity (even when that diversity includes some individuals that suffer), and that furthermore, suffering is imperative to human dignity. Fukuyama emphasizes how we most admire in ourselves and others the ability to “react to, confront, overcome, and frequently succumb to pain, suffering and death.”<sup>119</sup> He notes that

---

<sup>119</sup>Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 173

we are already "...trying to narrow the range [of emotions and expressions of the self] for the utilitarian ends of health and convenience." I question, however, if that is what biotechnology results in. He gives the examples of how we change our brain chemistry with drugs such as Ritalin and Prozac, and that the use of these drugs especially for recreational use or without a prescription raises "important issues about the meaning of human dignity"<sup>120</sup>, presumably because they represent dominance over the body in their capacity to change the body and its reactions. It is not readily apparent, however, how this type of dominance is unacceptable when it is for enhancement, but not when it is for therapy. Furthermore, it is unclear how the dominance of drugs or enhancements is different from other forms of dominance such as exercise or education. It seems questionable if in altering our brain chemistry or physical capacities through the use of drug enhancements or prosthetics we are in fact narrowing the range of human experience, or merely gaining the capacity to choose which human experiences to have at which times. Presumably, an individual who has a prosthetic could still choose not to use it at certain times, as could the recreational Ritalin user. Access to these types of technologies does not mean it necessarily follows that users will use them all the time- nor does it mean that experience is narrowed. In some cases, the capacity of human experience could be broadened.

Fukuyama concedes that certain technologies may be permissible, and as such he advocates for regulations that permit therapy, but not enhancement. His position is in opposition to mine because of the unique ways in which advanced prosthetics circumvent traditional therapy. Advanced prosthetics allow for creativity and flourishing as a result of and/or in tandem

---

<sup>120</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 174



with impairment, that mere therapeutic enhancements cannot support. While I have discussed previously why it is problematic to differentiate between therapy and enhancement, nonetheless Fukuyama believes that it is possible to make that distinction. He argues that in some ways, our beliefs about therapy vs. enhancement are intuitive, that the purpose of medicine is “to heal the sick, not to turn healthy people into gods.”<sup>121</sup> In Fukuyama’s thought these beliefs are evidenced by our agreement that athletes should not use steroids, and our discomfort at the thought of genetically engineering our babies to be taller or more intelligent. Furthermore, he notes that while it may be problematic in certain cases to distinguish pathology from normalcy (e.g. homosexuality being classified as a psychiatric disorder until recently) it is possible to give a definition of health, and treat only to bring someone to that threshold of health. Even in the cases where it is possibly problematic to provide a definition of health, however, Fukuyama believes we can and do make regulatory distinctions and ban non-therapeutic use. He returns to the example of Ritalin, stating that we allow it only with a doctor’s prescription. It is unclear what implication this has on the use of prosthetics by disabled persons. Perhaps it is acceptable for Fukuyama if disabled persons access advanced prosthetics, but unacceptable for individuals with BIID or those who merely wish to access the technology with non-impaired bodies. However, even if this is the case, it seems an odd position for Fukuyama to take given his assertions about the value of human suffering. If suffering is valuable because it creates a wider range of human experiences, presumably even therapeutic interventions should not be allowed. His view could perhaps be defended on the basis that some types of suffering have more utility than others. For example, the suffering of mediocrity could be part of the range of human experience that should be preserved, but excruciating pain from a burn wound would not be.

---

<sup>121</sup> Francis Fukuyama, *Our Posthuman Future: Consequences of the Biotechnology Revolution* (Farr, Straus and Giroux, 2002), 208

Given the confusion in his position over what kinds of suffering are to be preserved and not intervened against medically it is also possible that only non-advanced prosthetics would be permissible under his scheme, because they restore capacity but do not allow for expression like Mullin's jellyfish legs or Harbisson's eyeborg. However, it is possible that disability would not fall under the range of suffering that is intolerable and that it instead contributes to human experience and therefore no intervention should be allowed- or only intervention that preserves the experience of disability (whatever that may look like for Fukuyama).

Regardless of which position Fukuyama holds, both interpretations of his position are unpalatable. If advanced prosthetics are only available for individuals with impairments, we risk creating hierarchies of disability, or saying that the impaired body is not a desirable one. If we accept only non-advanced prosthetics we deny individuals creative outlets for flourishing and fail to deal with cases like Harbisson's. His eyeborg does not allow him to see like a person with the capacity to see color, rather his eyeborg translates color into sound for him- something which is not possible naturally for humans. Are we to deny individuals like Harbisson the capacity to innovate ways to transcend their impairment and limit them from being able to resist traditional ways of being and sensing? Is only copying capacity identically (i.e. waiting for a technology that allows Harbisson to see in color the way a non-impaired individuals do) morally permissible? I have argued that advanced prosthetics are important because of the ways that they break down our notions of ability, and capacity. These arguments are not merely utilitarian in nature, nor do they seek to 'treat' disability- rather they would like to permit the exercise of autonomy by individuals best suited to the task of deciding how they want to flourish, because it is those individuals who have epistemic knowledge of their embodied experience.

### The Transhuman Other

Fukuyama is not the only one who worries about post- or trans-humans. In “Transhuman Perfection: The Eradication of Disability Through Transhuman Technologies,” David-Jack Fletcher argues that advanced prosthetic technologies may “act as a proponent for the eradication of disability” and will “further produc[e] the recipients of these technologies as the transhuman Other”.<sup>122</sup> Throughout this thesis I have emphasized how the disabled-person-as-cyborg can be seen a representation of possibility, but this does not mean that they will not be identifiably Other. Perhaps the ‘Othering’ nature of cyborgification is enough to challenge the positive benefits conferred by existing as a cyborg. Fletcher sees the Othered nature of the cyborg as a continuation of the Othered nature of the disabled person. By cyborgifying disabled bodies, Fletcher believes we are merely imposing a “biopolitical hierarchy” on disabled persons, and continuing to Other them even as they transition to being cyborg persons.<sup>123</sup>

Unlike Fukuyama, Fletcher leaves room for the possibility of certain technologies to accommodate disability as opposed to providing therapy or enhancement. He distinguishes accommodation from therapy or enhancement by using the example of Braille. He finds that certain technologies such as Braille and adaptive computer software in fact challenge biopolitical hegemonies because they make a wider range of bodies acceptable, and enable disabled bodies to participate in the same actions as able bodies without requiring the body to change in any way. Presumably some cyborg technologies such as Harbisson’s eyeborg would fall under this umbrella. It would seem then that the issue with cyborgification and the Otherness of the cyborg body is a conditional one for Fletcher. In addition to the exceptions he makes for technologies

---

<sup>122</sup> Fletcher, David-Jack., “Transhuman Perfection: The Eradication of Disability Through Transhuman Technologies.” *Humana Mente* no. 26 (2014), 85

<sup>123</sup> Fletcher, David-Jack., “Transhuman Perfection: The Eradication of Disability Through Transhuman Technologies.” *Humana Mente* no. 26 (2014), 91

which accommodate impairment and allow those with impairments to participate in similar ways to able-bodied persons, it seems plausible to extend his view to allow for the possibility that over time the proliferation of cyborgs would result in a change in the status of cyborg as “Other” entirely, nullifying the concerns of Othering disabled individuals further through cyborgification.

### The Bought Body

While I have shown that the disabled cyborg is not necessarily an affront to human dignity, nor is it necessarily Othering, some anti-posthuman writers remain concerned that viewing the body as something to be bought commodifies the body in an unacceptable way. In “The Ethics of Seeking Bodily Perfection,” Brett Lunceford examines the ways in which the commodification of the body through plastic surgery negatively impacts the way we view the body, and many of his arguments may be applicable to the use of advanced prosthetics as they are also in some way body parts that can be bought. Lunceford argues that “Once the body begins to be seen as malleable, with parts that are replaceable, there is seemingly no limit to what can be done”<sup>124</sup>. He notes that in “the literature surrounding cosmetic surgery patient satisfaction is a key focus”<sup>125</sup>. The satisfaction that patients have with cosmetic surgery can be seen as analogous to Mullins’ or other disabled persons’ satisfaction with their advanced prosthetics, and he challenges this satisfaction by questioning the idea that those who seek enhancement are doing it purely for themselves.<sup>126</sup> He believes that when we accept the idea of physical enhancements being a choice we are being naïve, and ignoring the fact that we live in a society which creates concepts of beauty. Furthermore, when we view parts of the body as buyable,

---

<sup>124</sup>Lunceford, Bruce., “The Ethics of Seeking Body Perfection, with continual reference to Heidi Montag.” *Global Issues and Considerations in Human Enhancement Technologies* ed. Steven John Thompson (IGI Global: 2014), 76

<sup>125</sup> *Ibid.*

<sup>126</sup> Lunceford, Bruce., “The Ethics of Seeking Body Perfection, with continual reference to Heidi Montag.” *Global Issues and Considerations in Human Enhancement Technologies* ed. Steven John Thompson (IGI Global: 2014), 77

Lunceford argues that we invite a view in which “the body is no more than the sum of its parts.”<sup>127</sup> He too sees the kind of posthuman rhetoric that is created by plastic surgery and a commodified view of the body as dangerous because he sees the posthuman view as being one which states “that the body is intrinsically flawed and in need of technological intervention.”<sup>128</sup> Furthermore, he believes that the proliferation of bodies that are altered through surgery or technology will further reinforce societal norms of beauty and acceptable bodies.

It is my argument, however, that bodies are not ‘bought’ in any more meaningful way than anything else is ‘bought.’ The body is created and shaped by a multitude of forces such as society, exercise, eating habits, *and* many of those forces are economically enabled or driven. A rich suburban mother may ‘buy’ her post-baby body through exercise, personalized diets, and trainers, but should the individual who is perhaps unattractive by conventional beauty standards or is disabled be disallowed from ‘buying’ her body or parts of it from surgeons and prosthetics manufacturers? Lunceford concedes that there is an allowable balance between autonomy and justice for society as a whole. However, I have contended that one of the unique features of the cyborg is that it is not merely about reinforcing traditional standards of beauty or replicating traditional bodies, but rather that, especially with enhancement prosthetics, cyborgs are about creating new bodies and new ideas of beauty and acceptable bodies through creatively building in the space that impairment leaves.

## Conclusion

---

<sup>127</sup> Lunceford, Bruce., “The Ethics of Seeking Body Perfection, with continual reference to Heidi Montag.” *Global Issues and Considerations in Human Enhancement Technologies* ed. Steven John Thompson (IGI Global: 2014), 78

<sup>128</sup> Lunceford, Bruce., “The Ethics of Seeking Body Perfection, with continual reference to Heidi Montag.” *Global Issues and Considerations in Human Enhancement Technologies* ed. Steven John Thompson (IGI Global: 2014), 80

In conclusion, it appears that many objections to posthumanism more broadly take a narrow view of what posthumanism entails and the creative possibilities that posthuman bodies are capable of. In this chapter I have examined Fukuyama's argument that the transhumanification of humans is dangerous to human dignity and involves claims that the body is a problem to be solved. I have argued that transhumanification is not necessarily about reducing the body to its utilitarian ends, nor is it possible to differentiate in any meaningful way in certain cases of disabled bodies what constitutes therapy and what constitutes enhancement. Furthermore, I have considered claims that transhumanism turns the body into a commodity and argued that cyborgification is no more commodifying than other ways of altering the body. Finally, I have refuted the idea that the commodification of the body even in the name of autonomy is problematic because it alters societal ideas of beauty, because this idea, too, presupposes a narrow view of the possibilities that transhumanism and cyborgification offer. In addition, I suggest that the status of the cyborg (and therefore the continued status of the disabled person) as Other is a fact contingent on the continued marginalization of cyborg bodies when in fact the cyborg making visible the bodies of disabled persons, and the proliferation of cyborg bodies, would seem to reduce the Other-ness of transhuman bodies over time. Now that I have considered and assuaged worries surrounding disabled cyborg bodies and the idea of altering the body and the proliferation of the transhuman movement more broadly, I would like to consider some of broader implications of the ideas discussed in this thesis. I will conclude by offering some thoughts as to how the proliferation of cyborgs, and disabled cyborgs in particular, may shape society into the future. Furthermore, I will examine some of the implications the existence of cyborgs has on our ability to talk about disability, and suggest that an attention to partial

identities requires a re-evaluation of the appropriateness of talking about disability at all, while also demanding that cyborgification not erase the disabled body or disabled experiences.

“I would rather be a cyborg than a goddess”: Some final thoughts on cyborgification and the disabled body

As stated at the beginning of this endeavor, my goal throughout this thesis has been to demonstrate the moral permissibility of the use of advanced prosthetics by individuals with disability, and furthermore to show how the use of advanced prosthetics and cyborgification of individuals with disabilities breaks down binaries between ability and disability. To do this, I began by looking at the inadequacy of our current theories of disability and understanding of disabled bodies. I attempted to elucidate the problems of understanding disabled bodies either in terms of the medicalized model or the social model, and therefore advocated for a modified medical approach.

I then began to examine the impact of advanced prosthetics on understandings of disability. I looked at the experiences of individuals like Aimee Mullins, Neil Harbisson, and Oscar Pistorious with their prosthetics, and examined the ideology of the cyborg more broadly. With reference to Donna Haraway, I suggested that the concept of cyborg when applied to disabled bodies further revealed the problematic nature of the medicalized and social models of disability and that furthermore, the cyborgification of disabled bodies resulted in the breaking down of the binary between ability and disability. I suggested that this breakdown was beneficial for disabled persons as a group, regardless of whether or not individuals with disabilities chose to access the technology available to them.

Finally, I considered some objections to the proliferation of advanced prosthetics. I refuted the idea that advanced prosthetics would create an unfair state of affairs by examining the ways in which our understandings of fairness as they relate to able bodies and disabled bodies



implies a “norm” which is discriminatory to individuals with impairments. Furthermore, I began to suggest a flourishing standard which would justify the permissibility of advanced prosthetics at the very least outside of sporting contexts. I also considered objections to advanced prosthetics on the basis of anti-posthumanist sentiments. I suggested that the anti-posthuman movement fails in its endeavor to show that there is something intrinsic about human dignity which technological intervention violates. Furthermore, I emphasized how arguments against posthumanism fail to accurately understand that posthumanism is not merely about the perfection of the body- but rather is about allowing for a range of bodies and identities which can be both traditionally healthy and also creatively designed or *different* from ‘natural’ bodies without necessarily aiming at perfection. This is not to say that improvement or enhancement of the body is not a goal of transhumanism, but rather it is to say that it is not the *only* goal, and furthermore, that the plethora of goals reflects the plethora of bodies that exist and can in fact make disabled bodies and other bodies that do not fit ‘norms’ more acceptable by widening the range of possible bodies.

#### Making sense of disability in a cyborg world

Throughout the course of making a case for the moral permissibility of cyborgs, I revealed a number of possibly concerning inaccuracies in the way we think and deal with disability. First, I highlighted the fact that we treat disability holistically. In the course of my discussion about how cyborgs break down binaries between ability and disability, I suggested that because of this tendency, it made sense to talk about capacities and impairments, disconnected from an idea of what ‘disability’ entailed. I used what I called a ‘modified medical’ view for simplicity’s sake so that the group of individuals I was talking about (those with impairments) were easily identifiable. However, with the proliferation of advanced prosthetics,

many of those impairments become moot. Therefore, if we are to permit advanced prosthetics and recognize the cyborgification of disabled individuals, does it even make sense to talk about disability anymore?

I would argue that it does not make sense to talk using the rhetoric of disability anymore, but I do not think that this will lead to an erasure of disability. Given the inaccuracies involved in the term 'disability', the erasure of the term does not necessarily seem to be a bad thing. In the same way that the ideology of the cyborg demands that attention be given to partial identities, moving away from "disability" and transitioning to "impairment" instead demands that attention be given to what exactly the impairment entails. This would hopefully lead to greater attention and care being given to individual disabled persons' needs. For example, instead of dismissing an individual with a physical impairment as merely "disabled," attention could be given to the particularities of their physical impairment- perhaps they can walk, but moving up stairs is still a problem. This would in turn lead to more specific accommodations of disability as opposed to a 'one-size fits all' approach. Furthermore, it would give greater distinctions to the differences between physical disabilities, mental illnesses, and learning impairments. Currently, all can be lumped under the term 'disability' which makes the term only marginally useful unless it involves a further exploration of the particular impairments, capacities, and accommodations which are needed. Cutting out discussion of 'disability' in these cases would then merely be cutting out the middle-man.

### Flourishing and Regulatory Schemes

Besides the implications of my arguments on the term 'disability', I have failed to elaborate on the implications of advanced prosthetics' moral permissibility. I have suggested that they should be permitted and accessible on the basis of the ideological impact of the cyborg and

the opportunities for flourishing they permit. However, I have not elaborated on what 'flourishing' might look like in a cyborg world, nor have I expanded on how we are to enable disabled persons to flourish through the use of advanced prosthetics. While disabled individuals are largely disadvantaged, we live in a world of finite medical resources which must be carefully spent. Therefore, the flourishing enabled by advanced prosthetics and the utility created by that flourishing and the breakdown of disability ideologies must be weighed against other interests to determine what types of infrastructure should be put in place to support the cyborgification of persons. Furthermore, there are still considerations to be had in regards to which impairments should be privileged when distributing advanced prosthetics, and how we may prevent economic inequities from becoming further entrenched through the benefits offered by cyborgification. There is a possibility that advanced prosthetics may be able to be widely distributed and that the proliferation of advanced prosthetics could be controlled to ensure the least well off access them first due to the increasing accessibility of 3D printing technologies, but none of this is certain or can be sufficiently demonstrated in a thesis of this size.

### Final Thoughts

In conclusion, while there remain questions as to the implications of cyborgs on the accuracy of the term 'disability' and it is uncertain how cyborgs may be regulated and supported by medical resources in our society, I have sufficiently demonstrated that cyborgs and particularly disabled cyborgs are morally permissible. It is my hope that the types of questions raised in this thesis in regards to identity, marginalized groups, and technology will build upon the base work created by others, and further philosophical inquiry into the implications of technologies upon vulnerable groups and into the implications of transhumanist movements more broadly. We have not entered a posthuman society, nor a society of cyborgs, yet they

continue to proliferate around us. We must question the morality of the new world we build, while simultaneously continuing to interrogate the world and norms of the society we currently inhabit. While some find hope in cyborgification some also find fear. However, it is my hope that in interrogating the ideological implications of the cyborg and cyborgification's impacts on the group that stands most to benefit from innovations in advanced prosthetics, we may gain some understanding of why both of these emotions come in to play, and how we may mediate between them. While cyborgification may not be for everyone, it is my contention that it should be permitted. While godhood is not nearly so attainable as cyborgification, even if it were I believe that many would stand with Donna Haraway, and proclaim "I would rather be a cyborg than a goddess". We cannot be gods, but we can transcend the idea of normal bodies and modes of being in the world. Let us have our partial identities, our impairments, and our capacities. Let us be cyborgs.

## Works Cited

- Aimee Mullins: My 12 pairs of Legs. (2009). TED Talks.
- Baker, D. (n.d.). *Bound to Be Normal*. Consortium for Science, Policy, and Outcomes. Arizona State University.
- Baril, A. (2015). How dare you pretend to be disabled? The discounting of transabled people and their claims in disability movements and studies. *Disability and Society*, 30.
- Davis, D. (1997). Genetic dilemmas and the child's right to an open future. *Hastings Center Report*, 27.
- Davis, D. (n.d.). Genetic Dilemmas and the Child.
- Fletcher, D.-J. (2014). Transhuman Perfection: The Eradication of Disability Through Transhuman Technologies. *Humana Mente*, 26.
- Fukuyama, F. (2002). *Our Posthuman Future*. New York: Farrar, Strauss and Giroux .
- G, F. (1986). On Embodiement: A case study of congenital limb deficiency in American culture. *Culture, Medicine and Psychiatry*, 10.
- Grey, C. H. (Ed.). (1995). *The Cyborg Handbook*. London: Routlege.
- Grey, C. H. (2002). *Cyborg Citizen*. New York: Routlege.
- Haraway, D. (1994). *A manifesto for cyborgs: Science technology and socialist feminist in the 1980s*. Cambridge: Cambridge University Press.
- Harbisson, N. (2012). I Listen to color. TED Talks.
- Holtug, N. (1999). Does justice require genetic enhancements? *Journal of Medical Ethics*, 25.
- Howe, D. (2011). Cyborg and Supercrip: The Paralympics Technology and the (Dis)empowerment of Disabled Athletes. *Sociology*, 45(5).
- Moreton, C. (2012, Aug 4). London 2012 Olympics: Oscar Pistorius finally runs in Games after five year battle. *Telegraph Co UK*. London: Telegraph Co .
- Pallasch, A. (2007, July 2). Denied service for using her feet, woman claims. Chicago: Chicago Sun Times.
- Plumwood, V. (1993). *Feminism and the Mastery of Nature*. Routlege.
- Scully, J. L. (2008). *Disability Bioethics*. Maryland: Rowman & Littlefield.
- Shakespeare, T. (2005). Disability, Genetics and Global Justice. *Social Policy & Society* , 4.

Smith, M. (2006). The vulnerable articulate: James Gillingham, Aimee Mullins, and Matthew Barney. In M. Smith, & J. Morra (Ed.), *The prosthetic impulse: from a posthuman present to a biocultural future* (pp. 43-72). Cambridge, MA: MIT Press.