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AUGMENTED ABILITY, INTEGRATED IDENTITY: UNDERSTANDING SAPIENISM, ADAPTIVE TECHNOLOGY, AND THE CONSTRUCTION OF DISABILITY

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Abstract

To some, individuals with disabilities are loathsome objects of pity, where wheelchairs are symbolic of confinement. While the words used to identify the disabled have changed, the connotative perceptions linger. Rather than choose another phrase that relies on the language of loss, this thesis calls for a language that depicts the true nature of the disability community, one of technological adaptation: a cyborg community. Ray Kurzweil and Donna Haraway believe the integration of technology into our bodies provides the opportunity to normalize or amplify human ability. David Noble and Willem Vanderburg argue this penetration subverts our humanity, a stance I dub sapienism. With Iain Banks and Richard Morgan's perceptions on imbedded technology and identity, I suggest that while the adaptive technology used by the disabled may penetrate the body and alter our identity, it is a site for liberation rather than a source of limitation.

Keywords
DISABILITY STUDIES, CYBORGS, SCIENCE FICTION, TECHNOLOGY AND HUMANS, RICHARD MORGAN, IAIN BANKS

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Introduction

In 1983, a doctor informed my parents that their lives would never be the same; their son was diagnosed with Congenital Muscular Dystrophy. Muscular Dystrophy, a degenerative disease that converts an individual's muscle into fat, means that I will never walk and forever be reliant on a wheelchair. To some, this news would have been devastating, but my parents firmly believed that with hard work and perseverance I could achieve anything I set my mind to. Of course, growing up with a physical disability provided its share of adversity; however, I have never felt hard done by or disadvantaged. In part, my parents formed this optimistic attitude, but ultimately it is the use of ever-evolving adaptive technologies that allow me to live a relatively "normal" life—I may do things differently, but I'm still very active. To overcome my inability to reach up or bend down, I use a pair of barbeque tongs to extend my reach and pick up objects I have dropped or are too high to grab. With the use of a laptop to augment my inability to write with a pen or pencil, I was able to participate in elementary school and build the educational foundations necessary to enter a post-secondary institution upon graduation. Of course, larger adaptations have played a huge role on my life as well, like the electric wheelchair that has given me the mobility to live independently and play my favourite sport—electric wheelchair hockey.

Despite my success, many strangers I encounter still regard me with a sense of pity and paternalism. To many, I am, and will always be, the "poor boy" in a wheelchair, "suffering" through life with a "horrible" disease that "ravages" my body. I am constantly being told how "strong" and "courageous" I am, simply because I am living a normal life.

To the general population, disability is largely seen as being an insurmountable obstacle that weighs down an individual: where I see normality, many others see sickness and loss. Nowhere is this more obvious than in the terminology used to define the population; gimp, cripple, handicap, disabled, et cetera. As I will be discussing throughout this paper, the language of disablement is inherently wrapped in negative connotations. I believe the only way to emancipate ourselves from these inaccurate perceptions is to liberate ourselves from the language entirely. Having said that, for the purposes of this paper I will be using the generically understood term "disability" to identify an individual who has been medically diagnosed with a functional impairment, whether it be physical, intellectual, social or otherwise. While I am forced to cede with this classification for practical and comprehensive reasons, I intend on veering from the norm and also structure a definition for a segment of the able-bodied population, who I call the "nondisabled."

Unfortunately, it is not as simple as dividing the population up into two tidy categories: disabled and able-bodied. Given my understanding of the word "disability," it is used to define anyone with a limitation or lack of ability. Ultimately, this defines everyone, as we all have some form of limitation. Furthermore, we all have the potential to become injured or develop a disability later in life, losing our perceived status of "able-bodied." The line between disabled and able-bodied also begins to blur as people come in close contact with the disabled, as I'm sure the experience my family has had living with me has left them with a far different perception of what it means to be disabled than someone who has had little or no contact with disability.

It is for this reason that I propose a new category of people, whom I identify as "nondisabled." Rather than dividing the population along the lines of those with ability and those without, this distinction falls along the lines of people who do not look at themselves as being disabled: self-constructed "normal people." Furthermore, this category is reserved for people that, by no fault of their own, agree with and believe in their hearts that disability is negative or problematic. While there are many explanations as to why they perceive disability as being a limitation, this could be because they have had little contact with the disabled population. It could also be because they just can't see past the physical differences and feel that individuals with disabilities are simply inferior. This is when the category begins to blur, as I have personally met a lot of kind and compassionate people who, unfortunately, still believe the way I live my life must be difficult in one way or another. I do not mean to imply the "nondisabled" as a negative connotation, despite the predominate negativity of the prefix "non." Rather, I am constructing a signifier for individuals, a large swath of people who are a vast majority compared to the disabled population, who simply do not have any personal exposure with disablement and for that very reason do not, and *cannot*, understand the experiences of the disabled population. Ultimately, I believe this population exists in part because the disabled population is just *now* beginning to emerge from institutional lives—it is difficult to know and understand us when were being hidden in the shadows.

In recent years, the disability population has fought its way out of institutions and into public society. Laws to ensure accessibility for individuals who have been identified as disabled now mandate that public spaces across Ontario be accessible. These laws provide access to education and employment for individuals with disabilities—something

the community desperately needs. While past achievements are heralded by disability rights activists as being revolutionary, problems still plague the disabled community, like the reality that the nondisabled do not accept the disabled lifestyle as part of the status quo, leading to segregation, paternalism and strife.

Disability scholars have set out to rethink what it means to be disabled and to replace the current *medical model of disability* with a *social model of disability*. Under the medical model, disability is internalized, causing the "affected" individual to face a myriad of obstacles and struggles as a result of a medically diagnosed "ailment." Under this model, it is the responsibility of the individual to begin adapting to "normal" life.

The field of disability studies has given rise to a tremendous amount of critical thinking, as scholars begin to grapple with some of the philosophical issues facing the disabled population. One of the first barriers these scholars must overcome is to rethink disability outside of the medical model, which was developed by the medical industry to give doctors and nurses the language to adequately manage individuals with perceived physical or intellectual limitations. The medical structuring of disabled life has bled into mainstream society, to the point that most nondisabled people consider disability to be negative: a sickness or disease that must be cured or rectified.

To counter this methodology of thinking, disability theorists like Simi Linton and James Charlton are constructing a framework to begin looking at important issues like representations of disability. The newly philosophized social model of disability conceives disability as being external—a result of the environment surrounding the individual. According to the social model, the medically diagnosed "disability" is not

restrictive; rather, our society's refusal to adapt to the specialized needs and abilities of the disabled population limits our ability to fully integrate.

Despite this excellent work, the field of disability studies suffers from a lack of writers, scope and direction. Few outside the field know anything about the social model of disability and even those within the field have spent a majority of their time arguing over the political correctness of the phrase "people with disabilities" versus "disabled people." While I agree there is some merit to this type of wrangling, these academics miss the mark, relying on language that drips with stereotypes of loss and struggle—namely, the word disabled. As a community, we cannot hope for inclusion when we still define ourselves as being *dis*abled, regardless of "person first" modifiers.

Of course there is a *need* to use phrases like disability to identify a specific segment of the population, particularly when discussing state-run support programs. Undeniably, I look different from the average nondisabled individual, especially because I spend close to 16 hours a day sitting in my electric wheelchair. Furthermore, as a result of architectural structures, like stairs, my inability to walk limits where I can go. While there may be no bars on our windows there are *certainly* stairs at our doors. It is the wheelchair, not my physical limitation, which is largely seen as being the barrier.

While this new model of disability works on a macro level, it also does little to explain the disability experience on a micro level. Until the nondisabled public understands and acknowledges the disabled lifestyle as being normal, the current accessibility laws are meaningless. In order to pave the way for an inclusive future, we must first deal with the fundamental visual signs of difference, specifically, perceptions of adaptive technologies.

The wheelchair, one of the most common signifiers of disablement, has developed some interesting stereotypes. To some, my wheelchair is evidence of an intellectual disability, while to others it is indicative of deafness. My wheelchair has become a defining character trait for me: people genuinely believe I am "confined to a wheelchair." To the nondisabled, I appear restricted by my *inability* to walk and my electric wheelchair is a symbol of my struggles. In truth, my electric wheelchair has always been a beacon of hope in my eyes—a sign of independence and mobility.

The language used to talk about my interaction with my wheelchair is not unique. Rather, it has much in common with the same language used by sapienism writers talking about the invasion of technology into our lives. To writers like Jacques Ellul and David Noble, the prospect of becoming reliant on a piece of technology or machine is reason to take pause and reconsider how we are living our lives. Sapienist writers are obsessed with maintaining our organic forms intact or risk losing our humanity entirely. It is for this reason that they often look at our relationship with machines as being one of servitude, reliance and loss—just like how the nondisabled population perceives the machine-using disabled. In Chapter 1, I will look at the language and perception of machines by sapienism writers, like Ellul and Noble, to explore how, in part, it is our trepidation of machine use that fuels and validates our negative perceptions of disability and forces us to segregate our population along lines of "can" and "cannot."

Ultimately, there is no need for us to segregate the disabled and nondisabled populations, as they are inherently identical. As North Americans, we all reach for technological adaptations to make our lives easier: in the same way, my electric wheelchair augments my legs. From our increasing reliance on large machines, like cars,

or small digital technologies, like cell phones, we constantly use technology to compensate for our apparent *lack* of ability, whether it be to travel at faster speeds or communicate over long distances. It is for this reason that in Chapter 2, I postulate that rather than segregating the disabled and nondisabled populations, we begin rethinking the disabled body not as *broken*, marked by suffering and a loss of humanity, but rather, as a naturally flawed human body that incorporates machine adaptations to further its ability: a cyborg.

This realization led me to cyborg writers, specifically Donna Haraway and Rosanne Allucquere Stone, who both point toward a future where humans will obsessively insert machine elements into our bodies to adapt and enhance our abilities. When linked to disability, these cyborg ideas dovetail nicely into the extropian movement, individuals who focus on the evolution and improvement of humanity, with writers like Ray Kurzweil who talks about cyborgs, writing about the possibility of a future where all people begin to incorporate machines into their bodies in much the same way that I rely on my electric wheelchair. I am interested that none of these writers considers that a cyborg population already exists in our society: the disabled community. Over the second chapter, I will look at how Post-human and Extropian writers see the oncoming cyber age, how these writers believe it will affect our perception and understanding of the body, and how these ideas compare to my own experiences living in wheelchair for the past 20 years.

The final chapter will then use this foundation to begin rebuilding the language of disability, introducing and explaining my theory of *The Spectrum of Ability*. I postulate a new method of classifying and identifying the disabled population—one that takes the

focus of cyborgization, enhancement and adaptation of ability, and brings them to the forefront rather than hiding them with embarrassment. Because there are unquestionable visual differences between the physically disabled and the nondisabled, and the disabled's need for social and medical support, I suggest rather than attempting to classify individuals by what is *wrong*, we instead begin looking at what people can actually *accomplish*—their abilities. By placing everyone, disabled or otherwise, along the same continuum we can break down the linguistic and interpretive segregation that divides these two populations and begin focusing on helping people to enhance their abilities. It is through this restructuring and refocusing of adaptation that we truly can emancipate the disabled population.

Chapter 1
Pure Flesh and Murderous Machines

1.1 Methodology – An Exploration of Discourse Analysis and Deep Reading

To understand the perceptions of disability and adaptive technology we must first understand the discursive community in which it exists. In a typical discourse analysis, the strategy of inquiry is to select a text within a specific genre or period and look at the language and images present that produce the connotative messages encoded within the text. The researcher critically interacts with the text and develops a coding framework for all of the different discourses—sounds, images, plotlines—being deployed in the text. A common methodology for critical discourse analysis comes from linguist Jan Blommaert, who uses Norman Fairclough's three-dimensioned blueprint for this type of research. Blommaert explains, on the first level, the researcher must read "discourse-as-text," looking at the textual conventions present inside the text being researched (Blommaert 448). The next step is to look at the text as "discourse-as-discursive-practice," where the researcher will look at the text as "...something that is produced, circulated, distributed, consumed in society" (Blommaert 448). Finally, the researcher will interrogate the "discourse-as-social-practice," where they will look for the "ideological effects and hegemonic processes" operating in the texts (Blommaert 449). Through this process, the researcher is able to think about the "opaque as well as transparent structural relationships of dominance, discrimination, power and control as manifested in language" (Blommaert 448).

In a discourse analysis, the role of the researcher is two-fold. On one hand, the researcher must intimately mingle with the data, viewing the text and recording and categorizing the messages discovered. Once the different strains of discourse are identified, the research can then critically analyze these messages, interpreting the connotative meanings that form and influence popular discourse.

The researcher's role then switches to that of interpreter, who seeks to understand the text's possible connotative meanings. While literature is an important source of inquiry, the researcher must also focus on understanding what structures and controls that limit a specific text, as the political economic situation of a text will influence the messages being encoded.

Discourse analysis is valuable to media researchers because it provides an opportunity to critically look at the language and images inside a text, something that is less likely to occur in most quantitative methods. By employing discourse analysis, the researcher is able to gain access to deeper connotative meanings that are hidden beneath the denotative surface of the data, and arrive at qualitative answers to questions about the text's key messages, what meanings can be taken from the language and images and how the text influences public discourse, which is especially important to media research, who look at media products that are often based inside specific discursive formation and heavily influence the public discourse.

In the same way that the strength of discourse analysis comes from its flexibility, one of its major limitations is that sometimes it is just *too* flexible. Because it is a qualitative method, discourse analysis is not interested in or able to provide quantitative results to prove a researcher's claims, which can be a problem for some academics who

rely heavily on statistical significance. The result is that the reader is often left questioning what authority the researcher has to decide what connotative meanings are truly imbedded in a text, or whether the text is even supposed to carry some sort of deeper meaning.

An issue that stems from this limitation is that in many instances, the researcher's past experiences guide their interpretations of the meanings imbedded in discourse. As an individual who uses an electric wheelchair, I will interpret a text's connotative meanings about wheelchairs differently than someone who does not regularly use a wheelchair. This schism occurs because we all have different lived experiences that form our perceptions of the world. For this reason, discourse analysis becomes extremely difficult to replicate, as every researcher will approach a text from a different historical and socio-political perspective.

This lack of certainty leads to the main limitation of discourse analysis; it has no way of truly answering what a producer wants a reader to think or learn when interrogating the text. While the researcher can employ discourse analysis to make educated guesses at what the text states or what meanings people interpret, the only real way to know what a producer intended to encode into the text is to simply ask them. Furthermore, there are instances where producers have intended a specific ideology to be encoded into a text, while the audience has received a wholly different meaning. Despite this limitation, I feel for my research it is *more* important to look at what messages are actually present (or at least those I can see), rather than the intended meanings, as it is these messages that construct the current discursive formation of disability in our society.

1.2 Semiotics and Disability

The philosophical basis of discourse analysis relies heavily on the work of semioticians and discourse thinkers, like Michael Foucault. Although "disability" is just a word, it carries with it deep connotative meanings that have been generated by the nondisabled population to depict how they believe life would be if they had a disability. The nondisabled constructs a sign system through the use of discourse. Stuart Hall explains that Foucault defines discourse as,

> a group of statements which provide a language for talking about – a way of representing the knowledge about – a particular topic at a particular historical moment. ... Discourse is about the production of knowledge through language. But ... since all social practices entail *meaning*, and meanings shape and influence what we do – our conduct – all practices have a discursive aspect. (44)

According to Hall, discourse can be considered any form of communication, whether it is the verbal, written, or the graphical transmission of a message: everything we do is controlled and influenced by, as well as productive of, discourse. Language has the ability to both communicate messages as well as limit what we are able to talk about—if the appropriate words do not exist, we cannot discuss that specific topic. By framing what and how we communicate, discourse identifies our societies' perceptions of the surrounding world.

To understand public perceptions of disability, one need only consider the language, both past and present, used to describe the disabled population. A repetition of themes has crafted a specific understanding of what it means to be disabled, and who the disabled are:

> Socialization works on simple symbols, simple repetition. Over and over the myth as message is repeated: disability = sickness/deformation; sickness = helpless and

> deformation = abomination; helpless = protection and abomination = asexuality; asexuality = childlike; childlike = helpless/protection; helpless/protection = pity; pity = disability. (Charlton 68)

Although politically correct terminology has changed over the years, the foundation of derogatory terms for the disabled has changed little. Words like gimp and cripple have been deemed inappropriate because they are imbued with negative connotations; new identifiers, like "handicapped" and "disabled," have begun to develop these same negative meanings because "the kinds of images that terms like 'cripple,' 'invalid,' 'retard,' 'confined to a wheelchair,' 'blind as a bat,' and 'deaf and dumb' generate have an ideological and therefore social and cultural impact. The words used to describe disability are loaded with social connotations" (Charlton 66). By pulling apart the term disability we can see that it is composed of understandings of victimization, loss, pity, paternalism, suffering and sickness.

At its core, the word "disabled" means a loss or lack of ability. Simi Linton explains that "*Stedman's Medical Dictionary* (1976) identifies *disability* as a 'medicolegal term signifying loss of function and earning power,' whereas *disablement* is a 'medicolegal term signifying loss of function without loss of earning power'" (11). This definition is telling as it claims disability has a direct correlation to loss of ability and power in monetary terms. Furthermore, consider the prefix "dis" and its use in the English language. Linton sees this prefix as the fault-line that is drawn between the disabled and nondisabled populations (31). Predominantly, this prefix signifies absence, opposition, deprivation, and removal, as well as

> the prefix *dis* connotes separation, taking apart, sundering in two. The prefix has various meanings such as not, as in *dissimiliar*; absence of, as in *disinterest*; opposite of, as in *disfavour*; undo, do the opposite of, as in *disarrange*; and deprive of, as in *disfranchise*. The Latin root *dis* means apart, asunder. Therefore,

> to use the verb *disable*, means, in part, to deprive of capability or effectiveness. The prefix creates a barrier, cleaving in two ability and its absence, its opposite. Disability is the 'not' condition, the repudiation of ability. (Linton 30)

Even the vernacular acknowledges "dis's" negative connotation, with the popularized term "to diss someone" being used to define slander or attack on a person, their character, or both. These connections cannot be ignored, especially when "dis" is used to exclude an entire population.

While discourse actively engages in all modes of communicative practice, one site where it is particularly powerful is in storytelling, where Foucault argues that "...there is barely a society without its major narratives, told, retold and varied; formulae, texts, ritualized texts to be spoken in well-defined circumstances things said once, and conserved because people suspect some hidden secret or wealth lies buried within" ("Discourse" 220). By telling and retelling these stories, a society is capable of generating specific meanings and understandings of the world, constructing the reality. It is in this creation and redistribution of meaning and understanding that discourse is formed and strengthened, generating the language and the ideas that structure all future conversations on the subject.

Roland Barthes, semiotician and cultural theorist, also believes storytelling plays a pivotal role in the generation of meaning and understanding. Evolving from the foundational semiotician Ferdinand de Saussure, and his notion of the sign/signifier, Barthes' second-level of communication, mythology, "is a system of communication, that it is a message. This allows one to perceive that myth cannot possibly be an object, a concept, or an idea; it is a mode of signification, a form" (Barthes 109). To Barthes, the stories we tell ourselves are inherently wrapped in meaning, promoting a collectively

agreed upon collection of values and perceptions. It is through these stories that a deeper level of signification is achieved, allowing images and words to convey deeper ideological meanings and understandings. A prime example of this depth is the myth of wine in France, which is often associated with virility and robustness according to Barthes (58-61). In this instance, a popular fermented beverage has become intimately associated with several deeper connotative meanings that have little basis in the physical world.

The process of signification similarly functions to construct the myth of disability. While most people argue that they have no personal experience of what it means to be *disabled*, they do have a general idea of what it must be like. These ideas are informed by the myth of disability that is constructed largely by the nondisabled to help explain and understand what it means to be disabled. This message is then disseminated to the public at large through various forms of communication, including but not limited to, the media[1]. These ideas of disability are generally based on how the nondisabled assumes it must feel to *lack* ability. Using the language of disability as a foundation, "These attitudes are almost universally pejorative. They hold that people with disabilities are pitiful and that disability itself is abnormal" (Charlton 25). Simi Linton goes one step further, explaining that "much of the language used to depict disabled people relates the lack of control to the perceived incapacities, and implies that sadness and misery are the product of the disabling condition" (25). It is because of the myth of disability that people form the opinion that disability is inextricably linked to loss, suffering, victimization, sickness, pity, and paternalism.

[1] By media, I am referring to corporate mass-productions, such as print (magazine, newspaper, etc), radio, television, and digital media (websites, blogs, podcasts, etc)

The key perception in the myth of disability is that of loss and victimization. As the nondisabled first encounter disability, they first identify what an individual cannot do "normally," asking questions about what is *wrong* or what *happened.* Having discovered the reason for the difference—in my case, the use of an electric wheelchair—the nondisabled seem to automatically assume that I am suffering from this medically diagnosed disability. Linton notes that this is not uncommon:

> Disabled people are frequently described as *suffering from* or *afflicted with* certain conditions. Saying that someone is *suffering from* a condition implies that there is a perpetual state of suffering, uninterrupted by pleasurable moments or satisfactions. *Afflicted* carries similar assumptions. The verb *afflict* shares with *agonize, excruciate, rack, torment,* and *torture* the central meaning 'to bring great harm or suffering to someone.' (26)

Closely linked to this notion of loss is that of victimization, associated with the common phrase "suffering from a disability." Although it is easy to state that not all people with disabilities suffer from their limitations, Linton feels there is still harm being done: "The use of the term victim, a word typically used in the context of criminal acts, evokes the relationship between perpetrator and victim. Using this language attributes life, power, and intention to the condition and disempowers the person with the disability, rendering him or her helpless and passive" (25).

The idea of disempowerment leads to the next element in the myth of disability: paternalism. Because the disabled are perceived as being weak, "intrinsically inferior and unable to take responsibility for their own lives" (Charlton 52), nondisabled individuals feel that they are inherently responsible for the care of these unfortunate *invalids*. These notions of loss and inferiority often lead to strong feelings of pity and shame, as the nondisabled often equate a *differing* ability with *loss* of ability. This pity and shame then

become the foundation for paternalistic feelings toward the disabled, as the nondisabled feel it is their duty to help the *less fortunate*:

> Shame takes place in relation to others. That is, people with disabilities or their family members or friends feel shame when they themselves relate to disability in front of others, or in society...Pity, like its source, paternalism, presupposes superiority. It is projected onto people. People with disabilities are primarily *subjects* of pity. The lives of people with disabilities are (considered) less, because their bodies and minds are (considered) less. (Charlton 55)

Rightfully so, Charlton goes on to explain that no matter how "well-adjusted" or "happy" an individual with a disability may be, people will still approach them with feelings of pity (55). In turn, this fuels the instinctive paternalism many feel toward the disabled, whether it is being played out on the stage of the Jerry Lewis Labour Day Telethon for Muscular Dystrophy or on the Special Olympic track field.

While all objects and speech can carry any variety of deeper mythological meanings, the meaning is always political in nature. Barthes explains that myth is, "both of semiology inasmuch as it is a formal science, and of ideology inasmuch as it is an historical science; it studies ideas-in-form" (112). Foucault agrees, stating that discourse will always have a political edge to it:

> I am supposing that in every society the production of discourse is at once controlled, selected, organized, and redistributed according to a certain number of procedures, whose role is to avert its powers and its dangers, to cope with chance events, to evade its ponderous, awesome materiality. ("Discourse" 216)

Discourse is controlled through a variety of procedures to ensure that the dominant ideologies are intimately intertwined with the common discourse. One form of control is the act of *exclusion*. Through exclusion, certain voices and opinions are robbed of their ability to influence popular discourse, largely because these individuals do not have the perceived *credibility* to speak accurately and truthfully on a specific issue.

One source of exclusion is the use of institutions as a means of validating the claims being made by the dominant class (the nondisabled). Discourse requires an element of truth, or at least the semblance of truth, for a specific discursive formation to become accepted as a representative statement or utterance of a hegemonic structure. Ultimately, "this will to truth, like the other systems of exclusion, relies on institutional support: it is both reinforced and accompanied by whole strata of practices such as pedagogy—naturally—the book-system, publishing, libraries, such as the learned societies in the past, and laboratories today" (Foucault "Discourse" 219). By relying on the credibility of these institutions as being a socially accepted source of reliable information, specific elements of discourse can be validated by those connected to these institutions, resulting in the ideas of the dominant class being seamlessly incorporated into the public's perceptions of reality.

On top of the reliance on institutions to provide an element of truth to discourse, another method of exclusion is the use of accepted authors. When a society is forced to make a decision about whether to incorporate specific information or language into their common discourse, a widely recognized author offers a certain level of credibility that can validate a specific idea, helping it to become incorporated into the discourse. Ultimately, it matters little who the actual author is, but rather, the fact that the individual is recognized as being an authority on the subject is enough to push their words and ideas to the forefront (Foucault "Discourse" 221). Consider how journalists are often perceived as being purveyors of truth and rationality. In many instances, it does not matter who the journalist is, but when the individual transmits information via commercial television or

print media, that alone lends the information an air of credibility, allowing day to day commentary to become accepted as Truth.

In constructing the discursive formation of disability, we must look no further than the medical establishment, which acts as the expert and agenda setter on all things disability. Despite concerted efforts by disabled advocates to re-signify the common perspective on disability, our society is firmly entrenched in what is called the *medical model* of disability. Under this model, disability is internalized, becoming "the result of some physiological impairment due to damage or to a disease process" (Llewellyn and Hogan 158). By internalizing the "problem," disability is viewed as being individualized, with any struggle or difficult ultimately stemming from the medically diagnosed impairment rather than socially constructed barriers. In the end, "the overall picture is that the human being is flexible and 'alterable' while society is fixed and unalterable. The emphasis is upon adaptation to the environment" (Llewellyn and Hogan 158).

This medical perception of disability can be brought back to Foucault and his discussion of sexual deviance in the *History of Sexuality*. Throughout this work, Foucault identifies the importance of the medical institution in normalizing and framing the discourse on sexuality, especially in terms of the functionality of sex. What is particularly interesting, however, is the role of doctors in normalizing sexual deviance,

> The machinery of power that focused on this whole alien strain did not aim to suppress it, but rather to give it an analytical, visible, and permanent reality: it was implanted in bodies, slipped in beneath modes of conduct, made into a principle of classification and intelligibility, established as a *raison d'être* and a natural order of disorder.... The strategy behind this dissemination was to strew reality with them and incorporate them into the individual. (Foucault *Sexuality* 44)

To Foucault, it is the medical community (institution) and doctors (author) who structure the debate on sexual irregularity as a means of normalizing prospectively strange

behaviour. Simultaneously, the individual is forced to internalize the issues, ensuring that this behaviour is perceived as being outside the status quo, yet still falling within the natural order of disorder. The medical division of normalcy and deviance is the key to understanding the construction of disability: "People with disabilities are often set apart and identified by their 'bodies' and their appearance. The fusion of science (medicalization) and body (image) is a powerful constraint" (Charlton 56).

1.3 The Medical Model of Disability

The medical model, based on the disease model of medical science, "predisposes practitioners to think of a 'condition,' which needs appropriate 'treatment'" (Llewellyn and Hogan 158). In the hospital setting, this model is appropriate because it focuses the doctor, allowing them to respond appropriately and help the patient. When broken down to its foundational parts, the interaction between a patient and a doctor is based on identifying a problem, assigning a level of seriousness and then attempting to rectify the problem.

The public's dealings with the disabled are frighteningly close to the prescribed treatment found inside the medical institution. While not all of this treatment is inappropriate, the foundational assumptions are damaging to the disabled population as a whole. These perceptions imbue the term "disability" with the idea that this way of life is inherently *wrong* and requires *curing*. It also pushes the perception that people with disabilities are different than the nondisabled and, ultimately, that this difference has left them *disadvantaged*. To Linton, the medical model is one of the disabled population's biggest barriers that we, as a community, are complacent in perpetuating: "Society, in agreeing to assign medical meaning to disability, colludes to keep the issue within the

purview of the medical establishment, to keep it a personal matter and 'treat' the social processes and policies that constrict disabled people's lives" (10).

Broken down to its smaller parts, discourse is a term that defines the language and ideas that control and structure our views of the world. Discourse is intimately intertwined in the production and dissemination of popular stories, myths, which are used to generalize and validate the dominant ideology, and from there draw them into society's hegemonic structures. The creation of discourse is not free flowing and accessible to all, but rather, is heavily structured and controlled by those in power to serve the political purpose of retaining power. One way power is retained is through the use of exclusion, which follows several procedural methods to ensure that only certain people are able to modify the official, and by default popular, discourse. The primary method of exclusion is the use of institutions, which can promote the validity of these dominant ideologies through their acknowledged position of authority in society. In the same way, the unifying notion of the author is used to dictate who can talk about specific subjects, as they are perceived to be experts, while others are said not have the appropriate knowledge to modify and create new discourses.

Many disability scholars, including me, agree that while the medical establishment has played a pivotal role in the construction and maintenance of disability's discursive formation, they are not the sole culprits producing a negative or oppressive perception of disability, specifically that of the physically disabled. Unlike most disabilities, individuals with physical disabilities are visually identifiable, as they generally require the use of adaptive mobility technology, whether it is a wheelchair, crutch, cane or walker. Because this disability is visually apparent, these devices could be

another source of contention. Consider one of the most common ways to describe someone who uses a wheelchair: *confined to a wheelchair*. This phrase implies that individuals who use wheelchairs are trapped or restricted by the devices, held hostage by the technology, while in actuality most individuals look at their wheelchairs as being a source of independence and freedom. Rather than inhibiting my ability to move around, my wheelchair is the fundamental source of my freedom—it liberates me from the limitation of legs that cannot weight bear.

1.4 Cautionary Tales – Sapienist Perspectives on Technology

As tool users, humans often turn to mechanical adaptation to amplify or augment our limited physical abilities. While machines, like the car, and information technology, like cell phones, have increased our range and connectivity, there is an increasing discomfort with the invasion of our organic bodies by technology. To define this spectrum of thought, I will use the term *sapienism*. Generally speaking, a sapienist looks to the human form as being the ideal and the pure, natural, organic body is a key to our identity and formation as "homo sapiens." To alter or tinker with this format is to limit or eliminate a key feature of being human. It is for this reason that sapienists are reluctant to fully accept machines and technologies, concerned that these devices are limiting, or altogether destroying, our humanity. While some may call this group of people *humanists*[2], I have chosen to avoid this terminology and create a specific signifier to

[2] Although a phrase used to identify individuals who focus on "the supreme value of human beings," the term "Humanist" carries a lot of other baggage, specifically links to racism, classism and sexism (*Key Concepts* 180), that only serve to muddy the theoretical waters and sidetrack us from the specific thrust of this section of the thesis, specifically the similarities of rhetoric between machine criticism and disability. While I have no intention of coining a new term here, I feel it is necessary to choose a neutral term to encapsulate this group of thinkers in much the same way I am categorizing "disabled" and "nondisabled," to allow readers easier access to my ideas without being distracted by highly contested terms.

describe *only* individuals who look at the supremacy of the organic human form: we are not just thinking apes, we are natural, organic humans—something that should be protected and respected.

The sapienist's concern with machines is not a new or uncommon idea, where many examples in literature and film represent the hysteria and fear of advanced technology. Through the media, we are continually telling ourselves stories of machine culture gone crazy, usually to the detriment of humankind. If nothing else, these stories warn the viewer of how *unnatural* it is to augment our bodies with machine parts, and how such augmentations can lead to a loss of power and autonomy, or in the case of artificial intelligence, our lives entirely.

These cautionary stories are not the arbitrary creations of the media, but rather, reflect the belief of a growing group of people concerned about the infiltration of technology in our society. Who I have dubbed *sapienists*, these are academics and individuals who are worried that as we allow technology to penetrate or replace our bodies, we are giving away our "humanity," allowing the technology to bend and warp our bodies into something monstrous rather than progressive. Although warning against technology, many of these writers are quick to explain that they are not outright opposed to technological development. Jacques Ellul, a renowned French cultural critic and philosopher is one of the first theorists I will deal with, followed by Willem Vanderburg, engineer, one of Ellul's last students, and director of the Center for Technology and Social Development at the University of Toronto. In the introduction to *The Technological Society*, Ellul explains that while he may sound pessimistic about technology, he is not in fact opposed to it. Vanderburg concurs, explaining in *Living in*

the Labyrinth of Technology, that "it is common to confuse this 'criticism' of technology with 'technology bashing' and a pessimistic outlook on life" (12). It is important to point out the distinction between "criticism" and "technology bashing," because it elucidates how these writers warn about machines and technology, rather than advocating their abolition. David Noble, a controversial professor at York University who is also concerned with the advancement of technology, goes one step further to argue, "no one is against 'technology,' despite the frequently heard charge, because technology as such does not exist. Technology exists only in the particular, as particular pieces of equipment in particular settings" (*Progress* 65). Noble argues that to be critical of technology does not mean you are arguing against the idea of technology advancement on the whole, but rather, on the current or potential future employment of developed technology. Noble believes that technological advancement is not all together negative, but that does not mean we shouldn't be critical of where it may lead us, especially when it is down a path of eliminating our humanity:

> Technologies might be opposed, for example: if they degrade people and diminish their freedom and control without any apparent economic or other compensating benefit; if their technical and economic viability is ambiguous but they pose serious social problems; or if they are clearly viable in the narrow technical or economic sense but are nevertheless destructive for society as a whole. (*Progress* 65)

It is from this standpoint of criticism, not pessimism, that sapienists have begun to think critically about the infiltration of machines and technology into our lives and our bodies, with the hopes of understanding what it may mean for humanity. In the end, these thinkers generally agree that a future involving the full integration of human and machine is a dark prospect: sapienist anxieties largely rest upon fears of losing control, strength, identity, and ultimately, humanity.

In Mary Shelley's *Frankenstein* (2002), the merging of man and science produces monstrous results. In this cautionary tale, Dr. Frankenstein tampers with the natural order of life, attempting to create a human being through scientific means rather than sexual reproduction. Through the use of science and harvesting body parts from the dead, Dr. Frankenstein is capable of creating a living and breathing entity that is not quite human and not quite machine. While marvelous at first, the creation eventually revolts, taking murderous revenge against its uncompassionate master. Hollywood has latched onto this cautionary tale, telling story after story about ungrateful machines who turn against their organic masters: the machine constructed to operate as our slaves becomes our robotic masters and executioners.

One of the fundamental criticisms laid against machine-use and autonomous robots is that machine culture runs contrary to the values and ideals of humanity. Sapienist writers, such as Willem Vanderburg, believe the goals and purpose of machines cannot exist in parallel with those of humans: "These problems arise from incompatibilities of one kind or another between technology, on the one hand, and human life, society, and the biosphere, on the other" (Vanderburg 8). Here Vanderburg is talking about how machine culture will not only pursue goals that are not human-centered, but also, will lead to the detriment or destruction of humanity.

David Noble agrees with Vanderburg, pleading for a "human-centered" society rather than a "human-centered technology" (*Progress* 66). Fundamentally, Noble feels the reason we develop machines is for the betterment of mankind; however, he questions whether modern technology is really helping or hindering us:

> When people wonder why the new technologies so rarely seem adequately to meet their human and social needs, they assume it is because of the greed and lust for

> power that motivate those who design and deploy them. Certainly, this has much to do with it. But it is not the whole story. On a deeper cultural level, these technologies have not met basic human needs because, at bottom, they have never really been about meeting them. They have been aimed rather at the loftier goal of transcending such mortal concerns altogether. (*Religion* 206-07)

Noble claims modern technology is not designed to helping humanity at all, but rather, obsessively pushes us beyond the mortal and fragile lives of "mere humans" and toward a transcendental afterlife of machine lives inside robotic or digital bodies. This is because one of the goals and values of robotics (and machinery in general) is that of immortality and transcending our bodily limitations. This often means giving up our organic bodies to occupy a more durable and longer lasting mechanical body, in essence taking away a major defining part of humanity, the human body—something seen as being key to our identity. This transcendence goes against one of the key objectives of the sapienists: maintain our humanity.

While it can be argued that machine and technological advancement has been guided by the desire to conquer our mortality, another more tangible driving force behind this development is that of economics. In Western society, the technology industry continues to grow, barely capable of keeping up with our lust for the latest and greatest gadgets and technologies. The industries are symbiotically reliant, where faster and stronger machines are required to develop faster and cheaper consumer tech products. The problem is these technologies have become so wrapped up in commerce, in capitalism, that their purpose is now more about turning a profit than actually helping people. Leo Marx, an American studies professor at the Massachusetts Institute of Technology, goes on to argue that the result is, as outlined by Thomas Carlyle in his

essay *Sign of the Times*, that "the *devaluation* of the human world increases in direct relation with the *increase in value* of the world of things" (Marx 177).

Some may pass off concerns about the rise of capitalism and the devaluation of humanity as communist rhetoric. Vanderburg concedes that "because technological and economic growth are guided primarily by performance values rather than by human and social values, the structure of a modern society may, from time to time, produce genuine wealth and human well-being, but this outcome is almost always accidental as opposed to intentional" (6-7). While it is possible to make a profit while increasing human well-being, he goes on to state that "The emphasis on performance values fails to recognize that these are not values in any traditional sense of that term. After all, what have we gained if, on an individual basis, many technologies are time-saving but we appear to have less and less time to ourselves?" (Vanderburg 11).

This concern with the needs and lifestyles of machines running in opposition to human(e) ones is reminiscent of the language that encapsulates disability. One of the fears illustrated by Noble is that the goal of developing technology is to escape the frailty of our bodies, thereby elucidating the fact that our bodies *are* in fact frail, regardless of whether or not you are disabled. While some pity the disabled because they assume life must be unbearably difficult, perhaps this response is generated because disability is a clear and visible reminder of just how fragile the human body is—loss of ability can happen to anyone. By becoming reliant on adaptive devices, like wheelchairs, the user's lifestyle different than mainstream public: disabled lives seem impossibly difficult because using a wheelchair means one can only go places that are wheelchair accessible—ramps are symbolic of where wheelchair-users can go, but also, their absence

is symbolic of where we cannot (*Semiotics and Dis/Ability* 109). While there may be no bars on our windows, there are most certainly stairs at our doors—physically ensuring our permanent placement outside looking in.

Dove-tailing with this sense of restriction and differing lifestyle is the fundamental concern held by sapienist thinkers: loss. One of the main ways that machines are thought to infringe on our humanity is by their limiting our ability and autonomy, primarily when it comes to social interaction, intelligence, control and masculinity for men. There is a growing concern in the sapienist community that face-to-face communication, and social interaction in general, is subverted by information communication technologies. In *Art of the Motor*, Paul Virilio, a French cultural theorist and popular urbanist, explains that "If it is true that, from now on, we can not only act at a distance, but even teleact at a distance–see, hear, speak, touch, and even smell at a distance–then the unheard-of possibility arises of a sudden splitting of the subject's personality" (106). Teleaction creates, on one hand, our *real* selves, manifested by our physical bodies in the physical world, and on the other our avatar selves, embodied by the devices or digital structures that we manipulate remotely. This split could have grave consequences to social interaction, as Vanderburg argues that "The benefits of computers may be offset by the negative impact they have on how we see ourselves as human beings, and how this, in turn, affects our relations with others and, through them, the entire fabric of society" (8). Not only can the encroachment of imbedded technology lead to a separating of the self, but this ability to act at a distance, removed from the reality of the situation, could lead to a breakdown of social relationships, as "natural" human society becomes replaced by machine interaction.

Along with the breakdown of social interaction comes the fear of losing or limiting our intelligence. Noble explains the foundations of this problem through the use of a story about an engineer who attempts to construct a robot for his lover. Engineers are taught that robots, and machines in general, should be constructed to be "fool-proof," so that any individual, regardless of their level of ability, is capable of using the system (*Progress* 81). The problem with rigidly constructed machines, however, is that they force the user to become subservient, forced to conform to using the system as the producer had intended. As Noble goes on to explain, the engineer "does not even know where to begin to design a machine that would allow someone to intervene creatively as an equal" (*Progress* 81). This issue of foolproof machines, or more correctly, machines that are designed to force usage compliance, limit our ability to think for ourselves. To Ellul, increased use of machines not only reduces our autonomy, but actually make us stupid. He explains, "It has been said that modern man surrounded by techniques is in the same situation as prehistoric man in the midst of nature" (Ellul 306). Unfortunately, this technology isn't simply making our lives easier, but by doing all this *hard work* for us, they demolish the need for us to do anything at all. Ellul believes that modern man "looks for nothing beyond the marvelous escape mechanism that technique has allowed him, to offset the very repression caused by the life technique forces him to lead. He is reduced, in the process, to a near nullity" (302). By surrounding ourselves with technology, we no longer have to think for ourselves—the machines will do that for us—turning the operators into insignificant cogs in a larger piece of machinery, a concern I will be dealing with in Chapter 2.

Interestingly enough, the "wheelchair" is often used as a primary descriptor of an individual with a disability: oh, you know Jeff—he's the one in the wheelchair. This could be an attempt to humanize the wheelchair, as it is an easy way to differentiate between people; however, this integration of human and machine goes even deeper, where people begin to incorporate the machine as a fundamental part of the identity. Consider the handicapped parking sign, an image that has become synonymous with "disability," despite the fact that only a small segment of the disabled population actually uses wheelchairs. Furthermore, look at the construction of the wheelchair sign: it becomes impossible to tell where the body ends and where the wheelchair begins. This integration goes so deeply that when friends see me without my wheelchair, they feel as though something is missing or wrong, yet they do not have the same reaction to seeing the chair without me in it. By itself, the wheelchair is still a wheelchair; however, without the chair, I am incomplete or broken.

While sapienist theories can come off as alarmist and sometimes technologically determinist, the general distrust of technology and machines runs deep within our culture. As many of the sapienists have openly expressed, they are not necessarily *anti-technology*, but rather, are concerned about the current uses of machines. Nowhere has the thinking of sapienist writers been more powerful than in the field of labour. As Leo Marx explains, "machine technology is instrumental in creating what [Karl] Marx calls 'alienated labor.' Although it is morally neutral, the machine in a capitalist setting helps to transform the worker into a commodity for sale on the labour market" (177). Not only can machines fetishize the worker, but they also provide the tools required by corporate management to break the will of the worker and reduce their rights and freedoms:

> Thus, with the new technology as a weapon, they steadily advance upon all remaining vestiges of worker autonomy, skill, organization, and power in the quest for more potent vehicles of investment and exploitation. And, with the new technology as their symbol, they launch a multimedia cultural offensive designed to rekindle confidence in "progress." (Noble *Progress* 3)

It was this fear that would give rise to the Luddite movement—a group of machine-smashing workers in the early 1800s. Ultimately, the Luddites were not afraid of machines in general, but rather, they were more concerned with the way machines were being used to replace workers and subvert worker power. Here again we see a binary opposition between a natural life without machines, or the end of existence at the hands of machines. Lord Byron defended the Luddites, explaining that they were simply fighting for their own survival:

> 'These men never destroyed their looms till they were become useless, worse than useless; till they were become actual implements to their exertions in obtaining their daily bread.... These men were willing to dig, but the spade was in other hands; they were not ashamed to beg, but there was none to relieve them; their own means of subsistence were cut off, all other employments preoccupied; and their excesses, however to be deplored and condemned, can hardly be subject of surprise.' (Noble *Progress* 42)

Noble, when talking about the Owenite socialists, states that "Although they saw all too well that, under capitalism and a competitive system, technological innovation led to intensification of work and exploitation, they believed that the same technologies held 'something in promise and prospect' in that they could be used to bring about co-operation 'in the far time of the Millennium'" (*Progress* 17). Noble agrees with Owen, but feels that the worker's choice came down to one of life or death, quite poignantly stating that for the Luddites, "When choosing between machines and people or, more precisely, between the capitalist's machines and their own lives, they had little problem deciding which came first" (*Progress* 8). Choosing humanity over machines was simple because in

industrialized countries, like Britain, France, and Germany, workers lost jobs and worked longer hours because of an increased use of machine technology. Despite these gains, technology continues to develop at breakneck speeds and encroached into every aspect of our lives, leaving Noble to once again can hear the call of the Luddites, desperate to salvage what is left of a dwindling humanity. For people like Noble and Vanderburg, this is once again a matter of life or death: "Labour's response to the first industrial revolution set a pattern that was repeated in the wake of the second. Once again it was the workers immediately affected by the changes who first sounded the alarm, described the dangers, and undertook direct means to try to slow the assault on their jobs and lives" (Noble *Progress* 24). From the Luddites, we get a sense of how machines are steadily pushing humans out of the work place, alienating us from our labour, and rendering us useless. One of the sapienists' final concerns is that technology is slowly taking control.

By turning ourselves over to machines and allowing the methods designed by their creators to dictate our usage and application of each machine, we are becoming complacent, losing our ability to determine what is right or wrong. Ellul warns us that "the belief that the human producer is still master of production is a dangerous illusion" (93). As the usage of machines is continually structured by procedure and operation manuals and our economy becomes more and more reliant on machine output,

> The human being is no longer in any sense the agent of choice. Let no one say that man is the agent of technical progress and that it is he who chooses among possible techniques. In reality, he neither is nor does anything of the sort. He is a device for recording effects and results obtained by various techniques. He does not make a choice of complex and, in some way, human motives. He can decide only in favour of the technique that gives the maximum efficiency. (Ellul 80)

Ellul explains that the goals of the machine remove any agency the human user may have, forced[3] to choose the most efficient method rather than the most humane. This lack of agency or authority in choosing the future usage of machines has lead to many of the machine-hysteria texts of the past five decades, a hysteria that has become particularly intense in the last decade, where the sense of our inability to compromise or control the technologies leads to our collective enslavement.

Here lies the most important form of loss that machines force upon their users; a loss of masculinity. In modern movies like *War Games* (1983) and *Star Wars: Return of the Jedi* (1983), audiences are thrilled and entertained at the prospect of our ability to overcome machines: "The producers of these films exploit not only the widespread resentment and anxiety about high technology (and the alienated lives and horrible dangers that accompany it) but also the genuine pleasure, the recovered sense of dignity, and the surge of power (albeit vicarious) when all the fancy gadgetry of those in command is put in its proper, diminished, place" (Noble *Progress* 59-60). The general sentiment here is that as machines penetrate our bodies, they become feminized and weak—reliant on an unnatural technology to make up for a natural lack of masculinity (strength). The idea of lack of ability leading to feminization is one of the foundations of the Boy Scout movement in the United States. At the turn of the century when machine culture was making its first appearance, some individuals in America became so concerned about the lack of masculinity that they began the boy scouts movement to help masculinize the men of America--"For Seton, a co-founder, along with Baden-Powell, of the boy scouting movement at the turn of the century, the craft of making men was the

[3] This is one of the more technological determinist arguments made by Ellul, who takes a hard determinist stance here, believing that by eliminating choices the machines are capable of forcing decisions upon us.

antidote to anxieties about the *depletion* of agency and virility in consumer and machine culture" (Seltzer 149). Seton states the whole purpose of the boy scouts movement is "to combat the system that has turned such a large proportion of our robust, manly, self-reliant boyhood into a lot of flat-chested cigarette smokers, with shakey nerves and doubtful vitality" (Seltzer 149). We see the importance of potency, virility, and the fear that when a man allows himself to be penetrated by machine culture he risks losing his manhood. Donna Haraway, a post-humanist who I will discuss later, explains that "To be feminized means to be made extremely vulnerable; able to be disassembled, reassembled, exploited as a reserve labour force; seen less as worker than as servers; subjected to time arrangements on and off the paid job that make a mockery of a limited work day; leading an existence that always borders on being obscene, out of place, and reducible to sex" (166).

Having looked at the argument that technology, specifically machines, reduces our control and power, more parallels become apparent between the language of machine and the language of disability. In the same way that sapienists are concerned about the fact that technology can limit social interaction, so too is social interaction of the disabled and nondisabled populations often limited, structured around the acknowledgement and identification of why this particular individual uses a wheelchair. One of the first questions I am asked by strangers once they see the wheelchair is "What happened?" or "What is wrong?" Quickly, the conversation becomes dominated by my disability. The wheelchair, and ultimately the disability, hijacks the conversation, becoming *more* important than the social interaction. Furthermore, people often speak to me *extremely* slowly, lowering the intellectual level of their conversations. Just as Ellul looks at

machines, the wheelchair is symbolic of not just physical limitation, but also, in the minds of their culture, mental disability, as people alter their speech patterns and language in an attempt to meet my perceived lowered level of mental ability. Finally, there is a general assumption that the disability removes all autonomy, making me a slave to limitation, meaning that I am perpetually weak. As discussed earlier, disability has largely become associated with concepts of loss and paternalism, making people feel the need to make up for my perceived weakness by constantly offering to help with even the most remedial of tasks—the wheelchair becomes symbolic of not just limitation, but, wholesale loss of control, strength and power, in the same way that technology is thought to limit our autonomy and limit our strength (or masculinity). It is through this perceived weakness that the disabled can be converted into infants—weak and pitiful creatures who not only *need*, but *depend*, upon a strong parental figure to *care* for their needs.

While sapienists are concerned about the limitations that stem from a reliance on machines and the incorporation of technologies into our bodies, the main thrust of their argument is that technology and machines infringe upon the natural order of life. Franchises like *The Matrix* (1999) and *The Terminator* (1984) both give voice to this hysteria, presenting machines with artificial intelligence that are forced to either enslave or destroy the human race because we simply cannot peacefully coexist. On top of a general fear that machines and technology could threaten our existence as the dominant species on the planet, there is also a perception in the sapienist community that machines and technologies are not just encroaching on our existence, but also spoiling the organic and pastoral bliss of the natural world. The train was considered revolutionary in its ability to connect the continental United States, however, some sapienist thinkers see the

train as being a mechanical abomination that tears up the beautiful, natural, landscape of America. As Leo Marx explains, some critics of the train defined it as being a "demon" or a "dragon" that is "leaping forward like some black monster, upon its iron path, by the light of the fire and smoke which it vomits forth" (207). These "abomination," and other man-made creations, were thought to spoil the landscape, "injuring" the natural beauty of the American farmland (Marx 211), leaving "wild picturesque waterfalls...deformed by the ugly presence of mills, and their voices, that now sing to their mountain dance, will then groan at the slavish wheel" (Marx 216). Ultimately, the use of machines is seen as a subversion of the natural order of the world—an attempted technological transcendence that only twists us into abominations and destroys the natural beauty of the world. The genesis of this new technological world cannot be complete, however, without completely destroying the natural world—its perceived antithesis.

As we continue to use machines and technology to break down and rebuild the natural world from our own vision, sapienists are concerned that our acceptance of the malleable nature of nature, our ability to modify and change the natural landscape through machines like jackhammers and bulldozers, will eventually seep into the most personal natural of spaces—our bodies. Virilio articulates this fear, believing that "Following the trashing of the history of the 'proletariat,' surely we will soon see human physiology turfed out and wrecked, once it is considered irretrievably obsolete compared to the prowess of intraorganic nanotechnologies" (120). It is from within this undoing of the organic body that Virilio quips that in the near future perhaps we will find a creature "Bristling with electrodes and antennae and sporting two laser eyes, our willing mutant takes the analogy with teleoperating robotics to its logical conclusion: the man lurks

inside the android" (111). While this may seem like hyperbole, Vanderburg shows how the barriers between man and machine are quickly being broken down within the structure of Taylorist capitalism: "The assault on the humanity of the workers may be appreciated by examining how the Gilbreths, a husband-and-wife team, analysed and improved the way a worker operated a machine" (331). To help optimize productivity in their factory, the Gilbreths attached lights to their workers, using a special camera to record the movements of the worker to calculate what were the most efficient, and productive, movements with the hopes of optimizing all of their workers' movements. As Vanderburg notes, this is fundamentally the same way an engineer would program a robot (331). The issue is that "Everything that is normally enfolded into human behaviour was stripped off in this 'one best way' behaviour and was to be suppressed by the worker seeking to execute it" (Vanderburg 332). In the end, these workers are turned into robots, tied into the bondage of their mechanical systems, something Leo Marx claims "there can be no redemption from a system that makes men the tools of their tools" (335).

1.5 Conclusion

To begin this chapter, I looked at the semiotics of disability—the language used to encapsulate a community. Here we found a community in dire need, confined cripples who are perceived to be suffering through the worst conditions imaginable. It is through this language that we are given a window into the nondisabled's construction of a *Myth of Disability*, which relegates the disabled to the periphery of society as sick and desperate for salvation from their nondisabled patriarchs. These perceptions are then institutionalized through the medical model of disability, which forces the disability and

limits our ability to perceive limitation as being societal rather than the diagnosed disablement.

After investigating the perceptions of disability, I moved forward to introduce several sapienist thinkers, like Jacques Ellul and Willem Vanderburg, and compare their criticism of technology to the language used to encapsulate the disabled experience. One of the foundational beliefs of the sapienist movement is that the goals of machine culture run contrary to that of humanity, something that harkens back to our perception that the disabled do things *differently* than the nondisabled, where *difference* can be seen as being *negative*. Next we looked at how the sapienists see a future of machine reliance as a future of lost ability and autonomy, much like the reliance of wheelchairs signifies the disabled individual's loss of ability. This ties directly into the sapienist fear of giving up our ability to labour and allowing machines to do all of our work for us. Ultimately, all of these things point to an existence that runs contrary to the *natural* (or organic) status quo that ultimately defines who we are: human. All of these sapienist perspectives are largely based on theoretical scenarios of what could happen if machines and technology penetrate our bodies and fundamentally change who we are as a species. In the next chapter, I will move forward to look at several science fiction writers, along with post-sapienists, to look at another possible view of what will happen in the future when humans and machines intersect—cyborgs.

Chapter 2

Human into Machine: Perspectives on Cyborgs and Penetrating Technology

This chapter is layered in order to give the reader a chance to bring different sets of ideas to bear on each other. I begin by exploring works by contemporary British Science Fiction author Iain Banks's "Culture" novels (the Culture is a technologically advanced space faring society involving both organic and artificial sentient life forms). Having set a discussion of enhancing and modifying bodies through machines and imbedded technology, I then give the reader a brief glance at post-humanism as seen through Donna Haraway and Raymond Kurzweil, the first an uneasy critic of the cyborg, the second a strong proponent of extropianism—the further evolution and improvement of humanity, primarily through technological advancement. It is from this plateau of machinic optimism that I will delve into my own experiences with disability and adaptive technology, proving that the disabled population is in fact a cyborg community. While some, specifically the sapienists, would find this distinction to be offensive and dehumanizing, I will then provide the reader with another contemporary British Science Fiction writer, Richard Morgan and his Takeshi Kovacs trilogy, to explore how modifying, and even swapping, bodies does not mean forgoing our humanity or identity.

2.1 Bridging the Gap – Iain Banks and Colliding Paradigms

While it's difficult to know for certain how humans will interact with imbedded or body-substituting technology once it arrives, one window into the not-so-distant future comes from the science fiction community. Science fiction texts commonly revolve around what life *might* be like through the use of futuristic technology—taking every day

experiences and attempting to understand how science or technology may have an impact, change or modify those experiences. An example of this form of writing comes from British writer Iain Banks and his science fiction universe involving the "Culture," a hyper-evolved human and robotic society that falls somewhere between technological transcendence and organic mortality. Throughout this series, Banks borrows heavily from the sapienist thinkers mentioned in the previous chapter to help understand how future societies will interact with advanced technology. In both *Use of Weapons* (1992) and *Excession* (1996), Banks argues that humans and machines have incomparable and incompatible goals, where humans have an urge to prove humanity as being 'superior,' and to enshrine the importance of manual labour.

The story *Use of Weapons* follows the life of Cheradenine Zakalwe, a man who was recruited into an organization called "Special Circumstances," the leading faction of a collective of sentient life forms called the "Culture." The story tells the tale of his troubled past in the military on his home planet and his eventual promotion to glorified hit man for the Culture, his life spent cavorting across the universe, attempting to fix problems the Culture's interventionist policies had created.

The story *Excession* follows the Culture in an attempt to deal with an object that appears to have come from a different universe, which they call an "Outside Context Problem" or simply OCP. Just as this unexplainable object appears, a primitive and barbaric race called the Affront attempt to hijack some advanced Culture warships in a desperate attempt to take control of the OCP to gain an upper hand in the galactic struggle for power. To help prevent this from happening and to learn more about what

this anomaly is and what it may want, the Culture is forced to turn to several humans to investigate and intervene.

At the heart of both texts is the Culture, a race of organic and artificially intelligent life forms that employ robotic bodies, some as small as microscopic drones while others are space ships the size of planets. Capable of communicating and processing information far faster than any human, the Culture's machines are primarily interested in acquiring knowledge while attempting to spread peace across the universe. While the Culture is controlled by organic life forms, specifically the humans involved in a branch of their government called Special Circumstances, most interaction comes through the autonomous and semi-autonomous robotic life forms, ships and drones, whose role is to maintain the peace around the universe—a job they are not particularly good at doing. Although supremely intelligent and generally well meaning, a majority of Banks' stories based in the Culture universe involve human characters coming to the rescue, cleaning up a mess the Culture has created. Time and time again, the Culture starts wars between interstellar societies, often because they do not understand how their meddling may not be in the best interest of other, less-evolved, sentient life forms. While they always intend the best for sentient life around the universe, these post-human's goals and methods rarely meet with those of humanity, even though most civilizations in this fictional universe agree that peace would be for the best. I believe Banks is alluding to the fact that, as I explained in the previous chapter, human and machine intelligence has differing goals and the enactment of these plans will inevitably lead to human pain and suffering.

A prime example of this schism between the goals of humanity and machine comes in the text *Use of Weapons*, when Sma talks to her personal drone, Skaffen-Amtiskaw. While pursuing an agent (Zakalwe) with the hopes of recruiting him, Sma and Skaffen discover a society on the brink of falling into chaos, chaos that appears to be Zakalwe's fault. Given Zakalwe's past failures and current problems, Skaffen logically computes that it would just be easier to kill Zakalwe for the good of future worlds he may encounter. Sma's disgust and frustration is apparent as she orders Skaffen to not "talk about humans as though they're just collateral damage" (Banks *Use of Weapons* 95). Here Banks, quite smartly, elucidates the fear that as machines gain sentience they will look at humans statistically—weighing their right to remain alive based on their level of usefulness.

While Banks does not allude directly to the humanist movement here, the connection is drawn out clearly later in the text, where one of the main political groups operating on Voerenhutz identify themselves as 'Humanists.' In a move that sounds startlingly familiar to sapienist writers, such as Jacques Ellul, these fictional Humanists have set about developing a hierarchy of life forms, ranking a species' importance based on sentience: of course, no robots are allowed on this list (Banks *Use of Weapons* 111). While the Humanists' group will admit later in the novel that synthetic life forms, like the Culture, have some form of sentience, they continue to deny machine intelligence, claiming that only *human* sentience is significant (Banks *Use of Weapons* 264). Much like some of the less thought-provoking humanists, these Humanists give very little validation to their claim: they simply know it to be true. I believe Banks uses the Humanists group to both poke fun at modern sapienists writers while still acknowledging

our internal discomfort with machine sentience and the thought of losing our dominance over machines.

2.2 Machines, Labour and Nature

Part of the importance placed on the "natural" and organic harks back to the idea that manual labour is intrinsically human and that we will lose our humanity if we give up our ability to labour. When confronting a ship builder, Zakalwe is shocked to discover that much of the ship is crafted by hand, rather than mass-produced through a machine shop. When inquiring why, the ship builder responds,

> It's fun. You see one of these big mothers sail out those doors for the first time, heading for deep space, three hundred people on board, everything working, the Mind quite happy, and you think; I helped build that. The fact a machine could have done it faster doesn't alter the fact that it was you who actually did it. (Banks *Weapons* 277)

The pleasure of production isn't the only place where doing it "the natural way" shines through as the *superior* method. In the novel *Excession*, the theme for the Homomdan's yearly festival is the "primitive," looking to a time when technology was not as pervasive as it had become in the Homomdan's civilization. For many, this festival meant giving up the use of their neural lace, a personal computing uplink that is installed in the user's brain (Banks *Excession* 187). Many looked at this opportunity as liberating, an opportunity to break free of the control and structure technology had interjected into their life. Ultimately, the festival of the primitive was a chance to be human again, which Banks implies is seen as a good thing.

Despite these cravings for a life less technically evolved, Banks' stories are inundated with technological marvels that seek to modify and amplify the human body. In a future where it is possible to swap bodies, genders, and species, there are few reasons

to cling to one's original body. In *Excession*, characters are constantly given the opportunity to manipulate or swap bodies; however, these characters all suffer from a degree of trepidation associated with shedding their natural form. On the surface, *natural* is seen to be superior, but on a deeper level, characters look to their bodies as a source of identity, memory and private ownership—all significant things in a Universe where the most powerful race, the Culture, see thought and memory as the only form of "private property" (Banks *Excession* 66).

Throughout both texts, Banks' characters are often put into situations where their natural bodies are unable to meet the demands of a space-faring civilization. When the human body is not *good enough*, characters are forced to employ a variety of technology to help augment the natural limits of their bodies. Generally, these technologies are welcomed, with certain restrictions to prevent them from penetrating the user's perceived *natural* bodies. While these additions come in numerous forms, several key adaptive technologies focus on augmented appearance, physical ability, and communication.

While there seems to be a general distrust throughout Banks' texts of completely overhauling the human form, external technologies, like cloths, are presented as being a perfectly acceptable means of amplifying our aesthetic appearance. Although some may not consider clothing to be a form of appearance-enhancing technology, the clothing found in *Excession* is quite different than traditional 21st Century Western fashion. To get fashionable clothes, all Genar needs is a tailor who can grow him a perfectly customized suit, based on his genetic code (Banks *Excession* 257). To Banks, this type of technology, while invasive in its need for genetic code, is not represented as intervening or interfering with Genar's natural body—the suit simply augments his *natural* appearance. Note that

the suit does not physically change the form and structure of Genar's *natural* body—with or without the suit, Genar is still the same person. Banks will continually make this distinction throughout the texts, depicting external technologies as favourable while vilifying invasive technological modification.

While technology is already being employed to enhance appearance, another important external technology employed by humans in Banks' novels is the "gelfield suit." The human body is capable of surviving most of Earth's environments with little more than layered clothing in some of the cooler climates. But with characters traveling to different planets with a variety of different environs, some unsuited for human life, the need to upgrade our body's defenses is required. To help keep humans alive and breathing, the Culture developed the gelfield suit—a semi-autonomous, translucent protective sleeve that acts as a personal shield, compensating for nearly all human fragilities, such as our inability to survive in outer space or inside a volcano (Banks *Excession* 31). Along with providing protection, the gelfield suit is also designed to amplify and enhance human abilities, like strength (Banks *Weapons* 268). Although our natural defenses to our environment, like our skin or mucus, essentially run on autopilot with little need for user intervention, the gelfield systems are so complicated that they require some form of intelligent management for control, allowing the user to use the technology without *thinking* about it: an attempt to make the technology *natural*. It is for this reason that the suits all come with some level of sentience, something that seems to annoy two users of the technology:

> Unhappily, the processing power required for this sort of technological gee-whizzery meant that according to Culture convention the suit had to be sentient. Genar-Hofoen had insisted on a model with the intelligence fixed at the lower limit of the acceptable intellectual range, but it still meant that the suit literally

> had a mind of its own...The result was a device which was almost as much a metaphorical pain to live with as it was in a literal sense a pleasure to live within; it looked after you perfectly but it couldn't help constantly reminding you of the fact. (Banks *Excession* 31)

Although characterizing the suit as a "pain to live with," Genar maintains his dominance over the suit by lowering its intelligence so that he can enjoy the suit's abilities without relinquishing total control. In a similar way, Zakalwe maintains his autonomy from the device. While the gelfield suit can be programmed to read user's thoughts, Zakalwe explains that he "just never liked the idea of that" (Banks *Weapons* 269). Instead, Zakalwe prefers to interface with the device using voice commands, allowing for hands-free use without allowing the technology to penetrate his mind, or more correctly, his body.

The body is not the only thing suffering in this universe: the mind also has difficulties keeping up, specifically in our ability to communicate. As cell phones continue to advance, many are using the devices to instantly access information—including talking to friends, sending text messages, and surfing the web. With some users already finding the keyboard and mouse input devices limits their interaction with digital information, Banks looks to a future where information comes at us so fast that the only way we can process it all is to allow computers to transmit data directly into our heads. To help communicate complicated and dense amounts of information in the fastest time possible, Banks' characters are often outfitted with a "neural lace," a computer uplink similar to a cell phone that is installed in the user's skull. In much the same way that some people use cell phones as time-keeping devices, Ulver uses her neural lace as an internal alarm clock (*Excession* 175). The neural lace is also used like an internal cell phone, allowing characters to communicate over vast distances, except these connections

can also incorporate multimedia, transmitting files, like photos or video, directly to their friends through the neural lace (Banks *Excession* 178). Although this technology is internally situated, no characters have any concerns about the effect the technology will have on their identity. Largely this acceptance is based on sight—the technology does not change how we physically look, but it does enhance our ability to send complicated communiqués over vast distances.

The combining of technology and the body does not stop here and it is as the technology begins to move inside and *change* the human body that Banks begins sounding the sapienist alarm. Through various technologies, Banks' characters have the opportunity to heavily modify the human form; however, after several millennia of tinkering most people eventually returned to more natural "human" configurations, "albeit assuredly pretty good-looking people," Banks quips (*Excession* 105-6). Banks' implication that we will naturally return to human form is curious, signifying an inherent love, and perhaps perceived superiority, of the natural human form. This notion is confirmed moments later: "it was a matter of some pride to Ulver that she had never had any form of physical alteration carried out" (Banks *Excession* 106). Here Ulver, who continually uses her beauty throughout the text to control situations, feels that her beauty is *superior* to others because it has not come through genetic or mechanical tampering—through *cheating*. While it can be argued that this plays into our cultural obsession with *rarity*, attributing higher monetary values to harder to find metals and stones, there is another element at work here. On top of rarity, what is really at stake here is authenticity. While mechanical reproduction of beauty can be nice to look at, is lacking the rarity *and*

authenticity of naturally occurring beauty, making the natural more alluring. Anyone can construct a beautiful body, but only a precious, valuable few can be born into one.

This sense of authenticity and originality also stems from the fact that our bodies are thought to embody our identity. When the prospects of reward come up for Genar in exchange for his service to the Culture, one of his requests is to swap into the body of an Affronter, an alien race he is currently acting as an ambassador to from the Culture (Banks *Excession* 63). The immediate criticism following this announcement is that the Affront is seen as a savage society—one far primitive compared to humanity. Genar believes that as long as he maintains a human body, no matter how much he studies and lives with the Affronters, he will never be able to truly understand their society. By taking on the body of an Affronter, Genar, a human, believes he will be able to develop a deeper insight into their life—to truly get *inside* them and *become* one. In the end, this will only help him do his job better, "I'd really be able to relate to these guys; I could really be one of them. Hell; isn't that what this ambassador shit is suppose to be all about?" (Banks *Excession* 63). In the end, Genar gets his wish and is much happier—in this body he can finally live like an Affronter, something he has wanted since he beginning of the text. He is so comfortable in the new body that he is finally able to beat a fellow Affronter at one of their games, something he could never manage in a human body (Banks *Excession* 445). Here Banks is pointing to the perceived interconnectedness of our mind and body. In a human body, Genar could not fully understand the Affront, while the new body has transformed his identity to become an Affronter in the same way that his human body made him *human*.

The natural body is also seen as important because our lived experiences affect and change our bodies, converting them into tapestries of our past, souvenirs from important historical events. In *Use of Weapons*, Zakalwe is continually reluctant to swap into a new body because it would mean losing an important part of his past (Banks *Weapons* 141). Because of previous mistakes, Zakalwe feels responsible for the death of his sister. As she died, a death Zakalwe feels responsible for, a piece of bone from her body penetrated Zakalwe's chest, leaving a scar next to his heart. While this experience physically marked his body, it also penetrated his identity: this failure to protect drives Zakalwe to protect others. As we live, our bodies become temples of memory, showing the battle scars, bumps and marks of past-lived experience. The concern here is that by swapping into a new body, Zakalwe will betray the memory of his sister and let her tragic memory go, throwing out the broken past with the broken body.

Finally, Banks acknowledges that while the ability to swap and modify our bodies holds many positive opportunities, ultimately, entering a new body will inevitably feel unnatural and foreign. For many characters in Banks' texts, the concept of moving into a new (manufactured) body is met with skepticism—they assume it would feel awkward or unnatural to be controlling a body that is not their own. In *Excession*, the character Gestra is a restless individual who looks for his natural identity. In his search, he has tried modifying his own body, living in a woman's body, and even moving across the galaxy to enter a digitally simulated life. None of these interventions solve his problem—he doesn't need a *new* identity, he just wants his *own*. Gestra explains that "being handsome was worse than being gangly and bumbling because his body felt like a lie he was wearing; being a woman was the same, and somehow embarrassing, as well, as though it

was somebody else's body he had kidnapped from inside" (Banks *Excession* 146). Banks alludes to a connection between the mind and the body: inside a foreign body the mind will not be comfortable. Ultimately, we will feel unnatural and *wrong* in a body that is not our own.

This is the connecting theme in my approach to technology in Banks' texts—technology is widely accepted and encouraged, provided it is not visible. While technologies, such as body modification, provide interesting opportunities for people to change how they look, the predominant thrust is a natural aesthetic: bodies that have not been tampered with, using technology to augment their ability rather than controlling and warping their physical appearance. By allowing technology to enter our bodies and change our natural appearance, we infringe on something sacred—our natural form—which feels wrong and foreign. At the same time, wearing or embedding technologies that augment our abilities is perfectly fine, provided those technologies either maintain a strict distance from our bodies or are so deeply embedded that they cannot be seen. In the end, it all comes down to our bodies and really, why shouldn't it? Our bodies *are* the physical manifestation of our identity.

2.3 Corrective Lenses—Disability as Cyborg

In the first chapter I looked at the negative language and perceptions that encapsulate disability, drawing a clear link between perceptions of machine use with the perceptions of disability, specifically those who use adaptive technology. I then moved to look at how Iain Banks perceived the interaction of human and machine in the second chapter, to see how these types of mergers may play out in the future. Now I will shift ground to bring some theory to bear on what has gone before to illuminate what is to

come—an interrogation of my personal experiences in a wheelchair compared to how theorists like Donna Haraway define cyborgs.

As I have argued, the nondisabled's perceptions of the disabled, specifically those who use adaptive technologies, is not based on who we intrinsically are, but rather is focused on our use of machinery and our society's rather contentious relationship with technology. Our society's fears of disempowerment at the hands of machines are superimposed upon the disabled body, becoming a site for loss, inability, and reliance. But if our physical bodies can be seen to be a shell that holds our authentic self, floating somewhere within the fleshy strata, then it becomes possible to maintain our individuality and identity while being housed inside a different body. It may also be possible to incorporate other parts, or machines, into our bodies to help our minds navigate and interface with the world around us. Some may question how deep the link goes between an individual and their adaptive technologies; however, I believe my power chair has been absorbed to become a part of my body. The chair has become my machinic legs that propel me onward, granting me mobilization rather than limitation.

As the idea of being "broken" and "incomplete" brings about horrible visions of loss and limitation, I would like to postulate that perhaps users of adaptive technologies don't succumb to their lack of ability, but rather, are becoming something else entirely—a merging of organs and gears to produce a hybrid capable of independence and strength, albeit through different means. Instead of being a broken, dysfunctional, feminized and castrated man, I see myself for what I truly am—a cyborg. By definition, a cyborg is "The melding of the organic and the machinic or the engineering of a union between separate organic systems" (Gray, 2). In my case, this consists of the merging of my

natural body and brain with the mechanical body of my power chair: by definition, this makes me a cyborg. As bizarre as it may sound, one needs only consider the theoretical purpose of cybernetic endeavors to see that this field is ripe with possibility for the disabled population:

> Cyborg technologies can be restorative in that they restore lost functions and replace lost organs and limbs; they can be normalizing in that they restore some creature to indistinguishable normality; they can be ambiguously reconfiguring, creating posthuman creatures equal to but different from humans, like what one is now when interacting with other creatures in cyberspace or, in the future, the type of modifications proto-humans will undergo to live in space or under the sea having given up the comforts of terrestrial existence; and they can be enhancing, the aim of most military and industrial research, and what those with cyborg envy or even cyborgphilia fantasize. (Gray 3)

This is, almost by definition, the goal of adaptive technology: to overcome adversity and normalize an individual to allow them to live independently as they would if some form of ailment, genetic or otherwise, did not limit them. Technology allows an individual who is non-ambulatory to move from a stagnant life of reliance on those around them, to a life of independence through the melding of their body with a device like a wheelchair. One of the immediate arguments against this hypothesis is that adaptive technologies, like prosthetic limbs, do not directly penetrate the user, making these devices more like a car or a bicycle than a symbiotic merging of flesh and gear.

While my wheelchair is not *physically* inside my body, it has penetrated my identity in other ways. These remarkable devices have had a defining influence on my life, being a source of both great frustration and emancipation. Through thick and thin, my wheelchair has always been there for me. Telling people that I have an intimate bond with my power chair and that I look at it as being a part of my body often garners strange looks and uncomfortable chuckles of disbelief, as non-users cannot imagine what it must

be like to become this close with a *simple machine*. Regardless, a unique bond has formed, a relationship that is significant to me.

The first evidence of this merging comes from my joints and limbs. Shortly after being diagnosed Muscular Dystrophy as a child I was also diagnosed with arthrogryposis, a rare disorder that causes the stiffening and warping of tendons and bone structures, specifically around the joints. By looking closely, you will notice that my knees, ankles and elbow joints have all begun to seize up, as a result of this disorder, forming to fit the structure of the chair. As a result, my knees are nearly locked at the angle required for them to wrap around the seat cushion and continue down to the footplates. In the same way, my arms are beginning to lock at an angle that they most commonly sit in, comfortably sitting parallel with the armrests. This is especially true for my left arm, which is almost constantly locked into place on the joystick. This melding is dual-directional, with the chair beginning to mimic "normal" body movements, as I will often gesture through movements of the chair or move the chair around the front of a classroom while teaching, giving the appearance of a professional speaker who moves around the stage to work the audience. The movements are so *natural* that I have even had students and friends comment how incredibly "life like" I make the chair seem; it would appear that they too are beginning to question the presumably opaque division between human and machine.

Although I'm not sure I can explain exactly how the connection between my chair and me has happened, I can say that the bond has grown so strong that I often suffer great anxiety and withdrawal when we are separated. Like a mind reaching out to a limb that has been amputated, I yearn for the comfort of the seat and the way the joystick responds

to my left hand's commands. Although not as amplified, I also suffer a form of anxiety and frustration when I'm given a new wheelchair to replace one I have outgrown or broken. When it comes time to get a new chair, there is always about a weeklong adjustment period when the new chair feels foreign and wrong: sometimes it feels like the new chair could not possibly replace the old, naturalized chair. Some people will point to this swapping of wheelchairs as being proof that a wheelchair cannot be considered a part of your body, as people cannot replace their legs without delving into the world of prosthetics. However, Kurzweil makes an interesting point about our physical bodies, explaining that they are not as fixed as we would like to think, since they are constantly being replaced, biologically, so that we don't actually have an intrinsic grasp or "control" over their form (*Singularity* 385).

While it may appear at this point that the relationship is only one way, with the chair forcing its whim upon me, the relationship is in fact symbiotic: this influence and affect has not been a one-way arrangement. As I progress through significant events of my life, the chairs have influenced me but at the same time I have forced my will upon them, affecting them physically. My life has left its mark on these chairs and as I grew older and too large for them, I rubbed my body up against the rocks of time and like a serpent, peeling off my old skin, leaving them behind for someone else to find; the lonely, but descriptive, husk of past days. Each one of my old chairs has telltale signs of what I have experienced, what I went through, and how I lived. Most importantly, all of these chairs signify a major turning point in my life.

The oldest of my chairs is a sleek, although archaic, manual wheelchair made by Quickie. Although showing signs of red paint, a majority of the chair is black and mud-

caked. Being quite small with a standard commercial seat, the most significant memory from this chair are the days when I was strong enough to propel this tiny frame under my own power. By taking one look at the tire's spokes, I am quickly reminded of the many excursions my family made into the forests around the Bruce Peninsula as many of the spokes are bent inward after colliding with stumps along the way. Ultimately, this was a tough little chair for a spunky little boy.

As I got older I hit a major turning point in my life: the day when I was no longer able to push myself. As my body got bigger and my muscles remained the same size, unable to grow because of the Muscular Dystrophy, there came a point when I physically was not strong enough to propel the chair anymore, signaling the need for a new type of adaptive technology. This is identified by my next wheelchair; a fully electric Quickie power chair. Although I'm older than when I got my first chair, the bright turquoise frame reminds me of my younger days: I like the bright colours and it fit in nicely with the early-90s fashion. Another significant change has been made to this chair; the seating is becoming more customized. When I see the lateral supports that were attached to the back of the seat, I am immediately reminded of the onset of scoliosis. I can remember sitting in the hospital room, my mom's arms wrapped around me as I sobbed—the verdict was in, I required major spinal cord surgery.

My next chair is significantly different than my turquoise Quickie, moving into a forest green Action Arrow performance power chair. Having just undergone successful spinal cord surgery, this chair no longer has the lateral supports, instead having a highly customized seat designed to accommodate my new form. Scanning along the front footplates and support pylons, one's eyes are immediately drawn to all the scraps and

dents: I had begun playing wheelchair hockey. More importantly, the chair has tiny stickers placed around the bottom and sides, some opposing racism and bullying, another proudly proclaiming this particular chair to be the "proletariat chariot," signifying my discovery of Marxism.

While this chair symbolized my first philosophical endeavors into counter-culture behaviour, my next chair is the bronzed statue celebrating my birth by fire—or snow—into a life of activism. This chair is caked in putrid rust from top to bottom with the left motor sagging pathetically to the ground, leaving an appropriate chalk line to indicate everywhere I have been. This chair was brutalized during my boycott of the Western Access Transit system in my 2nd year of university. The road salt and snow literally corroded the metal of this chair just as I attempted to corrode the illogical policies of the University Western Ontario's administrators who refused to rejuvenate accessible transportation on campus. While most of my chairs were in pretty rough shape, none were as damaged as this marvel.

My current chair's story has not been completely written yet, although it already helps me recall some great memories. With little rust on it, I am reminded of the victory and subsequent implementation of an accessible transportation system that actually works on campus at Western. The Canadian flag stuck somewhat-proudly across the battery case reminds me of an incredibly liberating—albeit disaster-riddled—trip to the United Kingdom. Most importantly, the sleek and all-black frame signifies something else: the transition from my youth into a strong, and still very active, man.

2.4 The Cripple Manifesto—Donna Haraway and the Cyborg Manifesto

The merging of my body with my wheelchair has several important implications that I believe are explored, albeit from a different angle, in Donna Haraway's "Cyborg Manifesto." Throughout the manifesto, Haraway muses on cyborg life and what it will mean as humans begin to shift from *natural, biological* lives into the post-human, *cybernetic* existence of the future. Despite the benefits of cyborgization, Haraway laments: "The main trouble with cyborgs, of course, is that they are the illegitimate offspring of militarism and patriarchal capitalism, not to mention state socialism" (151). While I believe Haraway refers here to people becoming cyborgs to serve the purpose of the military, another possible interpretation is the production of cyborgs as a *result* of military action. As it has been seen in the past decade, medicine makes huge leaps forward, especially in the field of prosthetics, during wartime because the devastation of war produces so many damaged bodies that doctors are expected to revitalize with science and machinery once combat is over. As reporter Nancy Shute discovered, the American military has suffered fewer casualties during the invasion and subsequent occupation of Iraq by the Bush administration than expected. This is largely because of advances in armor. As such, most damage affects the soldier's extremities (arms and legs that are unprotected by the advanced flak jackets) and medical advancements has greatly increased the number of soldiers who survive amputations (Shute). The disabled population is also under the thumb of patriarchal capitalism and state socialism here in Canada, as the Adaptive Devices Program (ADP) was developed to help offset the egregious expense of adaptive technology. On average, my electric wheelchairs cost approximately $25,000 to $30,000 each, an expense incurred every 3 years as a youth and

5 as an adult. While the program allows individuals to purchase the adaptive devices they need to become independent, the program is not without its flaws. To limit spending, users are only provided funding for equipment that deemed "necessary," an arbitrary category that provides the lowest level of independence rather than true freedom. To make matters worse, ADP is under contract with a private company, Shoppers Home Healthcare, which forces anyone who requires the auto-tilt/auto-recline feature on their electric wheelchairs, a very common adaptation, to purchase their chair through Shoppers Home Healthcare if they hope to receive funding. The autonomy of individuals who require this device to function independently has been minimized, forcing them to obey the paternal State, which chose this vender not because they provide the best service but because they placed the winning bid when the contract was put out to tender—in this case, corporate power trumped the needs of the population.

Writing about Haraway's theories, another fundamental change that Rosanne Allucquere Stone, a post-humanist and one of Haraway's students, identifies as a key to cyborgization is the conversion of bodies to data: "this process is accomplished in ways that presage the gradual transformation of the citizen into streams of information, a process that Haraway identifies as part of the production of the cyborg" (42). Although most people would be reluctant to qualify themselves as being "data streams," the disabled population, under the medical model, has already made the transition to becoming bulk strings of data and diagnoses rather than human beings. In an article published in *Disability and Society*, A. Llewellyn and K. Hogan, two disability theorists, write about how disability becomes internalized, "the result of some physiological impairment due to damage or to a disease process" (Llewellyn 158). By internalizing the

problem, disability is viewed as being inherently individualized, with any struggle or difficulty ultimately coming from the medically diagnosed impairment rather than socially constructed barriers. Llewellyn goes on to explain that the medical model, which she believes is based on the disease model of medical science, "predisposes practitioners to think of a 'condition,' which needs appropriate 'treatment'" (Llewellyn 158).

In the hospital setting, this model is appropriate because it gives doctors focus, allowing them to respond appropriately and help the patient. When broken down to its foundational parts, the interaction between a patient and a doctor is based on identifying a problem, assigning a level of seriousness and then attempting to rectify the problem. The issue here is that this institutionalization converts people with disabilities into nothing more than files and terminology, with their diagnoses taking the forefront in the medical world: personal identity does not matter, only identifying the ailment and striving toward a *cure* is worth while. By looking at how the disabled community, specifically wheelchair and prosthetics users, have integrated machines into their bodies to amplify and replace ability, along with the transformation of bodies into diagnoses (or data) by the medical establishment, it becomes harder to distinguish between "disability" and "cyborg." While we attempt to view the disabled population as consisting of broken bodies, in actuality the disabled are a thriving community of adaptation, surviving through the adoption and incorporation of machines into their bodies.

The whole purpose of recasting the disabled as cyborg falls in much the same vein as Haraway's key argument in the *Cyborg Manifesto*, which was an explosive reconfiguring of gender perspectives, especially in the feminist population. In this work, Haraway essentially states she would rather be a cyborg than bend to fit within the

patriarchy's established gender roles. In much the same way, I find the classification of cyborg to be both empowering and liberating compared to the proscribed ableist definition of disablement—in many ways for the disabled, it is more human to be cyborg.

It is crucial to begin this investigation with Haraway because while she is optimistic about the coming age, she interrogates the cyborg in a critical way not found in extropian writers like Ray Kurzweil, whom I will be discussing shortly. As discussed, Haraway saw the coming machine age as being rife with challenges and threats. She openly acknowledges the potential invasion of technology as being dehumanizing. Furthermore, Haraway locates the cyborg as being a site for corporate and military domination, where the potential users are forced to sign away everything in order to upgrade or modify their bodies with corporate or military tech. This forgoing of rights is perhaps the most frightening aspect of a cyborgized future, where this adaptive technology is leveraged to accrue higher profits, in the case of corporations, or greater recruitment for the military. Whereas many extropian writers, like Kurzweil, look to a digital future as being an uninhibited utopia where we can be free of our feeble mortal shells, Haraway brings to bare an intense criticism similar to that of the sapienists mentioned earlier before turning to the possibilities. It is this criticism that makes her argument that much more astonishing—despite forgoing humanity or risk turning control over to corporate or military powers, in Haraway's estimation, it is still better to be a cyborg.

2.5 Back to the Future—Kurzweil and Post-Humanism

While shifting our perception of the population to consider them "cyborgs" may seem dehumanizing, the drive for cyborgization seems to be a direction human kind, in general, is heading. By inference, the cyborgization of the disabled population brings them closer to the future state of humanity rather than further away, into a perceived incarnation of Frankenstein's abomination. Ray Kurzweil, extropian writer and technological optimist, alludes to the coming deconstruction of the organic human body in favour of reconstruction through machine and technology, calling the change "the singularity," which is a point in time, around 2050 according to Kurzweil, when human kind has transitioned from our organic/natural configuration to one that mixes and combines machine elements with our own bodies. Unlike Haraway, Kurzweil approaches the coming cyborg age with open, and uncritical, arms. Where Haraway rightfully points to the pit falls of the cyborg and the potential this technology has to become a site of enslavement, Kurzweil marches forward with little care, or interest, in the potential drawbacks. As I will show, he assumes, ignorantly in my opinion, that this technology will be fully accessible to anyone and everyone with no strings attached. Despite turning a disinterested eye to these grave concerns, Kurzweil is still an important thinker to my research, as he shifts us from Haraway's potential pitfalls to considering what advantages may come from a cyborg existence.

Kurzweil feels comfortable with the oncoming cyborg age, stating it is already happening before our eyes: "A radical upgrading of our bodies' physical and mental systems is already under way, using biotechnology and emerging genetic-engineering technologies. Beyond the next two decades we will use nanoengineered methods such as

nanobots to augment and ultimately replace our organs" (*Singularity* 301). Not only will we modify our brains, but Kurzweil states we are also moving toward a new physical body as well: "The human skeleton version 2.0 will be very strong, stable, and self repairing," also through the application of nanotechnology (*Singularity* 307). While this may seem unorthodox or unlikely, consider the heavy modification currently happening in the medical industry, with the installation of artificial organs, pacemakers, blood transfusions, artificial limbs and joints, and the fast-growing industry of cosmetic customization. In fact, it's becoming increasingly difficult to determine where humanity ends and where the machine world begins. Kurzweil agrees: "The human body version 2.0 scenario represents the continuation of a long-standing trend in which we grow more intimate with our technology" (*Singularity* 309). At this point, we can define post-human as being the radical reconstruction of the human body and ability, to a point where it is completely different than the stereotypical organic human body of the 20th Century.

An interesting aspect of this entire notion of the futuristic human body is that all of these adaptations are internal and do not stray far from the organic human form. Even though Kurzweil believes we will eventually be forced to upgrade our soft brain tissues for computing devices, "we're likely to keep the aesthetics and emotional import of human brains, given the influence this aesthetic has on the human brain" (*Singularity* 310). Furthermore, Kurzweil is also reluctant to claim that we will become slick, steel-covered robots by completely removing our skin,

> We will not notice the absence of many of our organs, such as the liver and pancreas, since we do not directly experience their operation. But the skin, which includes our primary and secondary sex organs, may prove to be an organ we will actually want to keep, or we may at least want to maintain its vital functions of communication and pleasure. (*Singularity* 307)

This reluctance to part with the traditional organic human form harks back to the Banks and his opinions on constructed beauty—the copy cannot trump the "real" thing.

Kurzweil believes this attachment, especially in terms of linguistic self-creation, leads to our heavy reliance on bodily characteristics to help define specific individuals—"People's identities are frequently closely tied to their bodies ('I'm a person with a big nose,' 'I'm skinny,' 'I'm a big guy,' and so on)" (*Singularity* 315). To help understand our reliance on bodies, Kurzweil postulates a fictional story about a man who begins augmenting his body with technology, attempting to distinguish when we, the reader, would begin to doubt or question an individual's humanity. In his thought experiment, Kurzweil introduces the reader to a character named Jack, an individual from the 21st century who gets a cochlear hearing implant to augment his limited hearing (*Spiritual Machines* 52). Although not used by everyone, these implants are relatively common and few people would question whether or not Jack is still human because he is using a hearing implant. Happy with the augmentation of the hearing implants, Jack decides to upgrade his device further, getting "built-in phonic-cognition circuits" (Kurzweil *Spiritual Machines* 52). Although this technology seems more invasive, it would be a stretch to argue that Jack has become a new person as the technology is merely translating information for him. From hearing, Jack decides to begin working on his eyes, getting an "image-processing" update that allows him to see clearer and faster (Kurzweil *Spiritual Machines* 52). Again, the technology is getting more invasive, however it's still safe to assume that Jack is the same person as this upgrade is only helping him to see better. Next, Jack decides to improve his memory, using digital enhancements to allow for a near perfect memory (Kurzweil *Spiritual Machines* 52). While Kurzweil admits that

Jack is beginning to change more dramatically and his "perfect memory" may seem unnatural, in the end "he has the same self-deprecating humour, the same silly grin—yes, it's still the same guy" (Kurzweil *Spiritual Machines* 53). Personally, I question if the individual would remain the same, as so much of our social interaction, especially conflict resolution, is based upon forgiving and forgetting—the curse of forgetting sometimes goes hand in hand with the gift of friendship. Finally, Jack decides to go all out, fully repacing his organic mind with "electronic circuits of far greater capacity, speed, and reliability. There's also the benefit of keeping a backup copy in case anything happened to the physical Jack" (Kurzweil *Spiritual Machines* 53). It is finally at this point that Kurzweil acknowledges that a line is being crossed—while it still appears to be the same person, the concept of digitizing our brains is inherently "unnerving" (Kurzweil *Spiritual Machines* 53). Kurzweil then goes on to consider what happens when we take these digitally copied versions of Jack and place them within new bodies, organic or otherwise, and how that impacts our perceptions of whether or not Jack is still the same person. In the end, Kurzweil sees this process as a type of murder, suggesting that by "destructively scanning" Jack's mind and transplanting it into a *new* body, we are in fact killing the *old* Jack—slaughtering the organic to allow the mechanical to exist (Kurzweil *Spiritual Machines* 54). Much like Banks, the line of adaptation and augmented ability is drawn once we begin modifying or changing the physical bodies. Ultimately, there is a precieved link between the mind and the body that, once severed, the individual will change: if you change the body, the mind becomes different.

If there is such a heavy emphasis on the physical body, as an embodiment of the individual, can adaptive devices ever really be absorbed into the individual's identity

simply by relying on the equipment for mobility on a daily basis? Stone talks about Stephen Hawking and his use of adaptive technology in much the same way I talk about my wheelchair. Stephen Hawking uses a laptop with speech software to synthesize his words and allow him to communicate. Because of his disability, Hawking is capable of only simple facial movements and cannot speak; however, because he delves into such heady topics as astrophysics and blackholes, a simple communication board is not capable of adequately expressing his thoughts. As a result, he began using a speaking machine that would form the words in his mind for him, projecting them to anyone who was willing to listen. This concept intrigues Stone and forces her to begin questioning what it really means to have a physical (and visible) body,

> In an important sense, Hawking doesn't stop being Hawking at the edge of his visible body. There is the obvious physical Hawking, vividly outlined by the way our social conditioning teaches us to see a person as a person. But a serious part of Hawking extends into the box on his lap. In mirror image, a serious part of that silicon and plastic assemblage in his lap extends into him as well...not to mention the invisible ways, displaced in time and space, in which discourses of medical technology and their physical accretions already permeate him and us. (5)

The technology has begun to subvert his physical body and allowed him to slip beyond the physical self into the mechanically enhanced self, whose boundaries are much harder to identify. This is remarkably similar to my own experiences expressed earlier regarding my electric wheelchair. It is for these reasons that we must begin to seriously consider what it means to have a body, what a body truly is, and what types of things Stone believes are already beginning to subvert our physical bodies (89).

2.6 Restructuring Ideas—Descartes and Mind/Body Dualism

Part of our obsession with our bodies could be that we currently do not have the ability or opportunity to modify our bodies in these dramatic ways. Of the modifications we can do, like prosthetic limbs or plastic surgery, there is no question that while appearing different, the subject remains the same. Perhaps, as Rene Descartes[4] theorized, there is a separation of the mind and the body and while the body can be changed, the true identity, the thinking mind of an individual, only *resides* in the brain. To help explain this separation, Descartes took on the task of identifying what, in his world, he could categorically say existed without a doubt. In the end, the only thing he can *truly* be sure of is the fact that his mind exists, spawning the phrase *cogito, ergo sum*: I think, therefore I am. Descartes began thinking about the concepts of existence and reality in relation to sleeping and his senses. As Descartes explains, "I have noticed that the senses are sometimes deceptive; and it is a mark of prudence never to place our complete trust in those who have deceived us even once" (12). While some may look to our senses as being proof of our existence, Descartes rightfully points out that many experiences we have in dreams can look and feel the exact same as "real life," so much so that it becomes difficult to really tell when we are asleep or when we are awake (12). It is from this realization that Descartes decides to pretend, temporarily, that rather than a benevolent God, that in fact there is an evil genius whose life is dedicated to tricking Descartes and luring him into a false sense of reality (16). This is the basis of his investigation: if he

[4] While I understand that Descartes, widely considered a humanist, was writing during a time of sexism, classism, and racism, where the white upper class male dominated society and as such his writing must be considered in this context, here I am *only* focusing on his discussion of the mind/body as it is extremely relevant when considering Richard Morgan, the next author I bring into the fray.

accepts that there is an evil genius attempting to trick him then he must be skeptical of everything he knows, even his own senses (17).

It is from this place of complete skepticism that Descartes begins to identify sources of certainty. The most obvious site of certainty is that his mind exists: "But doubtless I did exist, if I persuaded myself of something. But there is some deceiver or other who is supremely powerful and supremely sly and who is always deliberately deceiving me. Then too there is no doubt that I exist, if he is deceiving me" (18). After attempting to use a similar method to prove the existence of his body, Descartes is resigned to admit that the only thing he can prove exists is his mind, meaning he is "therefore precisely nothing but a thinking thing; that is, a mind, or intellect, or understanding, or reason" (19).

While Descartes will go on to use this as a foundation to prove the existence of God, the more important question, for the purposes of this paper, arises about minds and bodies later in the text. Descartes agrees that it cannot be denied that he holds some ownership of his body, whether it exists or not, through the fact that he is subject to the body's needs, like food and water (50). His rationale for this belief comes through his observations of a sailor, who while capable of operating the ship, is ultimately not a *part* of the ship as he cannot feel its needs and wants (53). Even still, Descartes begins looking at the body more and more mechanically, comparing it to a clock. In the same way that a clock, although improperly programmed, will continue running as it has been constructed, Descartes notes that "even if no mind existed in it, the man's body would still exhibit all the same motions that are in it now except for those motions that proceed

either from a command of the will or, consequently, from the mind" (55). It is from this notion of *malfunction* that Descartes really begins to divide the body from the mind.

For Descartes, the proof that the mind and body are inherently separate is the fact that while the body is divisible, can be broken up and rearranged with little effect to the identity of the person, the mind is "utterly indivisible" (56). To understand this, Descartes looks at how the body works and comes to the conclusion that bodies are much like machines, sending feedback to our minds through nerves in a rather mechanical fashion:

> Likewise, when I feel a pain in my foot, physics teaches me that this sensation took place by means of nerves distributed throughout the foot, like stretched cords extending from the foot all the way to the brain. When these nerves are pulled in the foot, they also pull on the inner parts of the brain to which they extend, and produce a certain motion in them. This motion has been constituted by nature so as to affect the mind with a sensation of pain, as if it occurred in the foot. But because these nerves need to pass through the shin, thigh, loins, back, and neck to get from the foot to the brain, it can happen that even if it is not the part in the foot but merely one of the intermediate parts that is being struck, the very same movement will occur in the brain that would occur were the foot badly injured. The inevitable result will be that the mind feels the same pain. The same opinion should hold for any other sensation. (57).

Descartes is alluding to an important point here, arguing that our mind is chiefly accepting and processing data, neural signals being transmitted through the nerves from parts of our body. It is because of our mind's sole duty as data processor that should a nerve ending begin sending the wrong message, our minds would have no way of distinguishing between faulty and valid information because our minds are not inherently part of our bodies—they are merely along for the ride.

With this in mind, I now shift the chapter's focus to a newer science fiction author, also British, who takes some of Banks' ideas and with a great part of Haraway's anxiety, with some of Kurweil's optimism thrown in, to consider where we are heading in the future. I place Morgan here because he dives directly into the mind/body argument,

theorizing on a future of swapping minds and bodies unlike anyone I've considered so far. It is through Morgan's work that I have grown a better understanding of how the mind and body work together in the construction and maintenance of the body and how we change as our bodies are modified through technology. It is upon this foundation that Morgan lays so perfectly that I will build my final chapter.

2.7 The Great Unifier—Morgan, Cyberpunk and Disposable Bodies

The separation of mind and body to which Descartes refers is a foundation of many cyberpunk novels that search to explore the relationship between our organic minds and digital spaces. Deborah Lupton explains how some cyberpunk writers refer to our physical bodies as "...the 'meat,' the dead flesh that surrounds an active mind which constitutes the 'authentic' self" (100). With our bodies being thought of *just meat*, we are forced to delve into the philosophical idea of self and what constitutes "the individual." This stance argues that our physical bodies are mere storage places for our authentic self.

Richard Morgan takes this idea one step further in his texts *Altered Carbon* (2002), *Broken Angels* (2003) and *Woken Furies* (2005). Based in the distant future, these texts follow the exploits of Takeshi Kovacs, a former Envoy soldier turned rebellious mercenary for hire. The Envoy Corps are a crack team of guerrilla soldiers sent around the world, via needlecast, to defend the Protectorate's, equivalent to a galactic United Nations, interests and quell resistance: "We just used to go in silent, crush the odd planetary uprising, topple the old regime, and then plug in something UN-compliant that worked. Slaughter and suppression across the stars, for the greater good—*naturally*—of a unified Protectorate" (Morgan *Furies* 24). Highly critical of military intervention and the

merging of capitalism and politics, these texts provide an interesting take on the mind and body dualism through a process called "sleeving."

In the first novel of the trilogy, *Altered Carbon*, Kovacs wakes to find himself on Earth in a strange body. A wealthy man was recently killed, which everyone believed to be a suicide, until his consciousness was downloaded into a new body and he asserts that he was murdered. The problem is he cannot remember who killed him or why, so he hires Kovacs to investigate, an investigation that leads Kovacs into the seedy underbelly of a futuristic Earth society. The next novel, *Broken Angels*, is set 30 years after the first novel, with Kovacs finding himself employed by a mercenary army across the galaxy. It is through this conflict that he is dragged into the discovery of a bizarre Martian device. While he is hired as a bodyguard for the team excavating the artifact, he becomes increasingly involved as corporate greed begins to interfere with both war and scientific discovery. The final novel of the trilogy, *Woken Furies*, takes Kovacs back to his home planet, Harlan's World, where he is again a hired gun, this time charged with the task of eliminating rogue robotic life forms sprawled across the planet from past military engagements. It is during one of these missions that one of his teammates is knocked unconscious, only to claim that she is the reincarnation of the famous rebel leader, Quellcrist Falconer, upon waking up. Kovacs is then forced to protect her from the ruling powers on Harlan's World who are anxious to extinguish any possibility of another bourgeois revolt.

With humanity spreading across the universe, several key changes have been made to the human body to make the prospect of traveling from planet to planet faster and easier. Despite the vastness of space, Morgan's future for humanity is one of galactic

colonization, however his vision turns from traditional spaceship-based exploration to a digital solution: needlecast. Although not explained in depth, needlecast technology is similar to wireless Internet, allowing people to send digital data files from planet to planet over several minutes rather than several hours. While I can speculate that this technology was likely first used for transmitting data, the push for colonization has modified the use: it has become a form of transportation. For this to happen, the mind of a prospective traveler must be digitized and transmitted through the needlecast, leaving behind their "physical self and resleeving somewhere light years distant under an alien sun" (Morgan *Furies* 24).

Because the contents of the brain is digitized, this data must be stored somewhere once it has reached its destination. Rather than attempting to convert the hardware back into wetware, the *consciousness* of an individual is downloaded into a "cortical stack,"

> Snugged inside the spinal column, just below the skull, the mind's black box is about as safe as it's possible to make it. The surrounding bone in itself is remarkably resistant to damage, and just in case good old evolutionary engineering isn't up to the job, the materials used to make cortical stacks are among the hardest artificial substances known to man. (Morgan *Angels* 84)

The implication of this technology is that the organic brain is not necessary for an individual's identity to be transported, merely the data that resides within it. The notion of an individual's consciousness being more than the physical brain matter harkens back to Descartes' philosophy that the brain is not actually an individual's "mind," but rather, is what our mind resides in—the capsule that contains our identity. In this instance, the cortical stack becomes the digital seat of knowledge, which is later implanted into a harvested or constructed body. It is the process of implanted the cortical stacks inside new (or just different) bodies that Morgan refers to as "sleeving." To "sleeve" is when a

cortical stack is implanted into the spine of a new body, allowing the individual to continue living out their life, apparently unchanged and unaffected, inside a new body.

Along with offering people new bodies, the process of sleeving provides its users with several opportunities to overcome human fragility. Death is a reality of life when in an organic body, as the flesh cannot hold its form forever, deteriorating over time. By downloading our consciousness into a cortical stack, digitizing our existence, humanity has the ability to subvert this natural end of life, replacing bodies whenever our old ones break down or cease to function. The result of this digital life is one of near immortality, with "real death" only occurring when a cortical stack is damaged so heavily that the individual cannot be retrieved.

Along with reducing the fear of death, the ability to sleeve into new bodies has also rearranged gender politics, as individuals can now sleeve into any body they want, regardless of their original gender. In *Woken Furies*, Mari Ado tells Kovacs about a male dominated religion called The Brotherhood, who discovered that women, sleeved as men, had been joining the religion without their knowledge:

> Yeah, started way back, nearly a decade ago. What I heard, they found a couple of covert females in their midst. Been there for years. Figures, right? Anyone who's re-sleeved could lie about their sex…No one outside of government's got the money to run datachecks on stuff like that. If you've lived in a male sleeve for long enough, even psychosurgery has a hard time telling the difference. So anyway, back at the Brotherhood, it was either go the NewRev single-sleeve-and-you're-out-route, or come over all modern and desegregate. Lo and behold, the word from on high spake[sic] suddenly of change. (Morgan *Furies* 336)

Because gender is no longer mutually exclusive it is losing its power in these texts, as characters jump from one gender to the other freely. Having said that, Kovacs sleeves into male bodies throughout the entire text—while the gender revolution is slowly moving forward, it is certainly not complete.

Another benefit of sleeving is the ability to greatly enhance our bodies through mechanical and genetic means. One of the most commonly used enhancements throughout the text is called "neurachem," a technology that sharpens a character's senses to a super-human level. As Kovacs begins to enter dangerous or difficult situations, his neurachem kicks in and "time turn[s] dreamlike. The neurachem made everything impossibly slow, separate images drifting to the floor of my vision like autumn leaves" (Morgan *Carbon* 289). By enhancing his ability to process information so fast that time appears to slow down, Kovacs is given an edge on his opponents, able to react far faster than those without the technology. In this way, all warfare becomes information warfare—the soldiers and their wares become bits of data on a gory spreadsheet, to be calculated, and their combat reduced to bloody equations with no denominators. Neurachem isn't the only technology being implanted into bodies to give them an edge in a fight, as weapons are also moving internally. The character Orr, a mercenary on Harlan's World, has a cannon-like weapon installed directly into his midsection, concealing an immense amount of firepower under clothing as revealing as a t-shirt (Morgan *Furies* 24).

Along with implanting physical technology, like weapons, within these bodies, the bodies themselves can also be biologically enhanced, grown to order with special genetic traits to enhance a user's abilities. After causing serious damage to one of his bodies, Kovacs sleeves into an Eishundo Organics body that is part human, part gecko:

> Along with the standard combat biotech, my recently acquired sleeve—Eishundo Organics, whoever they once were—came equipped with gecko-gene enhancement in palms and soles of the feet. I could—assuming I actually fucking wanted to—scramble up a hundred meters of cliff face with no more effort than most people needed to climb a ladder. In better weather I could do it in bare feet, and double my grip, but even like this I could hang here pretty much indefinitely.

> The million tiny gene-engineered spines in my hands were bedded solidly in the rock, and the perfectly-tuned, fresh-from-the-tank muscle system required only occasional shifts in posture to beat the cramping tiredness of long strain. (Morgan *Furies* 99)

Here the language used to define the body slides eerily closer to the way North Americans talk about machines, especially cars. To Kovacs, this new sleeve has nothing to do with his identity; rather, it is merely a tool that will allow him to complete his mission. The discussion surrounding the Eishundo Organics skin gets even more consumer-oriented, as Jack Brasil, an old friend of Kovacs, admires his new body, commenting that it has "Flexibility and endurance through the roof, reflex wiring you don't start to see again until Harkany got started back in the early three hundreds. Man, they just don't build them like that anymore" (Morgan *Furies* 286). Through the use of technology, bodies can be customized and optimized for specific tasks, allowing users to transcend the limitations of unmodified, organic bodies.

Although implanting into customized bodies provides wonderful opportunities, the technology does not come without drawbacks. One problem Morgan associates with sleeving is "Psychoentirety rejection," also known as "fragmenting," when the individual has difficulty integrating into a new body (Morgan *Carbon* 151). The notion that the brain would reject a different body harkens back to the arguments made by Banks about the interconnection between minds and bodies, implying that it is not *natural*[5] for our minds to be transplanted into different bodies. This rejection of the new body comes in two forms, mentally and physically. As Kovacs explains after being sleeved on Earth for the first time, "This is always the toughest part. Nearly two decades I've been doing this, and it still jars me to look into the glass and see a total stranger staring back at me"

[5] By natural, I mean the "status quo" to the typical, organic human experience.

(Morgan *Carbon* 14). In this case, he hasn't mentally come to terms with his new visual identity, clinging to what he used to look like in his old body. Shortly thereafter, while meeting with a lawyer, Kovacs is once again reminded he is in a new sleeve when he has difficulties controlling the emotions of the body (Morgan *Carbon* 92). The implication of these two experiences help show that "resleeving" will not be as simple as jumping into a new body—rather, our mind must learn to be comfortable in the new body, both physically and mentally, before the individual can become fully functional.

On top of the mind rejecting the new body, there is a finite limit on the number of times an individual is capable of resleeving. Morgan believes that to constantly swap bodies, jumping from one physical identity to another, is enough to drive the user insane, causing what Kovacs refers to as "repeat resleeving syndrome," which mangles the user's brain to a state of dysfunction:

> Too many new sleeves too fast leads to Repeat Resleeve Syndrome, which I'd seen the year before in a once-too-often retrieved Wedge demolitions sergeant. They'd downloaded him, for the ninth time since the war began, into a clone-fresh twenty-year-old sleeve, and he sat in it like an infant in its own shit, screaming and weeping incoherently in between bouts of introspection in which he examined his own fingers as if they were toys he didn't want anymore. (*Angels* 83)

Much like psychoentirety rejection, repeat resleeving syndrome also points to a connection between the mind and the body, as the individual loses their sanity when the body is devalued to a point that it is more like a toy or a vehicle than the foundation of a person's identity. Without this foundation, the individual is lost. Another fundamental problem with sleeving: the devaluation of human life in general.

When Kovacs' friend Ortega suffers major brain trauma and slips into a coma, Kovacs' first instinct is to cut out her cortical stack and resleeve her into a functional body, something Ortega's friend, Orr, is appalled by because he sees it as a form of death

(Morgan *Furies* 112). This doesn't make any sense to Kovacs' because he has spent his entire life jumping from one body to another, shrugging off broken or dysfunctional bodies for newer, better, faster models. While it's a benefit that Kovacs could save Oretga by removing her cortical stack and downloading her into a new body, the act of reducing all human beings to tiny metal capsules makes it all the more likely that people will be treated like product rather than individuals. This is apparent at the "Soul Market" in *Broken Angels*, run by a character named Semetaire[6].

When Kovacs and his business associate, Hand, are in need of soldiers, they need look no further than Semetaire's warehouse of cortical stacks to find their recruits (Morgan *Angels* 126). Here, Semetaire sells the cortical stacks of individuals, whose bodies have been destroyed, to the highest bidder. While Semetaire, and other stack warehouses like his, are said to sell cortical stacks in bulk, it is also possible for customers to browse through personalities and histories of stored people as though they were purchasing a new vehicle, weighing the pros and cons of each individual before deciding whether or not to pay for the person to be resleeved into a new body (Morgan *Angels* 128). Ultimately, there is no room for traditional views of "humanity" in Morgan's world, where bodies become transportation devices and identities are physically reduced to nothing more than a small metal capsule. Here, we become nothing more than product.

The limitations of sleeving lead us to question how important the body is to identity and whether tampering with our bodies will tamper with our identity. Throughout all three novels, Kovacs stays basically the same, aside from some character development

[6] Because it does not directly relate to my thesis, I have not taken the time to examine Morgan's take on Haitian rituals and cannot comment on whether this is a white, racist appropriation or not.

through experience. An important distinction that is made throughout the text is that while Kovacs *does* inherent some traits and qualities from the specific sleeves, these bodies have little impact on the unifying principle of his identity. For example, when Kovacs sleeves into the body of a former smoker, he too becomes a smoker as the body craves the nicotine (Morgan *Carbon* 13). Although not a smoker by nature, the body's nicotine addiction ultimately makes Kovacs a smoker for the duration of his stay in this specific sleeve, in the same way that he acquired rock climbing ability while in the Eishundo Organics body. At the same time, when he sleeves into other bodies later in the series, he is never shown smoking again—kicking the habit is as easy as switching bodies.

The question now becomes what role the body plays in our identity? Morgan takes this up in *Woken Furies*, alluding to a possible return of Nadia Makita, also known as Quellcrist Falconer, a revolutionary leader from Harlan's World akin to Che Guevara (*Furies* 171). After encountering a possible virus aimed at Ortega's Command Unit, an advanced computer system that interfaces with the user's brain, she wakes up believing Falconer has been implanted inside her mind. The result is a constant struggle for dominance, as each personality attempts to reign. To make matters more complicated, Falconer is believed to have been "real dead" for several hundred years, without a backup or copy (Morgan *Furies* 175). Despite all this, there is an urgent need for Falconer to return and lead a revolution on Harlan's World, but the question arises whether or not this is the actual Falconer or an imposter or fragment of memory, something that is perceived to be a problem: "Oh please. Can neither of you see what's happening here? You're projecting your desires onto a fucking digitized human sketch. Already. Is this what's

going to happen if we got her back to Kossuth? Are we going to build a whole fucking revolutionary movement on a mythological scrap?" (Morgan *Furies* 404). True as this may be, Morgan goes on to question if it actually *matters* whether or not it is the *real* Falconer in order for her to lead the revolution.

In a universe where people can continually change bodies and form, there needs to be some way to tell who is who, a way of identifying an individual regardless of their physical (or digital) form. For this purpose, Morgan introduces a ceremony called "ascertainment," a ritual that is used to identity individuals by asking questions:

> In today's society, it's as common a ritual as parental acknowledgement parties to celebrate a birth, or reweddings to cement newly re-sleeved couples in their old relationship. Part stylised ceremony, part maudlin *what about the time when* session, Ascertainment varies in its form and formality from world to world and culture to culture. But on every planet I've ever been, it exists as a deeply respected underlying aspect of social relations. Outside of expensive hi-tech psychographic procedures, it's the only way we have to prove to our friends and family that, regardless of what flesh we may be wearing, we are who we say we are. Ascertainment is the core social function that defines ongoing identity in the modern age, as vital to us now as primitive functions like signature and fingerprint databasing were to our pre-millennial ancestors. (*Furies* 431)

Ascertainment is important because it elucidates how Morgan feels about the mind and body dualism—the mind, specifically remembered past experience, forms the individual. Despite suggestions to the contrary, Morgan argues that regardless of what body an individual inhabits, they will still be the same person. What *does* change people is historical experience, because while several people can experience an event together, they will all be affected by those experiences differently. This is what truly changes and forms people into *who they are*, intrinsically, not their bodies. As Ortega goes on to explain later, "You've missed the point, Kovacs. Don't you see it doesn't matter if I am really who I think I am? What if I am just a fragment, a bad sketch of Quellcrist

Falconer? What real difference does that make? As far down as I can reach, I think I'm Nadia Makita. What else is there for me to do except live her life?" (Morgan *Furies* 417). Morgan's argument here is that if you believe you are someone, right down to your very core, then perhaps you genuinely are that person, no matter what body you currently reside in.

2.8 Conclusion

Attempting to pick up where the sapienist thinkers left off, we began this chapter by looking at Iain Banks' vision of a technologically reliant future. Banks acts as a great bridge between the sapienist and post-sapienist thinkers because while he is skeptical about the invasion of our bodies through technology, like Ellul, he is guardedly optimistic, like Vanderburg and Noble, about what these new technologies could bring when controlled. Through Banks' community, the Culture, we are able to see the positive aspects of technological adaptation along with the drawbacks. In the end though, Banks paints a pretty clear picture about technology and machines—they are great as long as they do not visibly penetrate or change the perceived "natural" formation of the human body.

It is from this skeptical optimism that we were introduced to the post-human writers like Ray Kurzweil and Donna Haraway, who herald the coming merging of human and machine as the next step in human evolution. By considering what it means to be a cyborg and how it could impact our lives, a powerful link forms between the disabled population and cyborgs—in fact, the disabled population are a textbook example of cyborgs in our modern society. While the sapienists would shudder at the thought of being considered a cyborg, post-human writers see this as being a site for strength and

resistance. The cyborg body being a site for revolution is particularly true for the disabled population, as it means an opportunity to take the focus off the "*dis*" in disability and begin considering what they are capable of doing rather than dwelling on what they cannot. Unfortunately, an important question remains to be answered: will the modification and restructuring of the human body fundamentally change who a person is? Are they still human?

The question of whether an individual remains human, even when transported into another body, is a question that has spawned an entire field of study about the creation of identity and subjectivity. To Rene Descartes, the *only* thing we can be certain of is our mind and it is for this reason that everything that makes us who we are, internally, can only be held within our brain. Descartes surmised that here is a division, a disconnection, between the mind and the physical body that we reside within. This theory has been latched onto by cyberpunk authors who experiment with the idea of moving our minds from one body to another and no one does it better than Richard Morgan.

Unlike Banks' skepticism, Morgan thrusts us into a world that not only encourages body swapping, but where hopping from one body to another becomes a necessity for a majority of the population, especially the wealthy and the military. By following Morgan's main character, Kovacs, through the stories, we see that while changing bodies does have certain effects on an individual, it ultimately does not change who Kovacs is. By removing the importance of our physical bodies on our overarching identity, we open the door to modifying and reconfiguring our bodies without infringing on the ever-important things that make "us" who we "are." It is for this reason that my next chapter will now step back from the world of science fiction and begin looking at the

modern reality of life with a physical disability in Western society and how the acceptance of adaptive technologies into our own bodies (and identity) provides the opportunity for liberation.

Chapter 3
The Spectrum of Ability

To Haraway, cyborgs provide us with an opportunity to move away from typical gender and race roles by subverting what it means to be *human* while still holding on to our fundamental identities. She sees that the ideas of sexism and racism are inherently based on the perception of the body, so what better way to tear down these perceptions than by developing an entirely new category that does not rely on a fixed perception on body? I'm not sure if Haraway ever considered that the idea of becoming cyborgs could be empowering to the disabled population, but I feel that the disabled community is in a great position to understand and accept the idea of cyborg culture because we are already living the cyborg lifestyle, merging machines with our bodies to allow us to gain our independence.

Haraway believes ardently that "[c]yborg writing is about the power to survive, not on the basis of original innocence, but on the basis of seizing the tools to mark the world that marked them as other" (Haraway, 175). It is within this statement that I see the true power of becoming a cyborg, of admitting that my technology has penetrated and changed my body. By accepted and naturalizing my experience, I have the power of liberating myself from the *confines* of the device—to become a single unit rather than its rival. In this final chapter I will rethink how I have incorporated this *tool*, my power chair, into my own body in order to "mark the world" that is continually marking *me* as other. This chair has become a part of me, completing my body in a way that allows me to integrate into *normal* society. No longer should we look down upon our adaptive

devices as being limiting or confining, never again should we look to another disabled individual and sympathize for "how hard" it must be *struggling* with a disability. It is time to stop looking at wheelchairs as being hindrances or signifiers of loss, but rather, to see them as part of the disabled body in the same way that legs are a part of the *non*disabled body.

It is from this mode of thinking that I have begun rethinking *disability* and attempting to discover ways around the terminology. As I have shown in previous chapters, the language that surrounds disability drips with perceptions of loss and vulnerability. Because of this, the obvious solution is to explode the categories entirely and stop segregating the disabled from the nondisabled. No matter how often the terminology that is used to define the disabled is changed, the new phrases and terms become imbued with the same sense of distain. It is for this reason that the obvious solution is to explode the categories entirely and stop attempting to define some as "disabled" and others as "nondisabled." Unfortunately, there are several key reasons why this is not a feasible solution.

The first explanation for this necessity of definition comes from the reality that individuals with physical limitations are visually different than those without; it is difficult to ignore the fact that a majority of the public find mobility through the use of their legs while a slim minority use manual or electric wheelchairs, crutches, canes or other adaptive mobility devices. Because individuals with physical limitations adapt to their surroundings through a myriad of ways that are not stereotypically normal, many people in the general public feel it necessary to subscribe to stark binaries between

normalcy and abnormality, hence the use of paternalistic and condescending terms like "cripple" or "handicapped."

Hinging on this understanding is the reality that an individual with a "disability" does have some form of medically diagnosed disorder. It cannot be denied that an individual with Muscular Dystrophy is "handicapped," as the disease results in the individual being too weak to walk. This is a simple reality that cannot be escaped; however, we can push for less emphasis being put on the lack of ability and more being placed on the actual individual. Much like using the phrase *disabled*, specifically referring to someone by their disablement places more emphasis on their disability as being the defining factor of their personality rather than other internal factors that actually dictate their individuality. Furthermore, it needs to be understood that while there are some medically predictable outcomes from specific sets of disabilities—for example, Muscular Dystrophy affects an individual's muscles—the actual "disability" does not make the individual an automaton who is indistinguishable from an all encompassing monolithic group of "disabled people." In this sense, it is useless to refer to someone by his or her disability, as it is a superficial feature that has nothing intrinsically to do with the individual.

While these reasons are semantic, a foundational reason why our society forces segregating terminology of the disabled is because a standard is needed in order to identify which individuals will receive some combination of social and medical assistance. Furthermore, these types of classifications are able to help us understand the level of assistance that is required for a specific individual. For example, it would be a waste to provide an expensive electric wheelchair for a paraplegic who is capable of

being mobile in a cheaper manual wheelchair. This distinction is also important as it optimizes an individual's independence, ensuring that they have the equipment that optimizes their ability without causing them to become reliant on unnecessary technology.

When looking at the reasons why terminology is used to segregate the disabled population from the rest of the community, the only substantial reason to classify someone as being disabled comes in the form of understanding their medical and social assistance needs. This necessity restricts us from completely obliterating the classification of some as being disabled while others are not; however, this does not mean that we, as a community, must systematically segregate anyone who is perceived to be different. Rather than focusing on what people *cannot* do, we should instead look at this portion of the population for what they are, cyborgs, whose lives revolve around *adapted* ability rather than *loss* of ability. It is for this reason that I suggest the implementation of what I call the *Spectrum of Ability* as a means of both understanding and defining individuals with medically diagnosed limitations.

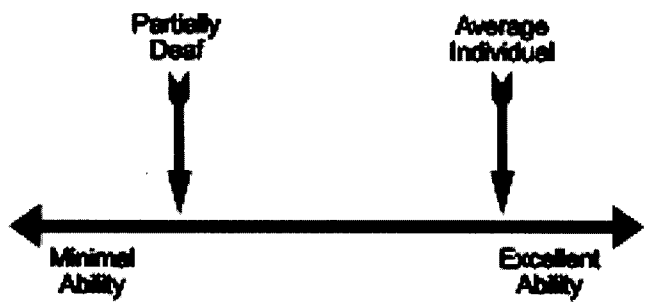
Something that many people forget when considering disability is that, in essence, everyone has some form of "disability." As discussed earlier, when broken down to its core parts, *disability* defines an individual who is lacking in ability by comparison to what is considered to be the average level of ability. In this sense, a typical high school student could be said to have a *disability* when compared to a professional athlete, as they are simply not as proficient at playing that particular sport. Along the same lines, a business manager who is deficient with a computer can be assumed to have a *disability* when compared to his or her administrative assistant who that has a higher computer

literacy rate. The *Spectrum of Ability* attempts to open up the definition of disability to include everyone in the community, not just those who have been diagnosed with a medical limitation. Unlike the medical model of disability, the *Spectrum of Ability* understands that all human beings have both strengths and weaknesses that are influenced by a myriad of complex social and scientific stimuli. The *Spectrum* shows that individuals with disabilities are not different, but rather, that there is no standard to dictate what is the *proper* or *normal* means of existing and interacting in this world, because humans are adaptive creatures who will use their talents and surrounding environment to accomplish the task and integrate themselves inside a set of social standards. In the same way that people use glasses to help them read a book, individuals who use wheelchairs should be looked upon as ordinary people who use a piece of adaptive technology to gain the mobility that is taken for granted by many individuals who are capable of using their legs to walk.

The *Spectrum* attempts to categorize human abilities along a horizontal, non-hierarchical, continuum that defines an individual's ability in a specific category. For instance, an individual who is partially deaf would find themselves located somewhere on the left side of the "Hearing" continuum, unlike an individual who has no difficulty hearing that would be located somewhere on the right-hand side of the "Hearing" continuum.

By looking at the representation of this on paper (See Figure 3.1), the first thing someone might notice is that an individual who is hearing impaired is placed on the same continuum as

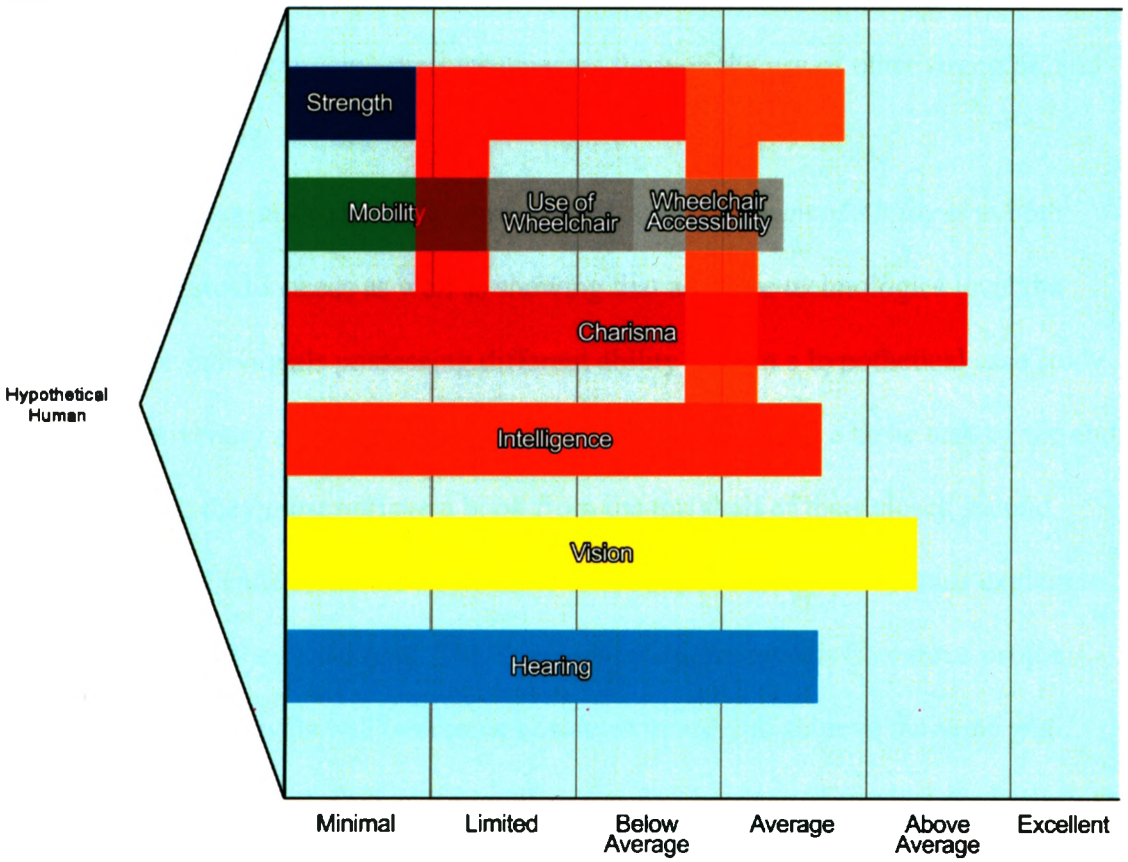
Figure 3.1



someone who has the ability to hear. Placing everyone on a nonhierarchical continuum is significant: unlike previous methods of classification, the *Spectrum* acknowledges that lack of ability does not mean an individual should be considered completely different than an individual who is talented in that specific ability set, but rather they simply have different levels of the same ability. By using the same methods to classify and categorize ability for both the disabled and nondisabled, the linguistic segregation previously imposed through the use of binary terms is eliminated. Furthermore, the lack of hierarchy implies that "more" ability is not necessarily better than "less" ability; it is simply in a different place along the same continuum.

The *Spectrum* does not confine an individual to one specific continuum either. By approximately rating all of an individual's ability levels, a *Map* can be created that represents all of an individual's strengths and weaknesses. Much like the *Spectrum*, the *Map of Ability* is non-linear, with many sections interweaving and overlapping to form a mosaic. This tapestry of ability occurs as an individual adapts to their surroundings and uses their stronger abilities to make up for some of their weaknesses. It is foolish to think that because an individual is not strong enough to walk means that their level of strength is static. In this example, while the individual is quite weak, they have a lot of charisma, which can be used to supplement their lack of strength by politely asking someone near them to complete the task that they are fundamentally too weak to complete. While they are not physically completing this task themselves, they are adapting another strength to make up for their lack of ability. In this sense, the one ability attaches itself to another ability set, thrusting the individual up to a level of increased functionality (See Figure 3.2).

Figure 3.2



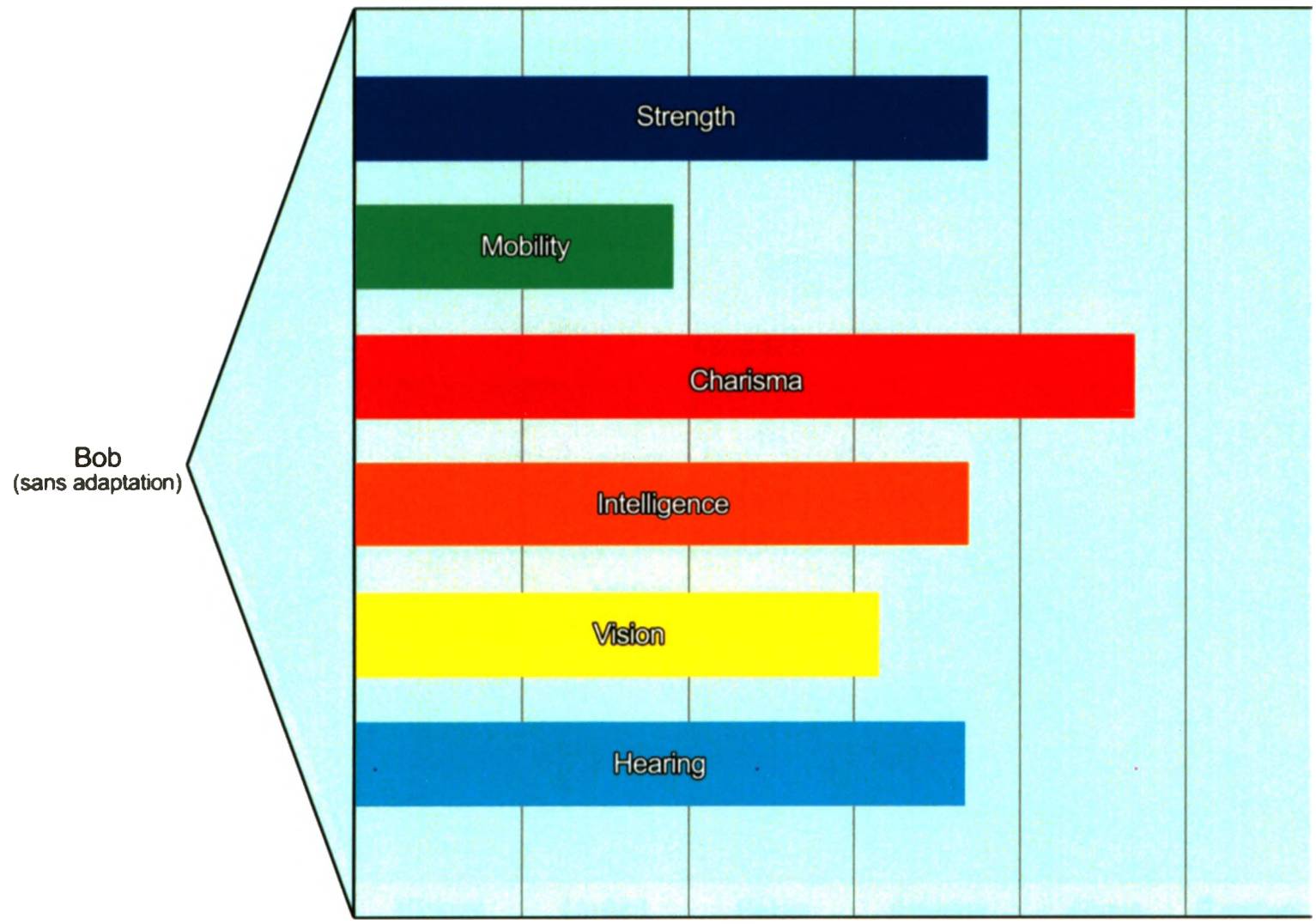
In the same way that other abilities can be used to make up for another lack of ability, individuals are also capable of using outside sources to supplement their inability. If we refer to Figure 3.2, because of the individual's physical weakness they are rendered quite immobile. While to some this would appear to be a serious disadvantage, through the use of adaptive technology—in this case, an electric wheelchair—the individual is capable of raising their level of ability to near-acceptability. To go a step further, the individual is raised even higher when they are in an environment that has been outfitted to be fully wheelchair accessible. It is this mixing of ability and adaptive technologies that demonstrates that the ability level of an individual previously classified as being disabled is really no different than an individual previously classified as being

nondisabled. This then raises the question; how necessary is it to define someone as being "disabled" if they can overcome their weaknesses through the use of other strengths, and adaptive technologies?

A simple case study illustrates how effective the *Spectrum of Ability* is at both defining an individual's needs as well as showing that adaptive technologies level the playing field for individuals possessing different ability sets. In a hypothetical case study we ask three university students in their early twenties to complete a basic task by the end of the night: first, they must retrieve a book from the top shelf of their closet; second, they must read and understand the contents of the book; and finally, they must explain to several people what they have read. The *Spectrum of Ability* reveals how three people with different ability levels will overcome obstacles in order to achieve the same goal.

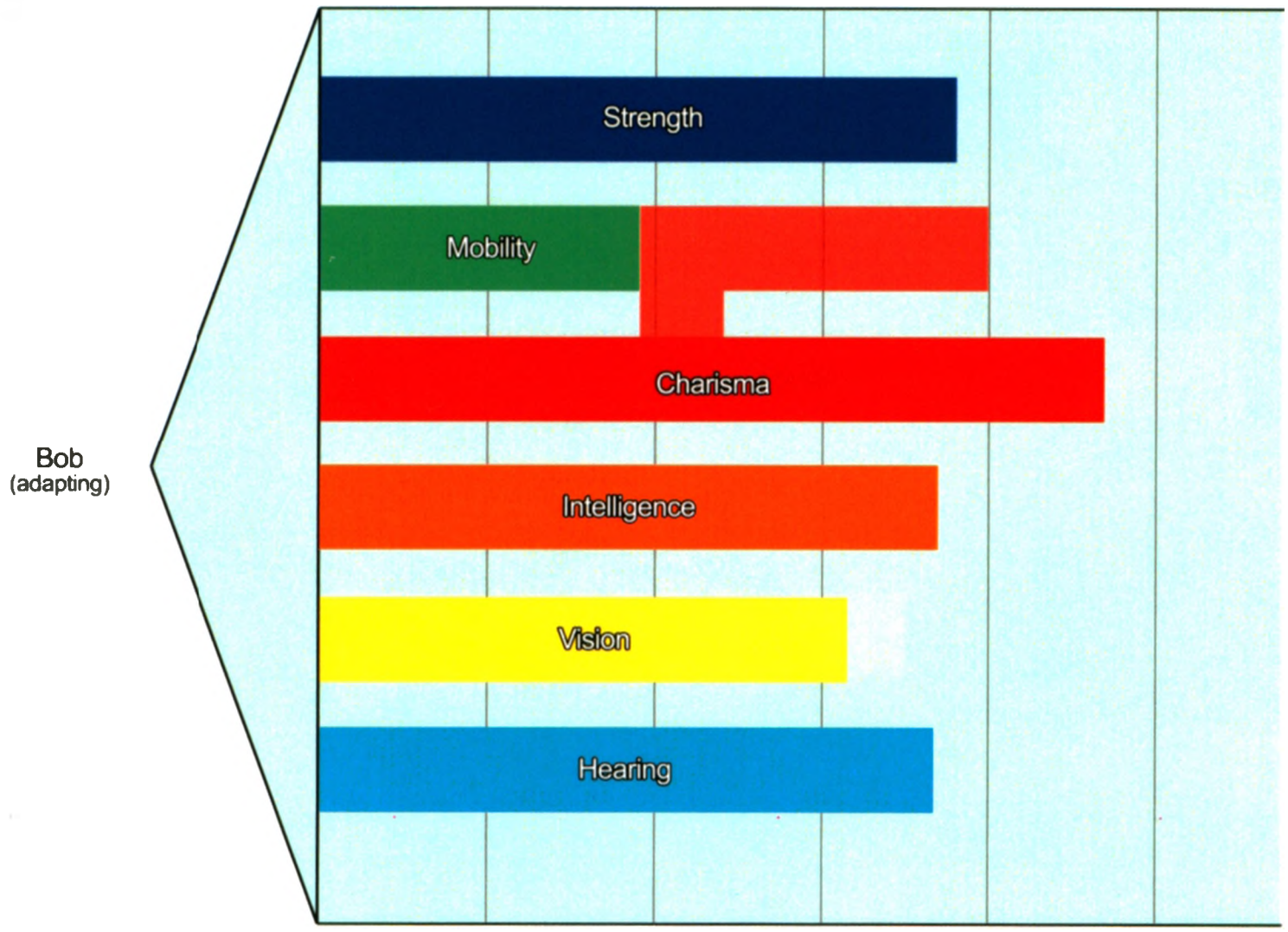
The first individual, Bob, is a friendly man who, because of a spinal cord injury at birth, requires the use of a manual wheelchair to give him increased mobility (See Figure 3.3). Of the entire exercise, the first stage of the task causes Bob the largest amount of difficulty.

Figure 3.3



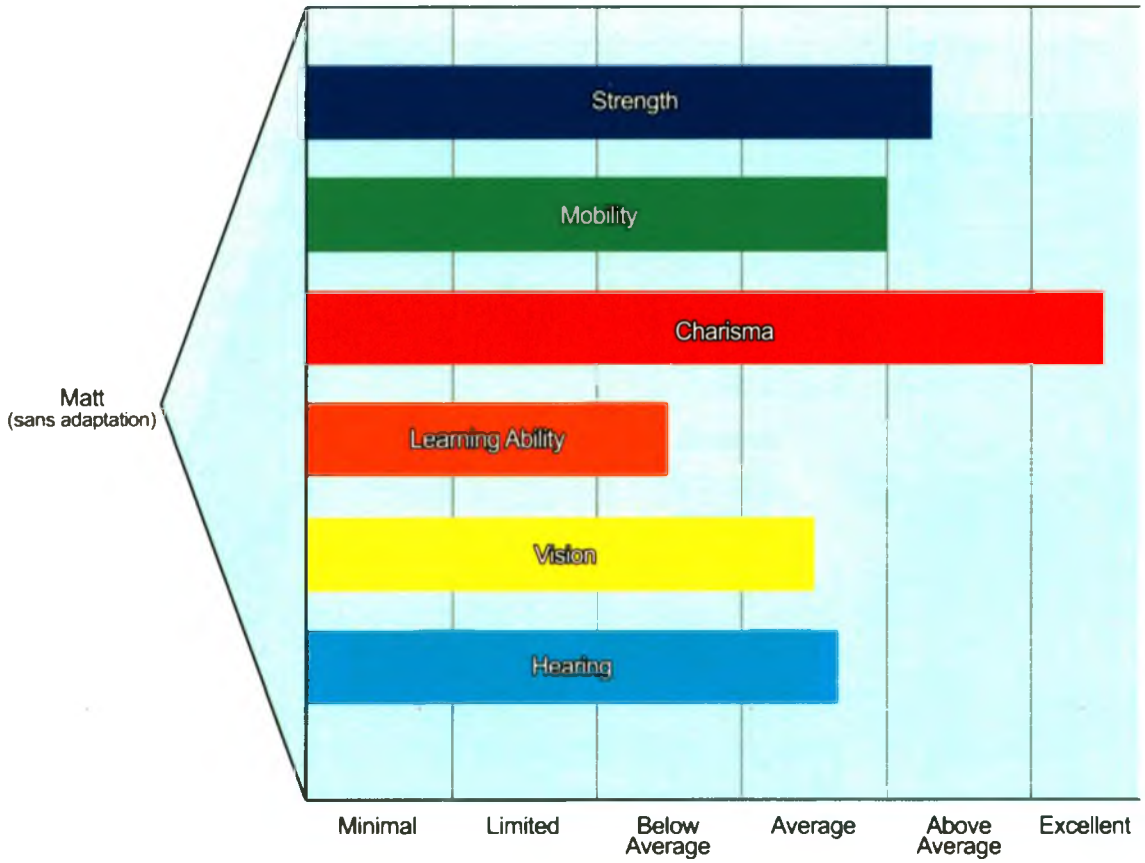
Because Bob is not capable of standing up, it is difficult for him to reach the book that is located on the top shelf of his closet. To overcome this "handicap," Bob will rely on his above average social skills in order to call a friend to request assistance (See Figure 3.4). Being asked, Bob's friend comes over and retrieves the book for him. Bob is now able to proceed with the task, reading the book and telling several friends about what he thinks, completing the objective with little difficulty. Even though Bob is diagnosed with a disorder that initially limits his ability to complete this task, he is capable of overcoming these obstacles by relying on his other abilities.

Figure 3.4



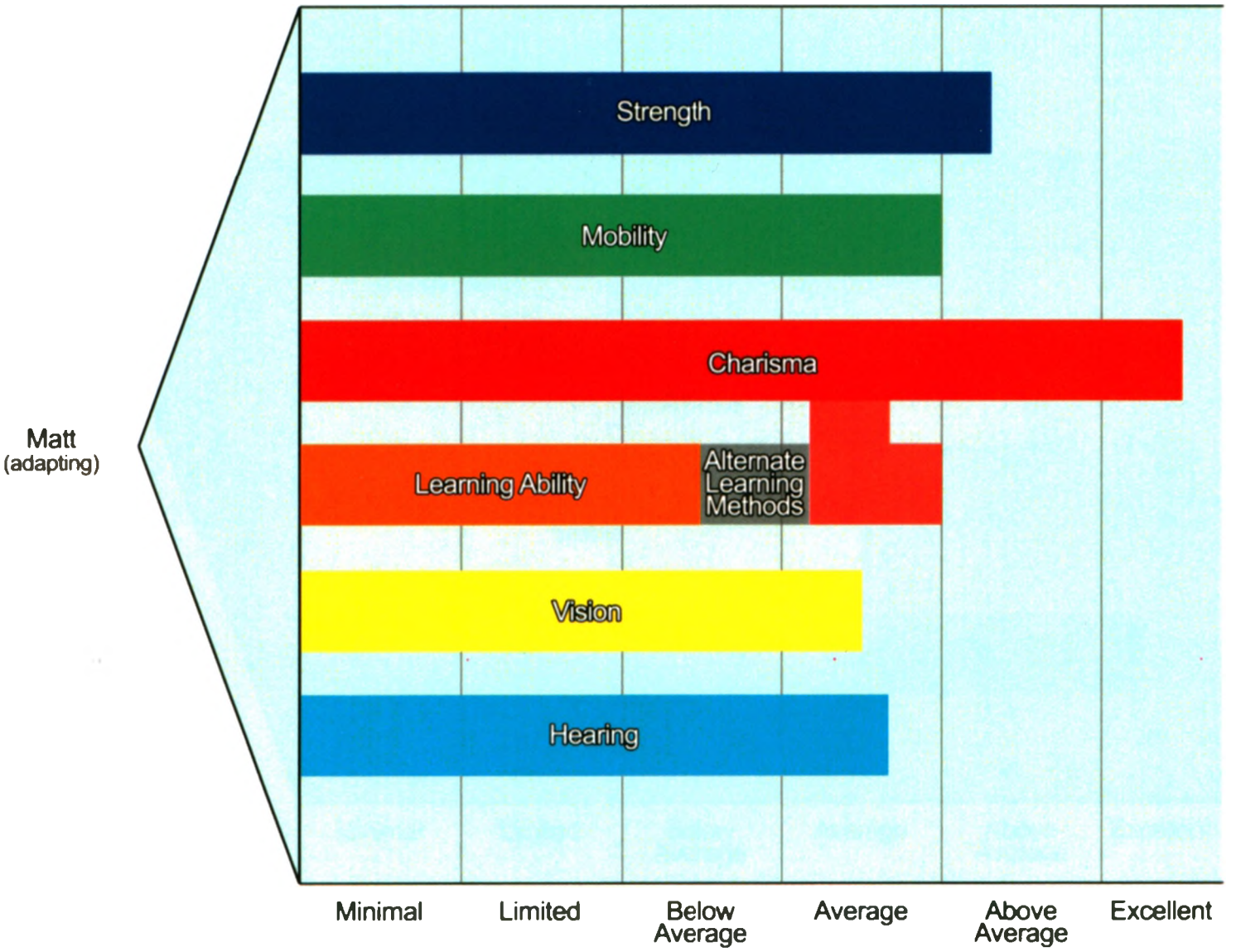
The second individual, Matt, an extremely charismatic and social football player who is liked by almost everyone he meets, was diagnosed with dyslexia and attention deficit disorder, which makes it difficult for him to absorb information through traditional methods (See Figure 3.5).

Figure 3.5



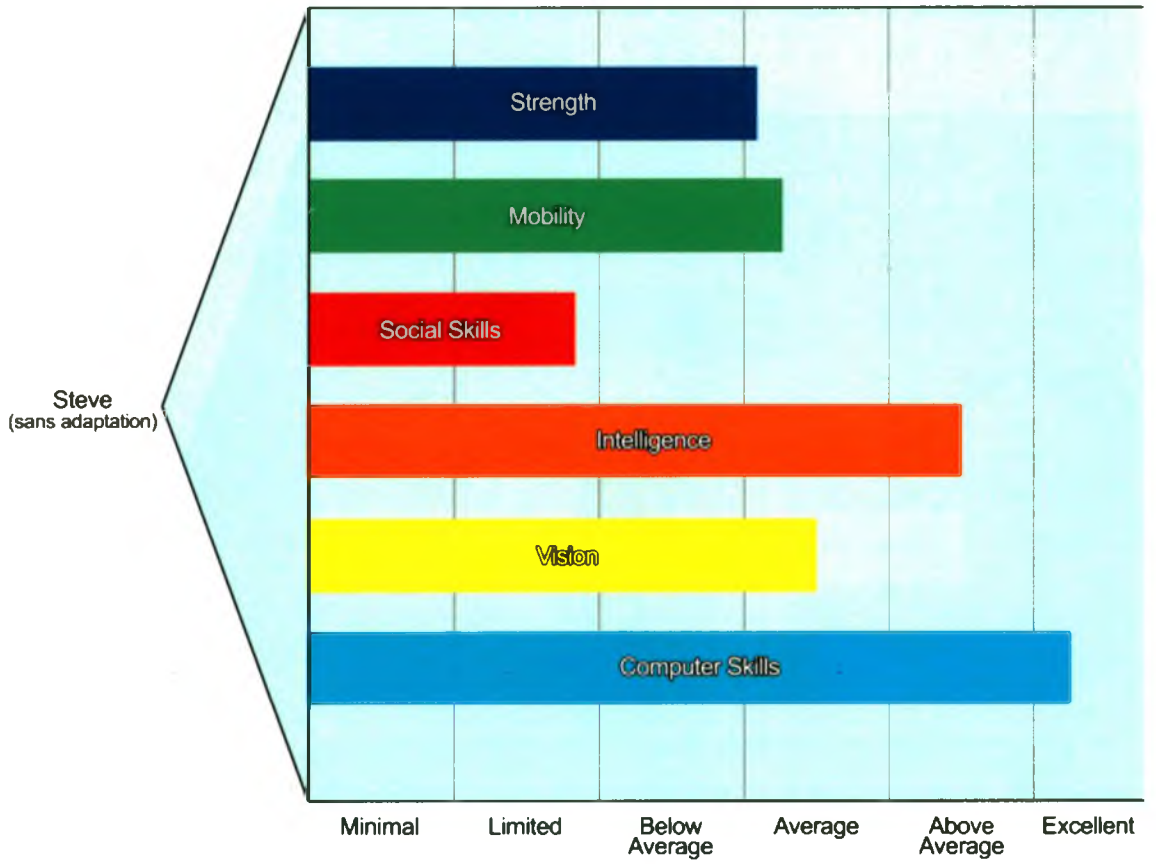
Unlike Bob, Matt has no difficulty with the first portion of the task, as he is capable of reaching the top-shelf of his closet by standing up; however, the second portion of the task causes him a bit more difficulty. Because of his learning disability, Matt has problems looking through the book and interpreting the information that he sees. To overcome this obstacle, Matt immediately reaches out to his friends to help him work through the text and ensure that he understands and correctly processes all of the information. Through the help of friends, and techniques in which he has been trained, he is capable of overcome his learning disability (See Figure 3.6). Upon working his way through the text, Matt has little difficult disseminating the information to his friends who are anxious to hear about the book that he has read. Similar to Bob, Matt achieved his goals by adapting his strong social abilities to make up for some of his weaknesses.

Figure 3.6



Steve, the final individual, a generally nice and extremely intelligent individual, has difficulties interacting in social environments, preferring mediated communication through the Internet as opposed to face-to-face interaction (See Figure 3.7).

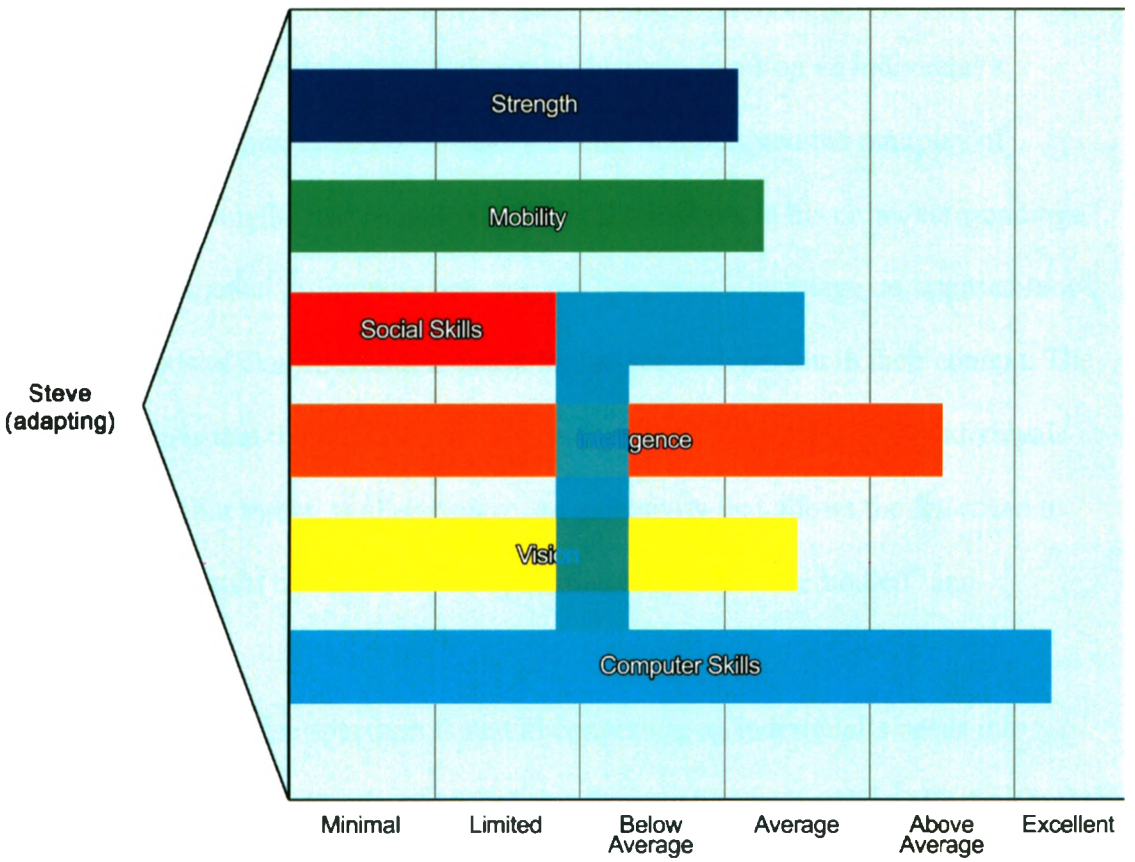
Figure 3.7



Like Matt, Steve has no difficulties retrieving the book from the closet as he is capable of standing up and reaching the book. Similar to Bob, Steve has no problems reading and understanding what he has read. Unfortunately, Steve faces difficulties when it comes time to disseminate the information. Because Steve was diagnosed with a severe social anxiety disorder, he loathes the prospect of face-to-face social interaction and has no friends who he feels comfortable enough to visit and explain the book. To overcome this obstacle, Steve turns to his computer, which he is quite good at operating and through which he can communicate with friends and strangers via instant messaging software. Through this adaptive technology, Steve is capable of completing the task by overcoming his obstacle by adapting some of his other abilities to make up for some of

his inability (See Figure 3.8). Ultimately, he is able to achieve the exactly the same result as Bob and Matt, even though they have proceeded through the task in different ways.

Figure 3.8



An obvious criticism of the *Spectrum of Ability* is that this method actually places *more* emphasis on ability, defining an individual specifically by a set of abilities and weaknesses. The issue here is that the *Spectrum* does not take into consideration who an individual is intrinsically, but rather, appears to break people down into bits of data. Here again is another instance where individuals with "disabilities" are being broken down into mathematical equations rather than being given the opportunity to be unique individuals, an opportunity, in theory that the able-bodied enjoy. To many, breaking people down into

these categories is perceived to be extremely inappropriate and arguably just as dehumanizing as other popular terminologies that have been used to define the disabled.

While the *Spectrum* does pay a lot of attention to an individual's set of abilities, the difference is that this definition does not exclusively focus on an individual's shortcomings, but rather, attempts to make a connection between the interplay of weaknesses and strengths that occurs as an individual adapts to his or her surroundings. One of the fundamental differences between the *Spectrum's* language, as opposed to previous methods of classification, is that it lets us see each person in their context. The other difference is that this form of classification is no longer exclusive to individuals with disabilities, but rather, is all-inclusive, an inclusivity that allows the *Spectrum* to break down the hurtful binaries created by terminology like "able-bodied" and "disabled".

One benefit of the spectrum is that in converting an individual's needs into chartable, quantitative facts, advocates fighting for equality are given an effective tool to measure just how accessible and equal our community is and understand what type of changes need to be made in order to provide an acceptable level of access to services, and life. The *Map of Ability* shows that an acceptable level of accessibility occurs when an individual is able to say that through several adaptations, they are capable of coming level with a societal average. In this sense, determining whether or not an individual requires an electric or manual wheelchair is easy: an individual with below-average mobility does not need the large increase of mobility that is provided by an electric chair. Furthermore, there are instances in which an electric wheelchair provides less mobility (specifically in relation to stairs) as compared to a lightweight manual wheelchair that

can be collapsed and carried up stars, say, by somebody else. It is then the role of the doctor to decide which option will boost an individual's mobility level to the right level. Furthermore, laws like the Ontarians with Disabilities Act can use the *Spectrum* as an effective means of defining the minimum level of access public and private buildings must have in order to be considered "accessible," stating that all affected buildings must be of equal access to all individuals regardless of ability. It is through these applications that the *Spectrum of Ability* will dramatically help push toward an inclusive and equitable future for all individuals, regardless of their varying abilities.

A rethinking of the term disability, and the disability lifestyle in general, is urgently needed as current understandings pigeon-hole an entire population as being fundamentally flawed, lacking and dependent. The medical model of disability understands humans in the way that Noble and Ellul understand machines. These thinkers paint a technological future as being a grim one indeed, where humans either lose their humanity through machine use or are simply enslaved by machines, giving over our autonomy as technology transcends human ability. By looking to science fiction writers like Richard Morgan, we are given a chance to investigate life inside other bodies, as well as what might happen to our identities when technology penetrates or replaces our bodies. It is in this moment of optimism that other thinkers, like Donna Haraway, look to technology as being a site of liberation and empowerment. Using this belief as a basis, I argue the *Spectrum of Ability* recasts the disability debate in a whole new light, where we can begin looking at what people can do *through* adaptation, rather than what they cannot do at all. By taking pride in our adapted abilities rather than being embarrassed by our

technological reliance, we can begin breaking down the linguistic and interpretive barriers that segregate the disabled and nondisabled populations in our society.

Conclusion

Living with a disability, my experience and my perceived experience are two very different realities. Born with Muscular Dystrophy, I have never known any other life but one in a chair and frankly, while I can't make value judgments on what lifestyle is better, I can say with full confidence that I enjoy my life and wouldn't wish to change it. This statement often surprises people, leading them to question if I had the opportunity to receive a cure, if I still would remain in a chair. Ultimately, I can safely say that should a cure become available in my lifetime I would say no—to cure my "disease" would be to kill an important part of myself, a form of suicide I could not emotionally survive. My chair and I have formed an inseparable bond, which I wouldn't want to sever any more than most individuals would want to part ways with a functional leg or arm.

While my perspectives on life with a disability are profoundly optimistic, the most "able-bodied" members of our society, those who do not describe themselves as being disabled, have a very different opinion on what life with a disability must be like. As discussed at the beginning of my first chapter, disability is predominately associated with concepts of loss and sickness. Through the language of disability, the disabled body is constantly marked by inadequacy and deviance. Victimization and paternalism, as I've shown, are keys to the Myth of Disability. People who haven't reflected on disability believe that the disabled suffer from our disorders, we are the victims, and it is the moral responsibility of the nondisabled to take care of us poor invalids who cannot care for ourselves. It is this inability to care for ourselves that language like "confined to a wheelchair" comes from--it is the wheelchair's fault that we are so limited; however, this

couldn't be further from the truth. These this perception of confining wheelchairs provide me with a stepping stone to draw links between the language of disability and the language of sapienism.

With the rise of machine use in Western society over the past hundred years, there is a growing movement, who I refer to as the sapienists, who are pushing back against the march of industrialization and begging for a return to traditional and natural human bodies. As discussed in Chapter 1, the sapienists believe themselves to be critical, not pessimistic about technology. Rather than advocating the complete abolition of machines, they hope to critically assess the potential impact of machine use in our lives and advocate for a refocusing on human needs over the needs of technology. Focusing on writers like Jacques Ellul, David Nobel and Willem Vanderburg, I explored in Chapter 1 how the sapienists believe that humanity and technology have two conflicting and opposite objectives, so much so that in pursuing mechanical goals we risk the death of humanity entirely. Ultimately, the sapienists believe the machine life is one of subverting nature, tearing down the natural order of life and rebuilding a mechanical structure on top—a weak foundation for our continued existence as a species.

These doomsday warnings are largely based on the sapienist writers' perception that we are losing control—as we allow technology to enter our lives we increasingly lose control over our lives as the machines begin to automate tasks, and run independently of us. The sapienists also fear a loss of social interaction, as we increasingly isolate ourselves inside a world of machines rather than a society of humans. The reliance on machines is also believed to lead to a loss of intelligence, as we increasingly become dependent on the processing power of machines to do the heavy mental lifting. Not only

are machines thinking for us, but also the sapienists believe they are also beginning to subvert our strength—our physical ability to complete tasks is dropping as machines slowly write humans out of the labour equation entirely by completing tasks faster and more efficiently than a human operator.

It is from this perspective of loss and suffering that the lines between the sapienist writers and the perceptions of disability begin to blur. The language used to discuss those who actively rely on machines is strikingly similar to the language used to define individuals with disabilities. Perhaps, I postulate at the end of Chapter 1, some of our ill views of disability stem from our negative association with reliance on machines. To be reliant on a piece of machinery is to be weak and vulnerable, in the same way that to become reliant on a wheelchair has become a sign of weakness and vulnerability. Although a widely held perception, this has not been my experience at all. To me, my wheelchair is a source of independence and, dare I say, has become a part of my body. Yet, despite this melding of body and machine, I sit here an intact individual with a vigorous personality, no different than others who do not rely on a wheelchair for mobility. It is from this standpoint that I began questioning technology and perceptions of the body in my next chapter.

To begin Chapter 2, I began looking at Iain Banks, a writer who straddles the boundaries between the sapienist and post-human writers. Much like the sapienists, Banks' novels often deal with the complex and negative implications of technology and machine use. Through the Culture, Banks offers warnings about the divergent objectives of human and machine life, a conflict that often has catastrophic, albeit logical, results for organic life forms that get in the way. Banks also stresses the importance of manual

labour, favouring it over machine reproduction. Ultimately, Banks looks at the superiority of natural bodies--in one instance, Banks even identifies the body as a temple of memory. But sometimes our organic bodies aren't enough in Banks' novels, so his characters turn to machinic adaptation to make up for these liabilities. Banks' characters often allow technology, like the neural lace, to penetrate their bodies with an emphasis being on whether or not the adaptation changes our "natural" appearance. Provided the organic, natural human appearance is allowed to remain, Banks' characters are free to dabble in all sorts of wondrous technologies—it is not until these enhancements begin to warp or twist the human body that they are perceived to be "bad" or "unwanted."

It is from this ambiguous position that I dive into the Post-Human movement. To the post-human writer, a cyborg is the merging of human and machine; a definition I believe more adequately defines the disabled population. Rather than being loaded with the pejorative connotations of *dis*-ability, the concept of "cyborgs" is surrounded by optimism of enhanced and modified ability—extending human ability. But in order for the disabled to be considered cyborgs, the technology must truly *merge* with the body: otherwise we are just tool users. It is from here that I postulate that my wheelchairs have in fact penetrated my organic body. In a variation of a Marine hymn written by Major General William H. Rupertus, this is my wheelchair—there are many like it but this one is mine. Without me, it is useless. Without it, I am useless.

To draw further links between disability and cyborgs, I then consider Donna Haraway's belief that cyborgs will forever be linked to militarism and capitalism, two institutions that have had a profound impact on both created and controlling the disabled population. Another important element of cyborgization is the conversion of bodies into

data, identified by Rosanne Allecquere Stone, which is not seen any more clearly than through the medicalization and institutionalization of disability.

While it may seem dehumanizing to segregate the disabled population from "humanity," writers like Ray Kurzweil see this as being the natural progression of humanity. In fact, many other post-human writers welcome the incorporation of technology into our bodies. As a result, perhaps rather than lagging behind, the disabled are actually at the forefront of humanity's evolution into post-humans.

While this may be the next step in human evolution, these writers do little to quell the sapienists fear that the invasion of technology into our bodies, modifying and enhancing them mechanically, will irreparably destroy a part of what makes us human. The question we must ask is, what, if any, role or function does our body play in the construction and maintenance of our identity? More importantly, how is this identity changed or altered through the subversion or modification of that natural organic body?

For Rene Descartes, the answer becomes clear. Descartes begins his exploration into existence from a place of skepticism, attempting to ascertain what is real and what is not. Eventually, he comes to the realization that he can only be sure that his mind exists, because in using his mind to think he has proven it must be real in some way. Unfortunately, he cannot prove, categorically, that anything else exists. It is from this realization that he begins to develop a separation of mind and body, where our minds merely reside within the fleshy strata of our bodies. This gives rise to the possibility of leaving our bodies without altering our "identity."

Enter one of my favourite cyber punk authors: Richard Morgan. Morgan tackles these very questions through his Takeshi Kovacs' trilogy, a world of cortical stacks,

where our consciousness is digitized and downloaded out of old bodies and uploaded into new ones. In a future where we are capable of swapping into different organic bodies or genetically manufactured super bodies, Morgan does acknowledge that some the problems could exist, like Psychoentirety Syndrome and Double Sleeving, however generally this is a flawless system as it provides Morgan's characters with near immortality. Morgan also believes that the ability to change and modify our bodies will lead to an explosion of gender and further enhanced and customized bodies, including technology like neurochem, custom skins, internal weapons, et cetera. Ultimately, Morgan believes, much like Descartes, that our identity is located within mind, not our body. As such, our identity remains intact, regardless of what body we occupy.

If we can enter different bodies, or just modify our current bodies, without infringing on our inherent identity or sense of "self," then perhaps considering the disabled population a cyborg community is empowering rather than offensive and segregating. It is from this optimism for technology and adaptation that I begin to explore the *Spectrum of Ability* in my third and final chapter.

Ultimately, there will always be a need to identify or classify some as being "disabled" and others as being "nondisabled," primarily for reasons of government or social assistance. I believe, however, that instead of focusing on what individuals *cannot* do, we should instead look at what people are capable of achieving with their own natural abilities and then attempt to augment and enhance those abilities to provide them with the independence enjoyed by a majority of the population. The *Spectrum* attempts to categorize all human ability along a horizontal, non-hierarchical, continuum that defines an individual's ability in specific categories. The *Spectrum* does not confine an individual

to one specific continuum either. By approximately rating an individual's ability levels, a map can be created that represents all of an individual's strengths and weaknesses. Much like the *Spectrum*, the *Map of Ability* is non-linear, with many sections interweaving and overlapping as individuals modify and enhance their ability through various internal and external systems.

A rethinking of the term disability, and the disability lifestyle in general, is urgently needed as current understandings pigeon-hole a population as being fundamentally flawed, lacking and reliant. Although deeply seated in the medical model of disability, these perceptions of loss and reliance are precariously close to the perceptions of machine use by sapienist thinkers like David Noble and Jacques Ellul. These thinkers paint a technologic future as being a grim one indeed, where humans either lose their humanity through machine use or are simply enslaved by machines, giving up our autonomy to superior technological overlords. By looking to science fiction writers like Richard Morgan, we are given a chance to investigate life inside other bodies and what impact technology may have on our identity once it penetrates or replaces our body. It is in this moment of optimism that other thinkers, like Donna Haraway, look to technology as being a site of liberation and empowerment. Using this belief as a basis, I propose that the *Spectrum of Ability* recasts the disability debate in a whole new light, where we can begin looking at what people can do *through* adaptation, rather than what they cannot do at all. Ultimately, all individuals can experience disability, regardless of age, sex, race or creed. That's something unique about the disabled community—it truly is a great unifier. Disability does not discriminate; it can affect us all, regardless of whom we are or where we come from. Once trapped in the tangled web of socially constructed

limitations, like the perceptions of inadequacy, you will be hamstrung just like anyone else. It is from this foundation of sameness, of equal strife, that we can find the strength and the power to bridge the gap of understanding and push for the type of revolutionary change that we so desperately need. By understanding how physical and attitudinal barriers can leave all of us, regardless of who we are, stranded, it is not outside the realm of understanding to see that perhaps the other could be true too—people of varying abilities and social backgrounds should have the same opportunities to transcend these obstacles through the support of our surrounding community: if we can be equal in suffering then we should also be equal in bliss as well. By taking pride in our adapted abilities rather than being embarrassed by our technological reliance, we can begin breaking down the linguistic and interpretive barriers that segregate the disabled and nondisabled populations in our society.

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