

Examining the Politics Surrounding Assistive Devices

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

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Spring 2022

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

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Introduction

Prosthetic devices have been a part of human history since the first human used an object that was not a part of their original body to replace or augment their own body. Currently, the oldest known prosthetic device is a leg found at the burial site of a wealthy Roman that dates back to 300 BC. The leg is comprised of wood and bronze and was more of an outer exoskeleton that functioned as a brace for the wearer's foot (Finch & Heath, Glyn Harvey, 2012). Today, prosthetics have advanced to the degree where they can give their users the similar capabilities to their original limbs, and in some instances, advantages over the normal human body.

As prosthetics have advanced over the years, users of assistive devices have become more capable of leading the lives that an average able-bodied individual can hope to have. These advancements have also served to reduce the entry price that these devices carry and give a larger portion of the population access. While it may appear that the current age offers much more for the disabled community, the truth is the community has expressed that these developments are often done with the goal of making them fit a certain mold that the "normal" body-mind should adhere to. The goal of this paper is to explore the politics surrounding the users of assistive devices through their own experiences and perspectives. The exploration will then be used as a base to conceptualize the possible future regarding the dynamics of the politics these new devices will create.

Definitions

Prosthetics are devices that replace a missing part of one's body or to make an existing part of the body perform better than it is originally capable of doing (*Prosthesis*, n.d.).

Throughout this paper, the terms prosthetics and assistive devices will be used interchangeably to refer to devices that improve a person's mobility or access such as wheelchairs, canes, mobility

scooters, and prosthetic limbs (*What Is Assistive Technology? / DO-IT*, n.d.). The users of these devices are usually labeled as disabled, sometimes referring to themselves as a cyborg or as a Cripborg. A cyborgs, in this instance, is simply any disabled individual who has technology in, or on, their body (Wong, 2020). On the other hand, the term Cripborg is essentially the fusion of cripple and cyborg. Cripborg refers to a disabled individual who must select the technology they will use in preparation for the world they will encounter; the term is heavily utilized in "Transmobility" (Nelson et al., 2019).

Methodology

I approach this topic through the fusion of the history, philosophy, and phenomenological experiences of those with disabilities. In the historical portion of this thesis, I describe the progression of rights and access of disabled individuals over time. In the philosophical portion of this thesis, I discuss the implications that surround the wearer and the prosthetics devices themselves. Coupled with the lived experiences of the individuals, I synthesize these parts to explore the dynamics of assistive devices and their users.

Past

1940's

Interestingly enough, the development of prosthetics, and by proxy exoskeletons, usually does not result from the majority of society realizing that there is a great need for innovation in this sector. The push has been the incentive of making people tougher, allowing them to move faster, giving them more strength, and doing more in a military environment. The refocus on the need for better assistive devices, coincidentally, also comes after major conflicts such as World Wars, Civil Wars, and other conflicts on a large scale (Ott et al., 2002). The soldiers and civilians

who survive these events typically require support or replacements for their legs or arms due to their injuries. As stated by industrial engineer Wilfred Lynch, the development of dependable prostheses would proceed at a slow pace until the creation of new materials that were the answer to military needs in World War 2 (Ott et al., 2002).

1950s

After the World Wars, the Polio epidemic in the 1950s was the next event that shifted focus back to the importance of developing widespread assistive devices and building a more accessible world. The polio epidemic left thousands of Americans paralyzed in varying levels of severity and thus dependent on crutches, wheelchairs, and, in more severe cases, iron lungs or chest shells for respiration (Beaubien, 2012).

Individuals such as Ida Brinkman recalled her life five years after contracting polio and expressed just how frightened she was for her home life after her diagnosis. As a mother and wife, confinement to a wheelchair meant that most of the homely duties that were reserved for wives in mid-century America were not feasible (Williamson, 2012). Ida and a growing number of Americans with physical impairments and disabling diseases were now likely to live longer and healthier lives due to the innovations such as the iron lung; however, despite the improvement in medicine, many disabled people left the hospitals for homes full of physical obstacles (Williamson, 2012).

Without the benefits of explicit civil rights particularly for disabled individuals, doctors, insurance companies, and medical administrators wielded a significant amount of control over their expected quality of life (Williamson, 2012). Medical officials would often ignore input from their patients and believed that the assistive devices at the time were enough to meet the needs of their patients.

1960s through 1990s

Fueled by the Civil Rights, antiwar, and feminist movements of the 1960s and 1970s, disability leaders began demanding civil rights for disabled individuals (Dehadrai, n.d.). These efforts took the form of sit-ins, protesting in the streets, and blocking inaccessible buses from moving (Dehadrai, n.d.). The continued pressure led the US Congress to pass the Rehabilitation Act of 1973, which addressed disability discrimination. Further protests were needed to enact Section 504 of the Rehabilitation Act in 1977 that prevented discrimination within the workplace (Meldon, n.d.).

Following in suit, disability leaders continued to protest and work with the federal government. After years of stalling from public transport companies that fought against the strict regulations for accessibility, a group of disabled individuals threw aside their assistive devices and crawled up the stairs of the Capitol (Meldon, n.d.) which led to the passage of the Americans with Disabilities Act of 1990. This landmark legislation prohibited discrimination against disabled individuals in all areas of public life, including transportation, schools, jobs, and all public and private locations that were accessible to the general public (ADA, n.d.).

Now

According to the World Health Organization in 2011, approximately 16% of the adult population over the age of 18 years old has some type of disability. The data was collected from 70 countries worldwide, 59 of which represented 64% of the total population of the world (*World Report on Disability*, n.d.). Furthermore, in the United States of America, approximately 26% of the adult population over the age of 18 years old has some type of disability. By far the largest group within this portion of the population is the 13.7% that have some mobility-related issue (CDC, 2019).

Since the passage of the Americans with Disabilities Act (ADA) in 1990, until now, public space has generally become more accessible for those with disabilities. Some examples of these changes are sidewalks with curb cuts for wheelchairs and other mobility devices; bathrooms and parking locations that are handicap accessible; public buildings outfitted with ramps, elevators, and automatic doors; and other features such as kneeling buses (Eveleth, 2015). These advancements are indeed steps in the right direction; however, the application of the regulations compliant with the ADA are the responsibility of state and local jurisdictions. A significant portion of the enforcement of these regulations are in fact driven by complaints instead of even application of the stipulations across the country.

Common Themes

This is the same sentiment that was seen after the first World War when soldiers claimed that they were simply “reduced to a defect” (Gerber, 2003). “Defects are disposable and abnormal, body-minds or objects to eradicate” (Clare, 2017). The doctors admitted that when an individual was injured, the most pressing issue was the physical damage that was done to the body. Most of the doctors did not feel competent enough to address the issues that would go on to plague the minds of these men until they were able to receive psychological treatment after the wars (Gerber, 2003).

Perceptions of the Disabled

A 2018 study was completed in Germany to research if and how technology affects the stigmas and stereotypes around disabled individuals. The researchers argued that the increasing depiction of bionic assistive devices such as prosthetic limbs and exoskeletons can shift the perception of disabled people for them to be viewed as competent people. The researchers tested multiple hypotheses pertaining to the relationship between perceived and actual competence of

disabled people with bionic prosthetics versus people with physical disabilities but no bionic prostheses. In support of one of the proposed hypotheses, the participants in the testing regarded people with physical disabilities and bionic prostheses as more competent than people with physical disabilities. Contrary to the researchers' expected outcome, the participants did not perceive the people with physical disabilities and bionic prostheses as more competent than able-bodied people (Meyer & Asbrock, 2018).

The results from the study also demonstrated that able-bodied individuals viewed people with disabilities and bionic prosthetics as being warmer (good intention) than people with physical disabilities and no bionic prostheses. Furthermore, the participants did not perceive people with physical disabilities and bionic prostheses as colder than able-bodied individuals (Meyer & Asbrock, 2018). The provided explanation was that individuals with physical disabilities are viewed as having good intentions but lacking the means to execute their intentions. Therefore, society then views these people as warm (good intentions), but still incompetent when compared to their able-bodied brethren.

Amputees, veterans, and other disabled people donning artificial limbs have been portrayed as celebrated sources of inspiration and hard work since the 1940s in the aftermath of World War 2 (Gerber, 2003). One such case was the celebration of Jimmy Wilson, an army private who was the sole survivor of a ten-person plane crash in the Pacific Ocean. Wilson was left without his arms or legs due to his injuries. Upon his return, Wilson became the poster boy for thousands of amputees returning from war to face physical and psychological readjustment to civilian life (Ott et al., 2002). The circulation of images containing veteran amputees, while used to boost national morale and remind everyone of the recent war, unintentionally created arbitrary categories about disability itself. Is there any difference between how the public would view a

disability that was the result of a war injury, an industrial accident, or even a congenital deformity? These categories can be witnessed in the world as the competence and intention of amputees and other disabled individuals are judged simply based on their assistive devices (Meyer & Asbrock, 2018).

Personal accounts from Mallory Key Nelson, a white cis-gender disabled woman depict the difference in treatment she receives from others based on her mode of mobility. Nelson notes the disdain that she often felt from others when she would use her electric mobility scooter to travel her college campus (Nelson et al., 2019). Nelson contrasts this treatment with the doors that are held open, people trying their best to move out of her way, and the apologetic demeanors she encounters when using her crutches or wheelchair. Nelson's observation deviates from the results gathered in the German study where no significant difference between disabled individuals with varying levels of technicality/function of their assistive devices and their perceived warmth (intention) was found (Meyer & Asbrock, 2018).

Cure

It's important to note that there is a difference between the perception of disability through the lens of a social model and a medical model (Barnartt & Altman, 2001). The medical, or normative, model views the issue of a disability as the lack of the body. The social model views the problem of disability as the inability of the body when faced with environmental or social expectations. When solutions are proposed to tackle disabilities, the answers are usually to modify the disabled person or give them some sort of gadgets to navigate the world rather than trying to make the world more accessible. These solutions often ignore the perspective of disabled individuals who do not want to be "fixed," but would rather be viewed as a whole human being (Ladau et al., 2015). "Over a hundred years of war, we became so obsessed with

“fixing” disabled people with high-tech gadgets that we lost sight of how disability is a social condition.” (Young, n.d.-b).

Media depiction of disabled persons overcoming obstacles or of the latest assistive devices, often convey an incorrect, and oftentimes, detrimental illustration of a cure. An issue with this continued demonstration of disabilities is that it reduces them to ideas in the mind of able-bodied individuals that can and need to be overcome. The notion that "disabled people can only succeed by overcoming disability is an ableist cliché" (Clare, 2017). Society then believes that when a disabled person receives something as complex as a bionic arm, this cyborg now has the tool to overcome their disability and become "normal." Nonetheless, what if these devices are not the therapeutic artifacts that they are made out to be? "Prosthetic arm technology is still so limited that I become more disabled when I wear one" (Young, n.d.-a). The children and adults alike who are featured in the media are usually depicted as extraordinary, some sort of hero. For example, a British TV trailer for the 2016 Paralympics Games referred to the athletes as superhumans (“We’re the Superhumans,” 2022). This label implies that these athletes are far beyond the standard limits of human capabilities and that it is in part due to the assistive devices they have used to reach their level.

Moreover, this exaggerated display also leads the rest of society to view the disabled community with increased scrutiny. What happens when a cyborg is able to beat able-bodied individuals in a competition? Will the disabled person be celebrated, or will they be said to have an unfair advantage due to their artificial limb (NEWS, n.d.)? This is a question that would likely have been asked by someone around Markus Rhem before his non-disabled competitions. Rhem, born in 1988, lost his right leg below the knee in a wakeboarding accident when he was 14 years

old. With his athletic desire still strong after the accident, Rhem entered into long jump competitions with the aid of a prosthetic leg. Rhem, with many other long jump victories, went on to set the Paralympics long jump world record of 8.62 m in June 2021. Nevertheless, when Rhem went on to perform in non-disabled sports events in 2014 and 2015, he and the other disabled athletes were disqualified (“Markus Rehm,” 2022). This disqualification came as Rhem was unable to prove without a doubt that his prosthetic did not give him an unfair advantage against the able-bodied competitors. Those situations are a reality that will continue to become more common in the future as prosthetics are continually upgraded to match and even exceed the capabilities of the standard human body.

Going Forward

As time progresses and assistive devices become more popular and mainstream through the avenue of cybernetics and voluntary bodily argumentation, there will most likely be a diminishing of the stigmas and stereotypes that plague the disabled community. Transhumanism is a very real and ever-increasing ideology in this day and age where the price of computational power is decreasing, while access is increasing. Transhumanism is defined as a social and philosophical movement that is dedicated to the development and use of human-enhancing technologies (Britannica, n.d.). "Transhumanists believe that it is a human right to be able to engineer ourselves toward whatever goal we wish. They call this the right of morphological freedom." (Pirtle et al., 2021). An increase in bodily augmentation would naturally lead to a society that is generally more accepting of body-minds that do not fit the standard mold. With further development of 3D printers, the basic components of prosthetic devices could be mass-produced, affordable, and available without insurance approval (Young, n.d.-b).

Conversely, this future may not be hospitable to individuals who are born with disabilities. Transhumanists are joined by "bioethicists arguing for genetic selection as a means of "enhancing evolution," improving if not also the species, then at least the potential lives of future individuals" (Koch, 2010). This illuminates how the desire for improving the human experience may come at the cost of further marginalization of disabled people up to and including the regular abortion of fetuses diagnosed with disabilities. To people like Harriet McBryde Johnson, a disability rights activist who had a neuromuscular disease that made her rely on her wheelchair, "[to] insist she, or others, might be better unborn because they do not share the physical normalcy of someone [able-bodied]," was ludicrous and dangerous (Koch, 2010).

Conclusion

In this paper, I analyzed the dynamics surrounding prosthetics and their users through a combination of historical, philosophical, and phenomenological lenses. The advances in disability rights and the continued efforts to ensure the world itself is made more accessible have certainly resulted in a higher quality of life for those who rely on prosthetics and other assistive devices. The common theme that was evident throughout this exploration was how disabled individuals are usually seen as pitiful and are perceived to be less competent than able-bodied individuals. This perception is further altered by the person's assistive device where their intentions and competence are further judged with arbitrary measures.

The politics surrounding the disabled community will continue to change as transhumanist beliefs become a normalized notion and more people begin to alter their bodies. These transformations will surely have their accompanying political ideologies, but hopefully,

the movement can be used to normalize the acceptance of more body-minds than the current standard that the world holds as true. On the other hand, as more people begin to alter their bodies, the stigmas and biases that certain prosthetics carry may be transferred to disabled individuals in the coming age of technology.

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