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Smart Watches as Assistive Technology for Disability: An Ethical Examination

Les montres intelligentes comme technologies d’assistance pour les personnes handicapées: un examen éthique

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Abstract

Wearable devices, such as smart watches, are being used by the disabled community as a form of assistive technology to maintain or improve their ability to function in daily life. Discussions of ethical technology use often examine issues like data protection and user privacy. However, there are additional ethical issues specific to the disabled community that should be considered by technology companies when they create products utilized by disabled people. This paper explores how assistive technology oversight in Canada is built on assumptions of companies having care-based motivations, which is incompatible with the neoliberal capitalist drivers of most private technology companies. It also examines some of the challenges of collecting and applying data from disabled people for use in technology with machine-learning capabilities. Using the frameworks of feminist ethics of care, combined with the medical and social models of disability, the author uses the Apple Watch as a case study to explore how the development and marketing of these products can be improved to better meet the needs of the disabled community.

Résumé

Les dispositifs portables, tels que les montres intelligentes, sont utilisés par la communauté des personnes handicapées comme forme de technologie d’assistance visant à maintenir ou à améliorer leur capacité à fonctionner dans la vie quotidienne. Les discussions portant sur l’usage éthique des technologies se concentrent souvent sur des enjeux tels que la protection des données et la vie privée des utilisatrices et utilisateurs. Toutefois, des considérations éthiques propres à la communauté des personnes handicapées devraient également être prises en compte par les entreprises technologiques lorsqu’elles conçoivent des produits destinés à ces personnes. Cet article examine la manière dont la surveillance des technologies d’assistance au Canada repose

sur l’hypothèse que les entreprises sont motivées par une logique de sollicitude, une présomption incompatible avec les moteurs néolibéraux et capitalistes qui orientent la plupart des entreprises technologiques privées. Il analyse également certains défis liés à la collecte et à l’utilisation de données provenant de personnes handicapées dans des technologies dotées de capacités d’apprentissage automatique. En mobilisant les cadres de l’éthique féministe de la sollicitude, combinés aux modèles médical et social du handicap, l’autrice utilise l’Apple Watch comme étude de cas pour explorer comment le développement et la mise en marché de ces produits pourraient être améliorés afin de mieux répondre aux besoins de la communauté des personnes handicapées.

Keywords
Assistive technology, Disability, Feminist ethics of care, Health information, Information ethics**,** Social model of disability, Technoableism, Wearable technology.

Mots-clés
Technologie d’assistance, handicap, éthique féministe de la sollicitude, renseignements sur la santé, éthique de l’information, modèle social du handicap, technocapacitisme, technologie portable.

Introduction

According to the World Health Organization (WHO), assistive technology is an umbrella term for assistive products, systems, and services that can maintain or improve a disabled person’s ability to function in daily life (2024). A cane used to restore balance when walking and hearing aids used to amplify sound are examples of assistive technology we’ve likely encountered in our everyday lives. However, assistive technology utilized by disabled people exists beyond those designed to address medical impairments. These can come in the form of using other items when assistive technology is unavailable, such as when disability justice worker Stacey Park Milbern would use her shoes as a makeshift ramp to roll over small steps in her power wheelchair (Piepzna-Samarasinha, 2018). Disabled people also use objects designed for other purposes to solve accessibility issues including wearable technology, such as smart watches.

Wearable technology that can read physiological vital signs are relatively new consumer devices, having only become possible due to recent technical advances such as system-on-chip, allowing devices to be small enough to be worn comfortably on the body in a non-invasive way (Sabry et al., 2022). In an Instagram video posted by @serviceaussiebailey (2024), disability advocate Katie demonstrates how to use a smart watch to collect cardiac information to discuss with your medical team if you suspect you have postural orthostatic tachycardia syndrome (POTS). Diagnosis of POTS is complicated because, as a disorder of the nervous system and blood vessels, it impacts multiple parts of the body, and the cause of the disorder is unknown (John, 2024b). Using mainstream

technology as assistive technology, such as in Katie’s example, poses ethical risks in areas such as data protection and privacy. While these factors are important for technology use across social groups, there are additional facets to consider when examining the ethical risks of disabled people using these products. For example, there is significant inequality worldwide with who can access assistive technology. According to WHO (2024) data from 2022, “as few as 3% of people in some low-income countries were reported to have access to the assistive products they need, in comparison to 90% in some high-income countries” (para. 10). WHO lists various barriers impacting access to assistive technology including high costs, limited product range and access, assistive technology-sector fragmentation, and socioeconomic inequality.

Private technology companies are neoliberal capitalist entities focused on earning profit and when creating products, they may not fully understand the unique needs of the marginalized communities who rely on them. This article argues that adopting feminist ethics of care, when paired with the social model of disability, would allow technology companies to better understand the needs of the community and better serve them when designing products with health features. It also argues that the current profit-driven focus of technology companies can align them with the medical model of disability, further violating the autonomy and dignity of their disabled customers.

Research Questions

Q1: Are private technology companies like Apple ethical hosts for sensitive medical data?

Q2: Do private technology companies like Apple apply a medical or social perspective of disability to their products that are used as assistive technology? Is a feminist ethics of care perspective incorporated into their language use and marketing?

Literature Review

Disability in the Canadian Context

There are many ways to define disability, based on various frameworks and perspectives. Disability can be defined in a way that is limited to groups of people with specific types of medical diagnosis, or broadly to incorporate those with multiple forms of disability and those without a clinical diagnosis. Definitions can also be restricted to those who cannot support themselves economically, or view disability as a wider social concept. Individuals who identify as disabled often centre their definition of disability based on their own lived experience, which also represents a broad spectrum of ideas. For example, disability rights activist, author, and speaker Emily Ladau (2021) defines disability as “a state of being; a natural part of the human experience”, while she quotes writer and activist Imani Barbarin as defining the concept as “not just a physical diagnosis, but a lived experience in which parameters and barriers are placed upon our lives because of that diagnosis.” (p. 9).

While there is no standard way to define disability, it is important for academics to provide some sort of definition in their work to provide cultural and geographic context for

their ideas. This article uses the broad definition from the *Accessible Canada Act*. It defines disability as “any impairment, including a physical, mental, intellectual, cognitive, learning, communication or sensory impairment—or a functional limitation—whether permanent, temporary or episodic in nature, or evident or not, that, in interaction with a barrier, hinders a person’s full and equal participation in society.” (Employment, 2022, para. 3). The wide range of types of disability, including those who have multiple forms of disability, produces a community with a variety of needs and life experiences. It also encompasses a large segment of the population. According to the 2022 *Canadian Survey on Disability*, 27% of the population or roughly 8 million Canadians who are 15 years of age or older are disabled (Statistics, 2023). Disability impacts all aspects of a person’s life including their ability to support themselves financially. Working-age Canadian adults with a disability earn a median income of $38,810, compared to a median income of $46,080 for their able-bodied counterparts (Hébert, 2024). Regardless of their earned income, 46% of disabled Canadians have at least one unmet need of assistive technology, prescription medication, and/or services because they cannot afford them. The inherent inequality created by disability cannot be disregarded when accessing assistive technology, especially technology that is sold at a higher price point.

Technology’s Role in Healthcare Advancement

Smart systems of devices that communicate with each other using common language, often described as the *Internet of Things*, has significantly advanced how computers are

integrated into our lives (Mohammadi, 2022). Its application into healthcare is no exception, with almost endless uses being proposed to improve efficiency in the field. As the cost of producing sensors and other devices has decreased, wearable technology with machine learning capabilities has become a more viable option for healthcare uses (Sathya et al., 2018). Machine learning applications for diagnosing and treating various types of disability is in its infancy and Kumaran et al.’s (2024) paper about the use of wearable technology to identify the early stages of chronic illness is one of many theoretical papers who purport its benefits. These include lower healthcare costs, better patient quality of life, and earlier diagnosis of diseases (Kumaran et al., 2024; Sathya et al., 2018). Medical studies have also begun exploring how smart technology can improve the quality of medical care provided to disabled people. One example is Forchuk et al.’s (2022) study deploying smartphones, touch-screen computers, and health monitoring devices to reduce barriers of access for low-income participants with mental illness who would otherwise be unable to afford such technology. However, many of the devices and systems used in the study were prototypes created specifically for this project. Despite the significant amount of research and publications proposing medical applications for wearable technology using machine learning techniques, this has translated to minimal practical market application as few wearable devices designed for this purpose have been released (Sabry, et al., 2022).

There are several challenges that wearable technology must overcome to be used as reliable healthcare tools. Healthcare is a rapidly evolving field where new tools and techniques are frequently introduced, meaning technological devices need to be robust

enough to be periodically updated so the information produced remains understandable within larger healthcare systems (Sathya et al., 2018). Existing challenges to digital records in the healthcare sector also need to be rectified, such as vulnerability to cyberattacks, the high cost of sufficiently funding healthcare networks, and a lack of logistics to link all the data collected (Gupta, et al., 2024). Another significant problem is that the behaviour data used to train machine learning algorithms is often different than how people wearing the technology behave in real life, resulting in a noticeable drop in accuracy (Sabry, et al., 2022). Collecting information of this type can be especially difficult for more rare medical conditions (Sathya et al., 2018). Given the diversity of the types and severity of disability found within the community, machine learning systems may not have enough data to be able to identify patterns for some conditions (Trewin, 2018). This can lead to disabled people’s data being treated as outlier noise, which is disregarded as being of too poor quality to be useful. These limitations are not always acknowledged in the literature, which will need to be addressed before fulsome progress is made in the field.

Data Collected About the Disabled Community

Information collected about the disabled community has historically been from the perspective of those recording the information such as medical professionals, researchers, and caregivers (White, 2012). This results in medical history that views disability as a negative condition that is measured against the standard of a “normal”, meaning able-bodied, person. Implicit bias of medical professionals also has impacted how people are treated in healthcare settings based on a variety of factors including race, age, literacy

levels, and obesity, as well as the language used by other medical professionals to describe patients in their care (Goddu et al., 2018).

In theory, artificial intelligence should be well suited for tasks related to diagnosing and monitoring various health conditions. Machine learning performs well in situations where binary classification can be used, such as identifying normal and abnormal biometric readings (Kumaran et al., 2024). However, disability is rarely this straightforward, as individuals can have multiple impairments that impact their body in different ways. Medical studies often only examine one form of impairment, meaning that technology using medical data may miss aspects of how disability impacts a person’s life (Shew, 2023). In practice, the variety and severity of disability make collecting usable data for machine learning purposes more challenging than data collected from any other marginalized group (Trewin, 2018). Large language models used in healthcare have also been found to perpetuate or amplify medical bias, resulting in poor quality diagnosis or treatment recommendations based on stereotypes of race, ethnicity, and gender (Zack et al., 2024).

Shew (2023) has coined the term *technoableism* to describe problematic assumptions by the technology sector to create products based on their perception of the needs of the disabled community, often without meaningful consultation and with an end goal of eliminating disability. While well meaning, technoableism results in the suppression of disability culture, as well as the creation of products which do not meet the actual needs of disabled people or tackle the root causes of their discrimination. Despite their extensive lived experience using assistive products, disabled people are generally considered *users*

or *clients* instead of *designers* of assistive technology (Hamraie & Fritsch, 2019). The technology sector is also known to lack diversity within its ranks, resulting in an industry that is too homogeneous, focused on cultural fit, and inhibits diverse perspectives (Watcher-Boettcher, 2017). This is becoming increasingly problematic as technology becomes more integrated in all aspects of our everyday lives, increasing the reach of alienation, bias, or harm inadvertently built into the products and services we rely on. All these factors mean that data collected about disabled people should be done with caution and care to minimize harm.

Methods and Theoretical Framework

This article analyzes the health features of the Apple Watch, as 50% of Canadians who use smart watches or eHealth trackers use Apple products (Statista, 2024). There are many health-oriented features on the Apple Watch that can be used as tools to monitor health conditions by the disabled community. Of particular focus are those that are licensed by Health Canada, as well as any regulations regarding the use of digital health data in the Canadian context.

Two theoretic frameworks are utilized to provide further analysis for the motivation of technology companies who sell products that can be used as assistive aids. Feminist ethics of care is a framework which places relationships as the primary motivation for connecting with others in a way that minimizes harm, resulting in an ethical perspective that values relationship maintenance to make moral decisions (Hamington & FitzGerald, 2022). First developed in Carol Gilligan’s 1982 book *In a Different Voice*, it contrasts

feminine ethics of care with existing moral psychology which prioritized masculine frameworks like individualism and rationalism. It has subsequently been broadened to discuss the role care plays in dominant and subordinate power structures, such as Western countries and their former colonies (Sherwin, 1992). It also has been used as a framework to counter narratives that the disabled community is a dependent social group with little to contribute to society (Morris, 2001). When applied to the context of this article, feminist ethics of care shifts the focus of a company from their economic drivers to their moral requirements to care for others’ wellbeing. This approach is in direct contrast with the existing priorities of many private companies who operate for neoliberal capitalist ends.

The second framework is the medical and social models of disability. The medical model of disability focuses on curing disabled people’s individual impairments or making them as close to able-bodied as possible using medical means (Shew, 2023; Ladau, 2021; Kent, et al., 2018). The social model of disability, by comparison, views impairment as a broader social issue where spaces and systems lack the capability to meet the needs of bodies with various abilities. This shifts the focus away from the individual as the site of improvement, instead challenging discriminatory ideas of disability. It also rejects the idea that disability is inherently negative and instead embraces the unique skills and lived experience that people gain because of their disability/disabilities. These two frameworks contain overlapping ideas of top-down approaches that prioritizes the perspective of those who hold power (neoliberal capitalism/ medical model of disability) or bottom-up community approaches incorporating the ideas of many (feminist ethics of care/ social model of disability). These frameworks have been previously combined in analysis of the

medical field (Sherwin, 1992), human-rights focused disability ethics (Morris, 2001), and critical disability studies (Hamington & FitzGerald, 2022). Using these two frameworks, the language used to promote smart assistive technology can be analyzed to understand the motivations behind their development and use.

Findings

The Apple Watch, alongside other products, is promoted by the company as a healthcare tool. In a healthcare-oriented section of their website aimed at medical professionals, these products are touted as improving efficiency on healthcare teams, making care more personalized, and “conduct[ing] groundbreaking research that moves medicine forward.” (Apple Inc., 2025, para. 1). The company also has a lengthy *Health Report* available on their website, which includes sections on the various features of Apple Watch that can be used to act “as an intelligent guardian for users’ health” (Apple Inc., 2023, p 9). The report includes many anecdotes from customers about how their Apple Watch alerted them or a loved one to a medical crisis, along with statistics from organizations like The American Heart Association. Apple’s CEO Tim Cook, as quoted by Best (2019), claims that the company’s “biggest contribution to mankind… will be about health” (para. 20). Based on the popularity of the Apple Watch in Canada, the features available on it, and the company’s promotion of the product as a healthcare tool, it’s an obvious case study to examine the ethics of using smart technology as an assistive device.

In Canada, laws regarding *Medical Devices Regulations* are a part of the *Food and Drugs Act* (Government of Canada, 2024b). The Regulations cover the sale, advertisement,

and importation of medical devices in Canada, including stipulating safety and efficacy requirements. However, it does not discuss ethical standards or data regulations for the metadata produced by such devices. Under the Regulations, hardware or software which monitors physiological processes are considered Class II; the scale of classification ranges from Class I (least risk) to Class IV (most risk), meaning smart watch health features carry some risk of use and require a Medical Device License from Health Canada.

Apple has five health features licensed with Health Canada between 2019-2024 that are available on the Apple Watch (Health, 2024). The details of these licenses can be found in Table 1. The *Electrocardiogram* (ECG) app allows users to check the strength of their heartbeat and regularity of their heart rhythm (Apple Support, 2025b). This is accomplished via an optical sensor using photoplethysmography, a technology that combines rapidly flashing LED lights with light-sensitive photodiodes to measure the amount of blood flowing through a user’s wrist (Apple Support, 2024). The irregular heart rate feature uses the same optical sensor to detect irregular heart rhythms and atrial fibrillation (AFib). Arrhythmias are experienced when the heart beats incorrectly for a variety of reasons and AFib is one kind of arrhythmia (John, 2024a). The Apple Watch, used with the *Health* app, allows people diagnosed with this condition to track the frequency they are experiencing AFib (Apple Inc., 2023). The company encourages people tracking AFib to wear their Apple Watch as much as possible, especially during exercise, sleep, and meditation. In the US, this data can be directly shared with some healthcare providers, although that option is not available in Canada.

The sleep apnea feature uses an accelerometer to track breathing disturbances while sleeping (Apple Support, 2025a). Sleep apnea is a potentially fatal condition where a person’s breathing stops for a short period of time while they sleep, which left untreated can cause a variety of health complications (John, 2024c). Accelerometers are devices that track orientation and are commonly used in smart devices to detect types of movement for various purposes, such determining the orientation of the screen (Rieman, 2015). The Apple Watch works with the Health app to track elevated disturbances in a person’s breathing over time, requiring them to wear the watch while sleeping at least 10 days out of 30-day period (Apple Support, 2025a). The most recent license is related to a hearing test feature that can be supported by Apple Watch but appears to not be currently in use on this device at the time of writing this article.

Table 1. *Apple Watch Features Licensed with Health Canada*.

Company ID	Licence Number	Feature	Class Level	First Issue Date
145169	112369	HEARING TEST FEATURE	2	2024-12-11
145169	111871	SLEEP APNEA NOTIFICATION FEATURE	2	2024-09-26
145169	108087	ATRIAL FIBRILLATION HISTORY FEATURE	2	2022-07-28
145169	102866	IRREGULAR RHYTHM NOTIFICATION FEATURE	2	2022-02-17
145169	102864	ECG APP	2	2019-05-16

Source: Health Canada. (2024, December 30). *Active license listing by company.* Government of Canada. https://health-products.canada.ca/mdall-limh/information?companyId=145169&lang=eng

In Canada, health information is protected under various provincial and federal laws. For example, a person in Ontario’s health information is primarily covered by the *Personal Health Information Protection Act*, which was first created in 2004 and has been amended many subsequent times (Government of Ontario, 2025). Much of the act

addresses the creation, access, and maintenance of health records. For the most part, it is designed to govern traditional creators of healthcare information such as hospitals, long-term care homes, pharmacies, and services whose “primary purpose is the provision of health care” (Government of Ontario, 2025, 3.4.vii). Metadata from assistive technology like smart watches is addressed in sections pertaining to electronic health records. However, several of these sections, such as *54.1 Consumer Electronic Service Providers,* are being amended at the time of writing and thus are not currently enforced.

Federally, health information collected by the private sector is mandated under the *Personal Information Protection and Electronic Documents Act*, which provides standards for the collection, use, or disclosure of personal information found in digital records (Government of Canada, 2024a). It protects health information that is collected directly or indirectly while providing healthcare services to an individual. There are other federal agencies with policies that impact metadata collected from assistive technology, such as the *Pan-Canadian Health Data Content Framework* developed by The Canadian Institute for Health Information (Canadian, 2024). The framework standardizes the terms and models used in creating e-health and digital health care modernization projects. It is based on standards from both Canadian and international institutions. It includes private companies as one of the groups who create health data and uses care-based language to describe those who are involved in its collection. The framework is designed to map relationships between the various actors involved in the creation, access, and maintenance of health data, rather than a hierarchical approach. This model was designed

with multiple stages of public feedback and some its components, such as the *Canadian Core Data for Interoperability*, is available for use (Canadian, 2025).

Apple has partnered with three research hospitals in the US for their *Research* app, which allows users to opt-in to the collection of health and health-related data to contribute to a specific medical study. While this feature isn’t available in Canada, analysis of this program is meaningful to gain insight into Apple’s motivations for developing and innovating health features for the Apple Watch. It builds upon previous research-based platforms developed by the company including 2015’s *ResearchKit* and 2016’s *CareKit* (Best, 2019). One of the studies available on the Research app, which launched in 2019, is the *Apple Heart & Movement Study* created in collaboration with the American Heart Association and Brigham and Women’s Hospital, which is a teaching hospital associated with Harvard University (Truslow et al., 2024). The study is designed to explore the relationship between activity, wellness, and health through data collected from Apple Watch users, along with a sample of participants completing surveys and phone interviews related to changes in their health. Specifically, it hopes to examine if changes in mobility, heart rate, and/or heart rhythm could be early warning signs for AFib (Best, 2019).

The study followed various legal and ethical protocols that are required for all reputable medical studies (Truslow et al., 2024); before participating users must agree to lengthy terms of service for both the Research app and the specific study including extensive privacy protocols for their data (Horwitz, 2019). Participants are not compensated as part of the study, either monetarily for their time or provided with the technology to participate. Data from the study is currently undergoing statistical analysis,

but initial demographic findings indicate that the initial cohort of around 82,000 participants identify 72% as white, 74% identify as male, and the mean age of enrollment is around 39 years of age (Truslow et al., 2024).

Discussion

The ideas explored in this paper can be used to answer the research questions as follows:

Q1: Are private technology companies like Apple ethical hosts for sensitive medical data?

It is important for technology companies to follow legal requirements when collecting medical data or conducting health studies, which Apple appears to be doing in Canada by licensing their health features with Health Canada and gaining appropriate ethical board clearance for their Apple Heart & Movement study in the US. However, following laws does not mean that companies are meeting all the requirements to ethically work with the health data of marginalized populations. Examining the Canadian requirements for smart watch technologies that collect medical data demonstrates that regulation assumes that companies who produce assistive technology primarily work in the healthcare sector. For example, many of the medical data privacy laws in Ontario discuss traditional sources of health data and rules aimed at devices like smart watches are still in development. There is no single entity monitoring all aspects of the medical applications of smart technology because Health Canada’s mandate only covers the efficacy of assistive technology and not the data collected. As seen in the Pan-Canadian Health Data Content Framework, the underlying assumptions about the motivations of those involved in health data use a care-based framework. This is why it is important to interrogate the motivations of companies

who are not primarily focused on health care before accepting them as a trusted partner in health-based data creation, access, and maintenance.

It is also important for technology companies, governments, and other stakeholders to acknowledge the specific challenges of collecting and analyzing data from disabled people when designing smart systems that handle medical data. This is rarely the case and results in systems that treat marginalized people as outliers; given that the disabled community makes up an estimated 27% of the Canadian population, this group should not be ignored in product development. There are many ways this can be considered, including the data processes used to train artificial intelligence used in assistive technology. According to Trewin (2018) machine learning training data should include specialized models for known groups and “researchers should explore methods to correctly handle data generated by outlier individuals and groups who speak, write, look, or behave differently from the average person” (p. 4). According to Watcher-Boettcher’s (2017) experience advising technology companies, the small adjustments that marginalized communities require are neglected not because they’re difficult to incorporate, but because “the people behind our digital products are so sure they know what normal people are like that they’re simply not looking for them” (p. 40). This false confidence that meeting the needs of the average consumer will meet the needs of most consumers is a blind spot that could be rectified with more meaningful collaboration.

Apple only meeting the needs of a select group of people is reflected in the demographics of participants in the Apple Heart & Movement Study, where 72% of the participants identify as white and 74% identify as male (Truslow et al., 2024). For

comparison, 60% of the US population identifies as white and 49% identify as male. Researchers overseeing this study are having to change their recruitment approach because such skewing of demographics can negativity impact the study’s ability to produce accurate results. This lack of diversity could be a result of the participation model used, where only those who can afford Apple products can participate in the study, but further research would be required to confirm this. It does offer an indication that the company’s primary motivations for collecting health data are not based in an ethics of care or to contribute to the improvement of mankind as Tim Cook suggests, but for financial gain by finding new ways to get users to engage with their products. The website for the Apple Heart & Movement Study highlights three main study objectives that were achieved: understanding how data collected by apps and sensors on iPhone & Watch relate to health, developing new ways to estimate risk and track changes in individuals with specific mobility, cardiovascular, and metabolic diseases, and improving fall detection and mobility features on Apple products (Apple Heart, 2025). These objectives show that Apple can demonstrate how the data collected has improved product functionality over the span of the study and that their products can be used to collect study data. However, the benefit for users is limited to better monitoring of specific diseases, which falls short of their stated aim on the company’s healthcare website of conducting “groundbreaking research” (Apple Inc., 2025).

Q2: Do private technology companies like Apple apply a medical or social perspective of disability to their products that are used as assistive technology? Is a feminist ethics of care perspective incorporated into their language use and marketing?

Apple use of language and approaches for their health-focus features on Apple Watch that embrace both the medical and social perspectives of disability, meaning they acknowledge the autonomy of disabled people but can improve how they engage with them. One way Apple incorporates both a medical and social perspective of disability is found their language choices advertising their healthcare-related apps. For example, on their Healthcare website, Apple primarily refers to the people wearing a smart watch as *patients* instead of *users*, which is the terminology they typically use (Apple Inc., 2025). While this might appear as a harmless decision to tailor a webpage to medical professionals, the choice of words used to describe disabled people contain subtle or obvious connotations, often reflecting societal attitudes (Brown, 2011). The etymology of the word *patient* is from the Latin words *patiens* and *patior* meaning to suffer or bear, meaning that the word has passive connotations implying a power structure where one must suffer through illness patiently until they receive medical intervention (Neuberger, 1999). Pairing words like patient with descriptions of how Apple Watch can allow doctors and those wearing Apple technology to work together to make healthcare decisions creates incompatible messages. Their Health Report also uses a mixture of terms to describe those using their products including user and patient (Apple Inc., 2023), which can be perceived as both confusing and alienating. The only time the report uses the term disability is negatively, to warn against the costs of sedentary lifestyles to describe “disability-adjusted life years” (Apple Inc., 2023, p. 18), which speaks to Shew’s (2023) concerns that technoableism only views disability as something negative to prevent or eliminate.

However, Apple is hardly alone in the technology field for enabling problematic perspectives of disability and should be viewed as a case study of a wider problem. Neoliberal capitalist entities employ top-down power structures, which prioritize traits like accumulation of wealth and exceptionalism in leaders while devaluing traits like empathy and communal knowledge (Chouinard, 2024). It is not surprising that this mindset results in technology discourse largely focused on solving disability in a surface-level way, but that does not excuse the harm it inflicts on disabled people. Another example of how this narrative manifests in technology spaces is how Donna Haraway’s cyborg has been applied to disabled people using assistive technology. Kafer’s (2013) examination of this topic found several examples of discourse that only considered the positive aspects of technology adoption to restore those with physical disabilities to “normal” functionality. Kafer cites headlines declaring “hope” for those in need of assistive technology and for disabled people to regain the ability to walk caused by a variety of ailments. These examples offer uncritical narratives that ignore barriers of access or the negative aspects of technological adoption such as the high costs of cutting-edge artificial limbs that make them unattainable for many, the time it takes to obtain a correct fit over several fittings, and how users must take breaks from wearing them to avoid pain and fatigue (Chouinard, 2024; Shew, 2023; Kafer, 2013). When acting as saviours for the disability community, the same problematic technoableism narratives are being repeated when the technology sector interacts with disabled people.

When creating assistive technology, companies like Apple need to avoid technoableism and embrace community-focused perspectives to avoid perpetuating

harmful ideas about disability. This is critical, given that disability routinely places people in vulnerable positions such as receiving assistance with intimate tasks from caregivers, medical procedures or tests that require full or partial nudity, and disclosure of intimate medical details to receive proper accommodation to participate in society (Morris, 2001). Reducing unnecessary instances of vulnerability, such as not using medicalized language on their website to describe disabled people as patients, ultimately upholds their moral rights and dignity. By using language and perspectives that lack a care and community-based focus, technology companies instead promote ideas of individualism, placing the responsibility on a disabled person to somehow overcome the systemic barriers placed in their path (Sherwin, 1992). For those with permanent or episodic impairments, focusing on individualism creates unhealthy standards which sets up disabled people to fail because becoming able-bodied is impossible. No amount of assistive technology or medical intervention is going to make someone like Katie with POTS able to perform like an able-bodied person when there is no known cause or effective treatment for her syndrome. Shifts towards a broad acceptance of the social model of disability, feminist ethics of care, and other community-focused frameworks are required to minimize the harm inflicted on this marginalized community. While feminist ethics of care is the ethical framework focused on in this article, it is not the only framework that could be adopted by neoliberal capitalist entities when providing products and services to the disabled community. Critical disability studies, disability justice, and crip frameworks with similar principles would be appropriate alternatives.

Future Study

This study offers several avenues for further research, such as disabled representation in developing Apple’s health products or comparing the Apple Heart & Movement Study to similar studies which provide subjects with the technology required to participate. Creating more inclusive studies and including disabled people in meaningful roles when designing assistive technology will create products that are more useful to the community and likely result in better designed products for all users. According to Park Milbern, as quoted by Piepzna-Samarasinha (2018):

> “I see disabled people every day thinking of ideas abled people never would have, primarily by focusing their time and efforts on using what they do have, and the space between, rather than putting their attention on the limitation or lack of ability… [disabled people] have so much at our disposal and most of the world has no idea.” (p. 223).

Luke Anderson, Executive Director of Toronto-based StopGap Foundation, which creates temporary ramps deployed at over 3000 businesses across the country, demonstrates this type of creative thinking (Barss, 2025). Anderson, who uses a power wheelchair, came up with the idea after working in a building that required a cumbersome aluminum ramp to be deployed every time he entered and exited the building (Dawson, 2023). He noticed how many different uses the ramp garnered when it was deployed, from delivery people with carts to adults pushing children in strollers. StopGap ramps’ bright colours draw attention to both their usefulness and flag inaccessibility in public spaces for those who otherwise may not consider the topic (Desai, 2025). StopGap Foundation’s ramps are one of many examples of technology developed for accessibility that have broader social benefits,

commonly known as the *curb-cut effect*. Building on the ideas of Ladau (2021) that the world needs more figurative and literal curb cuts, the technology industry should not look to solve disability but instead consider what they can gain by including disabled perspectives in the creation and development of their products.

While conducting research for this article, the author was struck that the current academic conversation about how smart technology can revolutionize the lives of disabled people often approaches the topic from a medical perspective. Authors rely on top-down power structures when discussing how to improve the lives of individuals and this is often paired with a shallow understanding of the complexity of disability. To highlight this well-meaning but problematic perspective, one example is Kumaran et al.’s (2024) previously mentioned paper about the use of wearable technology to improve identification of the early stages of chronic illness. At no point in their paper do the authors explain what sorts of chronic illness or diseases their machine learning model will detect but do feel confident that their model will be 10% more accurate, 11% more sensitive, and 9% more specific in identifying chronic disease compared to existing versions of wearable technology. Another example is Sathya et al. (2018), who discuss the difficulty in collecting information regarding rare conditions to train machine learning models. They discuss how obtaining such data will be a burden for physicians but do not consider the burdens of the disabled people from whom the data will be collected from. This reflects a medical-model perspective where disabled people are spoken about as research subjects who lack agency or involvement in improving their own lives (White, 2012). These examples are included not to vilify specific studies or researchers, but to provide tangible evidence of

problematic perspectives when discussing disability in technology spaces. The author plans on exploring this topic in future work.

An original aim of this article was to interrogate the reasons why the disabled community needs to turn to other types of technology beyond those whose primary function is assistive technology to meet their needs. This suggests to the author that this industry also suffers from a medicalized perspective that impairs their ability to serve the disabled community. However, as research progressed examining this aspect was outside of what was feasible for this study. Qualitative research discussing the motivations of disabled people who use assistive technology alternatives, paired with research into how assistive technology products are designed, would be required to adequately explore this phenomenon.

Conclusion

This article examines the Apple Watch as an assistive technology device and interrogates the ethics behind its use using a feminist ethics of care framework combined with the medical and social models of disability. By examining the laws and guidance regarding digital health records in Canada, the author finds that many are created with the assumption that the companies involved have care-based business motivations. This assumption generally does not hold true for private technology companies whose primary activities sit outside the healthcare field. Language choices to market Apple Watch show a mixed understanding the medical and social models of disability, with some choices indicating technoableist perspectives. Ultimately, Apple is a case study for wider problems

in the technology industry to design and market products that adequately meet the needs of marginalized populations. A broader adoption of care ethics and social perspectives of disability would be beneficial for technology companies who create products that are used as assistive technology by the disabled community.

Better understanding of the needs of disabled people is crucial for any company creating products or services used by the community, because disability regularly places them in positions of vulnerability and they face significant barriers of access compared to their able-bodied counterparts. Their expertise is often ignored or diminished by those in authority (Hamraie & Fritsch, 2019). Instead, disabled people often turn to each other when their needs are not being met, or they fail to meet social standards based on able-bodied individualism (Piepzna-Samarasinha, 2018). To participate in society in this fashion is exhausting, harmful, and alienating, creating unnecessary challenges for a significant minority within the Canadian population. While this article examines a private technology company, this shift in perspective of moving away from medicalized ideas of disability and instead integrating social perspectives of disability should be embraced by all industries with products and services in Canada. Doing so would result in a more equitable country that will better support the disabled community and unlock the unique, valuable expertise of this often-overlooked group of Canadians.

Author’s Note

The author of this paper identifies as a disabled person with multiple chronic illnesses and uses identity-first language to describe disability. Some people within the disabled community prefer to use people-first language, which uses phrases such as persons with disabilities. The author acknowledges that there is no one correct way to describe disability and does not imply any judgement over how disability should be described in academic writing with their choices.

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