Where's My Jet Pack?

Online Communication Practices and Media Frames of the Emergent Voluntary Cyborg Subculture

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Abstract

Voluntary cyborgs embed technology into their bodies for purposes of enhancement or augmentation. These voluntary cyborgs gather in online forums and are negotiating the elements of subculture formation with varying degrees of success. The voluntary cyborg community is unusual in subculture studies due to the desire for mainstream acceptance and widespread adoption of their practices. How voluntary cyborg practices are framed in media articles can affect how cyborgian practices are viewed and ultimately, accepted or denied by those outside the voluntary cyborg subculture.

Key Words: cyborg, subculture, implants, community, technology, subdermal, chips, media frames, online forums, voluntary

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Introduction

There's a misconception that bio-hacking is a "do-it-yourself" movement. It's much more of a "do-it-ourselves" community. – Grindhouse Wetware 2018

I am a cyborg. I have a computer chip implanted in each of my hands. I know a number of other cyborgs; some have more chips, and some have fewer; some have magnets embedded in their fingertips or arms, and some have even inserted LED lights or ampoules containing radioactive Tritium under their skin. If you find the idea of these implants shocking or uncomfortable, you certainly wouldn't be alone in that reaction. Some of us in the community refer to that as the "Eww" reaction. People often have a need to touch the implant in my hand to truly believe that it is there, to confirm there really is a piece of technology nestled just beneath the surface of my skin. I invite curious people to feel the chip and there are usually two reactions: "Oh, cool!" or "Eww" and they pull back their hands and shiver. The "Eww" reaction. Many people don't realize that implanting computer chips is possible or that there are people amongst them walking around with chips inside their bodies. But we are here, embedded in society with our invisible technology.

People have put objects in their bodies for millennia, and cultures around the world have modified the human body in various ways. Foot binding, neck elongation, ritual scarring, and female genital mutilation are just a few examples; however, this project is not concerned with general cultural practices of body modification. That area has been well researched by anthropologists. Nor does this thesis focus on piercings, tattoos, or other more extreme forms of modern body modification such as subdermal silicon horn implants and body suspension from hooks piercing the skin; although there is some overlap of these practices within the subculture I will be discussing. This project is concerned with people who implant a particular type of

technology into their body; I have chosen to label the people and the subculture they are forming *voluntary cyborgs*.

I define voluntary cyborgs as people who are voluntarily embedding technology into their bodies — implantable technology that has the capability for the creation, collection, retention, and/or distribution of information or data for augmentation or enhancement, not therapeutic, purposes. There are medical reasons people have pacemakers, cochlear implants, or insulin pumps implanted in their bodies and some of these medical cyborgs are members of the voluntary cyborg group; however, the therapeutic and rehabilitative nature of their medical implants are beyond the scope of this project. Consumer-level implantable technology is years away from transforming people into movie cyborgs like Robocop or Iron Man, but early adopters of implantable technology feel they are forging the path for the cyborgs yet-to-come. The experimental implants done by today's voluntary cyborgs can expand our understanding of the limits of the non-medical merging of the body with internal technology which could further the research and development process of future implants.

There are voluntary cyborgs who are creating their own specialized tech for implantation, but for a newcomer to the subculture, computer chips and magnets are the typical entry-level augmentations. Computer chip implants are small glass ampules or biopolymer strips containing a tiny NFC or RFID transponder that can store data and be “read” by an NFC or RFID scanner. NFC stands for Near Field Communication, a technology that uses electromagnetic radio fields to transmit data and information wirelessly when two NFC devices are held within 2 to 4 centimetres of each other. It is most widely used in contactless payment. If you've ever tapped your debit/credit card or smartphone to a point of sale terminal as a form of payment, you've used NFC. RFID stands for Radio Frequency Identification and is a chip or tag that can be read at short range via radio waves by a compatible RFID reader. RFID has a wide use in industries such

as warehousing for inventory or tracking systems. RFID tags are in the new iterations of certain passports and in some types of security management in buildings. If you've swiped a card or key tag in front of a reader to get into your office or apartment building, you've used RFID.

Both types of chip implants, NFC and RFID, are passive implants (see Figures 1 and 2). There are no batteries in the devices embedded under the skin and the power required for scanning to read or write the data or information is supplied by the reader. In the case of the NFC chip I have implanted in my right hand, I use my smartphone with a freely available, generic NFC app installed to read and write to my chip. The RFID/NFC crypto chip in my left hand has a specific proprietary app used to write data and secure the information in an encrypted form for which only I have the password. Data security is an important issue to many in the voluntary cyborg community and drives some of the more recent innovations regarding the implants we add to our meat suits.¹ Many voluntary cyborgs are quite tech-savvy and are aware of various data mining, data surveillance, and data privacy practices used by some corporations and other agents. As a result, some people turn to embedded tech to secure some of their information. The implantable chips can be written with new data and activate various functions in the smartphone that scans the chips. For example, I've previously programmed one of my chips to bring up my Twitter profile on any NFC-capable smartphone to scan it as an integrated contact card. It's a novel way to distribute my social media info.

Implanted magnets serve a different purpose. Magnets that are being implanted by voluntary cyborgs are obviously not the magnets on your refrigerator or in your toolbox. These

¹ My use of the term "meat suit" or "meat" is intentional in an attempt to cause an affective response that the generic term "the body" does not always accomplish. Repetition of the phrase "the body" may desensitize one to the process of shoving metal or glass into one's flesh so interspersing the text with a jarring term is a way to emphasize the intentional and sometimes shocking alterations done by voluntary cyborgs. The term(s) have other meanings and can frequently be used in a sexualized or gendered way — that is not the intent here.

magnets are a small 1.8 x 3.5mm disk (see Figures 3 and 4). They are very powerful and rated at n52 strength which is the strongest rare-earth magnet available. The rare-earth magnets are coated in bio-friendly substances to prevent the metal from leaching into the body. These magnets are commonly inserted into the pads of your fingertips where there are numerous nerves that will heal around the magnet. The purpose of implanting magnets into the fingertips is to enable the cyborg to feel electromagnetic fields. It has been compared to obtaining a new sense, the ability to feel a buzzing or fuzziness around objects that transmit electromagnetic fields. Microwaves, lights, security sensors, and other common objects purportedly give off “auras” of sensory perception in the fingertips containing magnets.

Other cyborgs place larger magnets into their body for lifting metal objects for fun or entertainment purposes. These magnets are coated in the same bio-friendly substances but are placed in any location in the body the cyborg wishes (see Figure 5). There is a magician, Anastasia Synn, who uses subdermal magnets as part of her side-show-themed performances. At last count she has twenty-one magnets and one of the largest magnets in a human body, if not *the* largest, implanted in her forearm (Breedon, 2019). She also has magnets implanted in her tragus; the fleshy protrusion just in front of her ears. Synn uses the tragus magnet implants as speakers to transmit information directly to her ears from someone off stage as part of her act.

Not all voluntary cyborgs use such innovative methods to communicate with each other. Most communicate the same way everyone else does: in person and over the internet. There are several website forums used by voluntary cyborgs as well as Facebook pages, Reddit discussions, Discord channels, and the other virtual forms of communication typically used by groups today. Some also get together at various times over the course of the year to converse in meat space. There are conferences and events where cyborgs meet to discuss current tech, the status of their implants, and to receive new ones. Often at these events, there is some media coverage;

documentary filmmakers are fascinated by voluntary cyborgs, and journalists are often in attendance to observe the community and interview people. The news media has published stories about voluntary cyborgs, and moreover, some voluntary cyborgs actively seek out opportunities to discuss the practices and aspirations of implantable technology with various journalists.

With news media coverage comes increased exposure to wider audiences, some of whom may decide they want to begin implanting technology into their own bodies. These new, prospective voluntary cyborgs often go online and begin following the forums, the news coverage, and find events happening near them in order to gain entry into the community. As more and more people have become aware of the potential of implants and of the people who are embedding tech into their bodies, the community grows and, I argue, is currently in the process of becoming a fully-formed, hierarchical, distinct subculture. Subculture scholars don't often have the opportunity to be a part of a group or witness it as it is expanding and on the verge of gaining coherence in this social form. Consequently, my aim is to provide observations and analysis of how this group of voluntary cyborgs is undertaking this process and how they strive to appear authentic and legible to each other, new members, and to society at large.

This thesis project will describe the current state of implantable technology, the people putting this tech into their bodies, and how they are negotiating the process of forming a subculture of voluntary cyborgs. The formation of the voluntary cyborg subculture is happening right now and changing day to day; indeed, even as I write this thesis the community has undergone pivotal changes and what it may look like a year or five years from now is difficult to predict. Regardless of what the future may hold for voluntary cyborgs, it is significant to understand the formation of a new subculture while it is in the process of developing from a small community of like-minded individuals into a global subculture. My project will focus on

voluntary cyborgs in the United States and Canada as I have been a part of this group for more than five years and I have observed its progression from small regional enclaves of body hackers into a community spread across these two countries. There are members of our community in Europe, South America, and as of quite recently, Africa, but this project will concentrate on Canadian and American voluntary cyborgs.

A voluntary cyborg's body modifications are often not visible to others, and as a result, mainstream society is largely unaware of voluntary cyborgs, their practices, and the subculture they are beginning to form. Additionally, because many of the body modifications are internal and invisible, voluntary cyborgs are unidentifiable to each other when we are out in meat space. In conversation I will often self-identify and show or describe my implants to people, but I cannot visually identify fellow voluntary cyborgs when out and about. I know there are other people with implants in my city as the piercer who does my implants has done them for others, but I have no way to find them without my piercer divulging private information about his customers — which he does not do, and while frustrating, I do appreciate his integrity. So, how does an “invisible” subculture exist and grow? Over the course of this thesis I will describe how subcultures form and assess how the voluntary cyborg community is negotiating the elements that characterize subcultures. In the quest to become visible to those outside the boundaries of the voluntary cyborg subculture, many cyborgs participate in interviews with journalists. Journalists frame their cyborg articles in various ways that influence how the group and its practices are viewed by the mainstream. This thesis will examine what frames journalists use when writing about voluntary cyborgs and any affect these frames have on the voluntary cyborg community.

I begin with a review of academic studies of technology and its relationship to and with the human body in Chapter One followed by an outline of subculture theory in Chapter Two and the various elements that constitute a subculture. An overview of the website and online media

articles chosen for analysis and the methodology of analysis will be presented in Chapter Three.

The forum site analysis of the community and analysis of the online media articles specific to voluntary cyborgs will be examined in Chapters Four and Five. The concluding chapter will summarize the analysis of how voluntary cyborgs are navigating their changing community online and in meat space and how the issues faced by the community are framed by journalists in the media.

Figure 1: NFC Chip with US penny for scale. From www.cyberise.me

Figure 2: New RFID and NFC transponders in beta testing. From www.dangerousthings.com

Figure 3: Implanted Magnet lifting bottle cap. From www.cyberise.me

Figure 4: N52 Magnet in fluid for shipping. From www.cyberise.me

Figure 5: X-ray image of 2 magnet implants and 2 chip implants in left hand, and 1 “firefly” implant of Tritium in a leaded capsule in the right hand. From www.24hourengineer.com

Chapter One – Does Body + Technology = Cyborg?

I frame voluntary cyborgs by the relationship of the technology and the body — the technology is *placed* in the body, under the skin, for an enhancement, entertainment, or augmentative *purpose* and is done by individual choice or voluntary *prescription*. The 3 P's are my foundation for defining what a voluntary cyborg is and does. Anthropological studies of body modification have explored areas of modifying the body from an external and visible perspective, but less so the insertion of tech into the body for pleasure or enhancement. Studies of technology in the body tend to be framed by medical or therapeutic purposes and are therefore, not analogous to the purpose and prescription of voluntary implants.

My notion of the body and its relationship with society and identity stems from readings in anthropology, specifically the branch of anthropology expressed in the late twentieth century known as anthropology of the body. My research is grounded in the holistic and phenomenological approach of viewing the body, identity, and experience of the individual as interconnected parts of a larger social entity. The context and connection of technology and the body are vital in attempting to understand the role of voluntary cyborgs in our future.

Cyborg Identity and Performativity

Before I delve too deeply into current literature on cyborgs and body modification, it is necessary to define and contextualize the people and practices this project will be discussing and analysing. There are numerous terms used within the body modification communities and external to the communities by news media and websites devoted to various subsets of body modification. There is some agreement within the community regarding certain terms and also disagreement. There are also arguments as to whether or not labels and classification are any use

at all. In order to thoroughly discuss and explain the practices of the people I have termed voluntary cyborgs, I find it necessary to define the categorization process. I am in agreement with Hacking's article, "Making up People," regarding the occasional need to label people and/or their practices. "Social change creates new categories of people ... people spontaneously come to fit their categories" (1986, 151). Hacking, influenced by Foucault, came to this view of classifying people during his study of historical statistical documents wherein he found individuals were labelled in new ways to classify various types of deviance in police records. A person's individual behaviours may not have changed prior to this new classification, but society's need to categorize their behaviour did. Once the new classification came into being, people then knew the "correct" or "typical" way of behaving as one of those new identities. Consequently, people's behaviours altered to fit with the new classification of their identities.

The people Hacking uses to explain this phenomenon are the millhands in factories at the beginning of the industrial revolution; before factory inspectors came in to classify the work site, employees were loosely tasked with various responsibilities and chose their own methods of performing those tasks. After the factory inspectors had concluded their reports, millhands had specific job descriptions, which then resulted in specific job behaviours (1986, 151). Foucault describes the same type of behaviour modification with his historical discourse analysis of madness and the resulting change in how society handled those deemed mad or insane (1988). Classifying deviant types under group names is a hallmark of early criminologists and subculture theorists, which will be discussed in detail in the next chapter, but it is important to mention here as well. Classifying people, giving their behaviours and/or attitudes names and labels, assists people in knowing how they are supposed to perform their identities in their social worlds, both as classifier and classified.

People perform their socially constructed identities. Not only that, it has been argued for decades that nearly all aspects of human behaviour may be a performance influenced since birth by the hegemonic language and discourse of one's society. The performance of identity defined here comes from Judith Butler's theory of gender performativity combined with Hacking's and Foucault's theories of the labelling and classification of bodies. Butler diverges from previous theories that stated language is the only way in which identity is constructed or performed; she argues that social constructs show how individuals must behave and act in the performance of their identity, or face real and punitive social consequences (1988, 1990). For Butler, performative acts must be repeated individually and generationally in order to become entrenched in society. This repetition of acceptable performative norms dictates the social discourse of how certain identities get defined and how those individuals ought to behave in those identities. In the nearly three decades since the publication of *Gender Trouble*, the concept that identity is a performance, that attributes thought to be "natural" such as gender or the able-body, has been widened to include queer performativity (Sedgwick, 2003) and disability performativity (Garland-Thomson, 1997). But what about identities that are not yet entrenched in society? I argue that these attributes are translatable to cyborg performativity; however, with a significant challenge: practical and literal cyborg identities and acts have not been practised and rehearsed prior to now. They have been characterized and dramatized but not actualized, hence the contestation as to how one behaves or acts as a cyborg. They are floundering for the signifiers to perform their identity and define the repeatable acts or performances that enable them to cohesively articulate and inhabit their cyborg identities.

The repetition of social norms using discourse and language to propagate identity occurs in many social structures, not just society at large. Subcultures and community groups use specific language and signifiers to indicate belonging and exclusion as well as the correct

behaviour for members. One language technique to show belonging in a social group is the clear definition of labels of categorization for group members. I define these terms here based on my knowledge of the community and relevant literature and recognize they are no less performative than any other social construct of identification.

Body modification is the overall general term for all body modifications: tattoos, piercings, weight loss or gain, strength-training, plastic surgery, prosthetic use, etc. Within this broad category fall the smaller categories of types of modifications. There can be a great deal of overlap between modifiers, hackers, and cyborgs.

Bio-hacking is a term often used interchangeably with body hacking but is becoming more frequently affiliated with strictly biological applications such as CRISPR, gene-editing, DNA experimentation, and other biology lab hacks or modifications.

Body hacker is a person using technology to find short-cuts or “hacks” to improve their everyday life, but the short-cut does not involve embedding the technology. These people use wearables or smartphones as their technology. Examples of common body hacks are:

- Using a fitness tracker to track steps every day for health and fitness

- Using sleep tracking apps to monitor and improve sleep hygiene

- Using a calorie tracker to monitor food and macro intake for weight management

Body modifier is a person who changes their body in a cosmetic or therapeutic way. Permanent internal technology is not used as the modification. The following are various examples of modifying the body:

- Nootropic Users — some place this group into body hackers as they are trying to hack their body using drugs or other chemicals to improve physical or mental performance.

- Cosmetic surgery or cosmetic practices such as colouring hair, laser hair removal, tanning beds, etc.

- Pierced ears, tongues, and other body parts

- Tattoos

- Weightlifting and bodybuilding

Weight loss or weight gain to attain an aesthetic or athletic ideal

Cyborgs are people who change their bodies using embeddable technology. There are two specific types of cyborgs that should be differentiated:

- **Medical cyborgs** are people who treat medical needs with technology for therapeutic or rehabilitative reasons. Done by trained medical professionals and generally socially accepted as to return the body to “functional norms” or as preventative health measures. Prosthetic limbs, eyes, or other body parts, cochlear implants, pacemakers, insulin pumps, and more fall into this category. I also include implanted birth control devices such as intrauterine devices (IUDs) and the Nexplanon sub-dermal device in this category.
- **Voluntary cyborgs** are people who have embedded technology into their body to perform a function of some kind in a permanent way and have done so voluntarily and not because of medical need.² Voluntary cyborgs often begin with implantable chip tags or subdermal magnets.
 - **Grinders** are people who tend to use amateur or do-it-yourself (DIY) surgical means to implant their desired tech that they have often designed themselves or as a collective group. They are the DIY-cyberpunk subsection that I categorize within the voluntary cyborg label. Some voluntary cyborgs do self-identify as grinders, and it is necessary to define them as a specific subset.

The boundaries are quite fluid between voluntary and medical cyborgs. Regardless of the post-modern and post-subcultural fluidity of labels and boundaries, it is necessary to define as clearly as possible the parameters I have determined to form the boundary of what constitutes a voluntary cyborg. The 3 P’s mentioned above help define the boundaries between various body modifications, medical cyborgs, and voluntary cyborgs. *Placement* pertains to the boundary of the skin; internal or external. Many external augmentations are considered body modifications

² In this definition, voluntary refers to the free choice and autonomy to implant devices. Medical cyborgs are not to be considered in direct opposition to voluntary cyborgs in that they are “involuntary” or forced to receive an implant. Medical cyborgs can refuse treatment they are opposed to; they have agency.

but not cyborgian in nature. Examples are piercings, tattoos, or tongue bifurcation. *Purpose* refers to whether the technology or modification is for therapeutic or rehabilitative purposes or is for augmentation and enhancement, and it *must* be functional in some way. For instance, a pacemaker is functional but is for medical purposes while cosmetic surgery is considered voluntary and not functional besides potentially increasing one's social capital. *Prescription* is how I indicate the difference between a doctor prescribing an implant as a medical treatment or therapeutic benefit versus the free choice of an individual to implant a functional piece of technology for enhancement or augmentation. To be considered a voluntary cyborg, all 3 P's must be met.

Current literature on the research of metaphorical and modern-day cyborgs will wrap up this section. The bulk of recent cyborg literature tends towards ethnographical studies of practitioners of the body-implant movement, our voluntary cyborgs. Brief highlights of commonalities and differences in medical cyborg studies, feminist cyborg studies, disability studies, and trans studies will be included in this section. The existing cyborg literature pertaining to voluntary cyborg practices and its members does not address the formation of a defined subculture although the term is often used to describe the group. This gap in the current literature will be tackled by this project, and the boundaries of the voluntary cyborg community and its formation into a subculture will be explored.

Body Modification

"The body became a project..." – Linda F. Hogle (2005, 702)

The contemporary Western style of external, visible body modifications emerged from queer and kink groups on the West Coast of the United States in the 1970's and 1980's (Myers 1992, Pitts 1999). The extreme body modifications in this time period were piercings such as

earlobe stretching or genital piercings, scarring or branding of the skin, and tattoos. As body modification arose from non-mainstream groups, much of the early academic literature focused on the supposed deviant nature of the practitioners, which attributed a deviant aspect to the modification itself. Comparisons to self-mutilators (Pitts 2000) or viewing the modification practice as a pathology (Hicinbotham, Gonsalves, and Lester 2006, Myers 1992, Schramme 2008, Suchet 2009) are common in the literature although it is important to note that the practitioners do not view themselves in these ways.

For example, one group of body modifiers viewed their practices as rituals or as spiritual in manner. This group originated in California in the late 1970's and became known as "Modern Primitives" so named by the movement's creator, Fakir Musafar. This group has been researched by sociologists, anthropologists, and subcultural scholars in some detail (Atkinson and Young 2001, Featherstone 2000, Klesse 2000, Pitts 2003), and Klesse is clear in his criticism of the "Modern Primitive" label and practices.

One of the most significant characteristics of the Modern Primitives movement is their appropriation of 'primitive rituals'. In their search for radical corporal, psychic and spiritual experiences and their performance of sexual events and encounters, Modern Primitives seek inspiration by so called 'primitive societies' through the adoption of their communal rites and body modification techniques (Klesse 2000, 17).

The declaration of Modern Primitives as a community practising in a cohesive manner is overshadowed by the troublesome aspect of the colonial characteristics of the practices.

From an anthropological perspective, the ideology of Modern Primitives manifests problematic issues of colonialism, racism, and the appropriation of non-Western cultures. Practitioners view it as an appreciation and insight into alternative cultures and an inspiration for the creation of their own subculture (Atkinson and Young 2001, Vale and Juno 1989). The ritual and spiritual aspect of external body modification is outside the scope of this project; however,

the identification of a group of body modifiers into a movement or subculture is significant to understanding the transformation of voluntary cyborgs from a loose group of individuals into a more cohesive and formal subculture even though their practices may be considered shocking or deviant in some way.

Literature examining the Modern Primitives movement and the more recent and similar neo-primitive movement often highlights the marginalization and stigmatized bodies of adherents and the general social distaste for extreme body modification (Atkinson and Young 2001, Pitts 1999, 2003). Even among the scholars researching body modification, there is resistance to sharing their own experiences emphasizing the depth of the social stigma. Myers admitted to participating in one body modification practice involving fire and bailed out of piercing a participant at a second event during his ethnographic research (1992). Pitts-Taylor (2007) wrote of her own cosmetic surgery experience and the associated stigma; however, other scholars are more reticent about their participation in extreme body modification practices although some body modification practices are becoming more accepted in society.

The popularization and resurgence of tattoos in mainstream culture in the 1990's (Myers 1992, Pitts 2003, Roberts 2015,) led to greater social acceptance of low-visibility and aesthetically pleasing body art (Featherstone 1999, Pitts 2003, Roberts 2015). Face tattoos and other highly visible modifications are still often seen as deviant or weird (Adams 2009, Fisher 2002, Tiggemann and Hopkins 2011) and modified practitioners are viewed as unemployable due to this stigma (McElroy, Summers, and Moore 2014). Keeping body modifications invisible tends to give legitimacy and acceptance to the practice. If the body mod is characterized as a “personal” decoration or modification and not meant to be put on display, then less stigma appears to be attached to the practice and resultant transformation. Extreme and visible body customizations are still viewed as deviant and troubling. The body modifications studied from

the shock-value perspective or as deviant practices often focus on visible, external alterations and the social and cultural reasons that inspire them. There are, however, some acceptable forms of extreme body modifications done in the name of health or beauty.

Healthy, fit, attractive bodies are perceived as morally and socially good (Hogle 2005), and extreme modifications are often socially “allowed” for these purposes. Hogle (2005) inspired by Rose (2001) makes the accusation that after the public outcry against the eugenic and public health movements of the early twentieth century, a new, informal eugenics strategy morphed to shifting the burden of physical and mental transformation as a moral good and a system of personal empowerment onto individuals and away from social and government institutions. This shifting of responsibility of being healthy and fit and the associated moral goodness of beauty has created a culture of consumers always on the lookout for the next new thing to become beautiful, healthy, and if possible, even exceptional.

The common categories for the motivation of social beauty norms explain the more extreme modifications of cosmetic surgery or fanatical diet restrictions and punishing exercise regimes (Patterson and Schroeder 2010, Pitts-Taylor 2007). Society is often scolded by advertisers and mass media who show ways we are deficient from the culturally accepted standards of beauty or fitness, and so we must buy products and services to modify ourselves (Featherstone 2010, Sweetman 1999), creating a consumer culture of health and beauty. In our high-tech society of the twenty-first century, technological enhancements and augmentations are a new iteration of this consumer culture. We can purchase the technology to aid us in our desire to be new, better, exceptional humans. To become cyborgs.

Technology as an extension of the body

In the anthropological milieu, the use of technological artefacts is a common area of emphasis; however, the literature often focuses on technology and the body, not technology *in* the body. Nailing down the definition of artefacts as tools or machines in relation to the human body and the use of these technologies is a frequent theme (Black 2014, Jackson 2002, Selinger 2008). Technology studies in anthropology and sociology tend to view the machine as external to and as an extension of the body but in a general way, by using desktop computers, bicycles, and other devices requiring a human operator as examples (Balsamo 1995, Kline and Pinch 1996, Woolgar 1991). Tool use is a foundational study in anthropology going back to early hominid species, but modern-tool-use literature explores how humans use tools such as hammers or canes as extensions of the body (Black 2014, Bourdieu 1977, Clark 2003, De Preester 2011). Black argues that humans are not “natural tool users,” but our use of tools is so ingrained as to feel “natural.” This idea is based on Bourdieu’s concept of habitus, that the body creates and learns habits and movements that seem to become “instinctual” (1977) or comparable to Butler’s performativity theory of repeatable acts becoming “natural” (1990). Machines are defined as being an object of the user’s attention whereas a tool is an extension of the user’s body (Black 2014, 42). To clarify the distinction between tool or machine, Black argued humans incorporate tool technology into their body schema while machines are not incorporated.

The body schema is the unconscious operation of the autonomous body; it is a “system of sensory-motor functions that operate below the level of self-referential intentionality” (Gallagher 2005, 26). There is no sense of ownership, of “my” body is doing this action or “my” arm is reaching out to this object — that ownership or awareness is defined as body image (Gallagher 1986, 2005). Body schema is internalized and invisible while body image is external and visible or “felt” in some physical way. Integrating tool use into the body schema allows tools to take on

an identity as part of the unconscious body, the internalization of technology that exists outside of the conscious awareness. As defined by Black and clarified by Gallagher, machines are operated by parts of our body contained within our body image of ourselves while tools become a part of the unconscious body operations; full integration of technology into the body schema appears possible within this definition but is not discussed in the literature.

Smartphones have troubled this tool/machine division, and with the exception of Black's 2014 article, much of the well-known and oft-cited technology-and-the-body literature in anthropology predates the age of the smartphone and its ubiquitous intrusion into our lives and body schema. Smartphones are frequently carried on the body or kept in close proximity nearly 24 hours a day and have become an extension of our bodies. More recent anthropological literature of the use of technological artefacts such as the smartphone often focus on external aspects such as social media and the gaze of the smartphone camera (Berry 2017, boyd 2014, Ikuomola 2017) or the use of the smartphone as an addiction and point out the irony of being disconnected from the world by being so connected to the virtual or online world through our phones (Hale 2016, Lee 2015, Turkle 2017). Society's growing attachment and reliance on their smartphones is rarely discussed in the literature as a technological extension of the body that furthers the population's transformation into cyborgs.

Cyborgs and Gender - From Metaphor to Reality

The term cyborg has a bit of a convoluted meaning and history in academia. Since Donna Haraway first published her influential "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century" in the 1980's, academic discussions have used the metaphorical and figurative cyborg as a trope or token to discuss the technological influence on society while often disregarding or overlooking people who are actively enhancing

and augmenting their meat suits in their pursuit of becoming actual cyborgs. Earlier cyborg studies treat the cyborg as allegory or as a mere fictitious representation of the monstrous, the freakish, or as hybrid humans doomed to annihilate humanity as some sort of futuristic warrior (Haraway 1991, Gray 2002, Lykke 1996). These academic depictions are frequently trivializing or frustrating for those who are in the process of augmenting their bodies and may identify as actual cyborgs.

Hollywood and popular media representation of the cyborg is rarely different from those in academia. The mere mention of movie cyborgs conjures fictional characters such as Darth Vader, the Terminator, Robocop, or Tony Stark after he became Iron Man as representations of the hypermasculine cyborg soldier. The cinematic characters of Major Mira Killian in the American remake of *Ghost in the Shell*, Ava in *Ex-Machina*, or Seven of Nine from the *Star Trek* universe represent the sexualized woman of cyborg characterization. Feminine cyborgs are portrayed differently from masculine cyborgs in popular culture as the patriarchal biases of North American society are broadcast to the cinema screen and streamed into our living room.

Feminist cyborg scholars have written extensively discussing and analyzing feminist issues surrounding the merging of technology and the female body, the implications of such hybridization on society and culture, as well as how contemporary gender norms will be affected by the influx of technology be it reproductive issues or the invisibility of women in society (Balsamo 1996, Braidotti 2013, Haraway 1991, Hayles 1999). Jasbir Puar addresses issues of intersectionality and assemblage in relation to Haraway's last line of *A Cyborg Manifesto*: ". . . I would rather be a cyborg than a goddess" (1991) and decides that "cyborgian-goddesses," rare intersectional creatures, may already be among us (Puar 2013, 388). Haraway was prescient in the need to understand technology and the body through the lens of feminism in terms of the cyborg; however, just as Haraway has done herself, it is time to move on from the caricature of

the fictional cyborg as the mascot for society's angst regarding our technologically imbued present.

Current cyberfeminism, xenofeminism, and posthuman feminism issues of inequality, equal access to technology, and reproductive issues are important areas of discussion and study but are outside the scope and purpose of this thesis. It is, however, time to find a new metaphor to represent the liminal state of gendered, technological bodies struggling to balance their humanity with ever-increasing amounts of technology as real cyborgs are here and no longer spectres of the not-so-distant future. Hayles states it quite succinctly in her move towards examining the cognisphere and how data and knowledge are taking precedence in the twenty-first century, "...the cyborg is no longer the most compelling metaphor through which to understand our contemporary situation..." (2006 p. 165). It is time for a shift to real, not virtual, cyborgs.

Cyborg Artists

Several artists have provocatively showcased the relationship between technology and the body and pushed the boundaries of where the body ends and technology begins. For over thirty years, cyborg performance artists ORLAN and Stelarc have been using outsider and performance art events to showcase their concepts of morphological freedom; the ability to transform their bodies, or not transform them, regardless of society's expectations for the "normative" body. ORLAN explores the technobody with her meat suit as the canvas and declares her right to bodily integrity regardless of the modifications or procedures she chooses to have done or do to her body (orlan.eu 2019). Stelarc concentrates on illustrating how agency can be removed from the body and given to other people or objects to control. Stelarc refers to his physical form as "the body" when he discusses his performances as he is interested in conceiving of the body as an object and not a subject.

Both Stelarc and ORLAN are concerned with personal agency of their bodies and the power dynamics of body autonomy but from two opposing sides (Featherstone 2000, Goodall 1999, Jones and Sofia 2002, Pitts 2003). ORLAN shows how society controls what is acceptable for female bodies and as beauty norms by having surgeries on her face and body and televising the procedures to upend societal conventions of beauty. Stelarc's performances center on his body as the object merged with robots or other technological prosthesis controlled by other objects or people. Both Stelarc and ORLAN have repeatedly stated that they believe the body to be obsolete and their art is meant to illustrate that fact (Clarke 1999, Featherstone 2000, Goodall 1999, Scheer 2002, Stelarc n.d.).

The literature surrounding how ORLAN and Stelarc introduce technology to their bodies has variously described it as disturbing (Zurbrugg 1999), sacrificial and flayed (Clarke 1999), carnivalesque (Hirschhorn 1996), and uncomfortable (Zylinska 2002). ORLAN's various surgeries are quite intimate in showing her body beneath the skin envelope, and her performances are often positioned within a religious framework, as a form of blasphemy (Goodall 1999) or as a type of medieval martyrdom (Faber 2002, Jones and Sofia 2002). The focus often centers on the visceral, carnal, and autopsy-like aspects of her surgery performances (Clarke 1999, Govan 2005, ORLAN). There are, as well, aspects of female beauty norms that ORLAN attempts to problematize (Hirschhorn 1996, ORLAN) by illustrating the grotesque ways of altering the human body with technology through surgery.

In comparison to ORLAN's attempts to disrupt or manipulate concepts of feminine beauty, Stelarc's work is described as "exploring functional possibilities" of the body (Goodall 1999). Stelarc gives control of his physical form to others to operate and wield as they desire; sometimes manipulated by robotic machinery, other times operated by strangers through the internet (Stelarc n.d.). Stelarc's performances are often centered on the machinery that controls

his form without his input; in contrast are ORLAN's performances, where her body is the focal point as it is altered by the surgical technology that she has carefully planned. The literature surrounding the practices of the two artists has influenced how body modification performances, and by extension, some forms of body modification may be interpreted. The two variations of technology and the body fusing are characterized as bloody, gory, and painful or mechanical, powerful, and often beyond the control of the human's desires.

Medical Cyborgs

There are a lot of people walking around the planet with metal and technology implanted in their bodies, but not many of them necessarily identify as cyborgs. These people have implants for medical purposes, and consequently, I define them as medical cyborgs. The argument has been made that anyone who uses technology of any kind is a cyborg (Clark 2003, Gray 2002, Shah 2008). Contrary to that approach, I argue there are differences between someone who uses a pencil, someone who wears glasses, someone who has a pacemaker, and someone who has a chip embedded in their hand. Other researchers lump all human uses of technology together as cyborgian in nature (Cleland 2010, Jensen 2008) as a leftover and out-of-date naming convention influenced by a 1960 article arguing in favour of altering the human body for space flight instead of providing an altered environment to support human bodies (Clynes and Kline).

Medical cyborgs are real cyborgs (Quigley and Ayihongbe 2018); I do not argue against that terminology. I do contend however, that the majority of medical patients do not identify as cyborgs. The motivations and purpose of medical implants exclude these cyborgs from this project's limits and scope. I also consider transgender and gender-fluid individuals to be a subset of medical cyborgs as they modify their bodies internally, externally, intentionally, and often permanently in various ways. Some trans folks are also voluntary cyborgs; some are not. But

they are voluntary cyborgs when they implant technology for augmentation or enhancement purposes; gender reassignment is included in medical prescription for this project. Regardless of the difference between medical cyborgs and voluntary cyborgs, there are some similarities in meat space that are reflected in disability studies and trans studies literature.

Disability and trans studies have similar concerns regarding implants and body modification that preoccupy many voluntary cyborgs: body autonomy, bodily integrity, as well as affordable and timely access to technologies or modification experts. Both groups also seek acceptance and awareness from mainstream society to the issues each group faces (Hogle 2005). Members of all three of these groups, disabled, trans, and voluntary cyborgs, often identify as such whereas medical cyborgs may not consider their implants or technologies as part of their identity in the same way (Hogle 2005, Quigley and Ayihongbe 2018).

The “New” Cyborgs

Cyborg studies exist in the academic literature; however, little research pertaining to voluntary cyborgs specifically has been published. Kevin Warwick, an engineering professor in the UK, is one of the early pioneers of RFID implants, neural implants, and other cyborg modifications and has published numerous implant and cyborg articles. Warwick self-experiments and publishes based on his own implant experiences (2014). Other articles take on an ethical-studies framework but often still use his own experiences as case studies (2003, 2011, 2016). Reading Warwick’s work in succession makes it apparent that he writes several articles with small variations in theme based on the same case studies and issues for different publications. For the purpose of brevity here, his referenced articles were kept to a minimum, but still contain overlap.

Two ethnographic dissertations have been published in the last two years by recent doctoral graduates Mark Doerksen and Lauren Britton. Doerksen undertook an anthropological observation study of a sub-group of voluntary cyborgs, grinders, located mostly in the western United States (2018). Britton's work overlaps slightly with several participants from Doerksen's study, but Britton focuses more on a small group of voluntary cyborgs on the East Coast of the United States (2017). Britton centers her research on design practices and human/computer interaction studies while Doerksen takes an anthropological and science and technology studies approach of sensory studies focusing on magnet implants. Neither focuses on the growing community of implanters and the resulting power struggles of hierarchy building, but stay focused on their smaller, regional groups. It is important to highlight that various members of the two regional groups are well-known individuals in cyborg circles and are commonly interviewed by various news media outlets. These individuals are part of the internal hierarchy of the voluntary subculture formation, but this has not been explored in any detail in existing literature.

Cyborgs have also been studied by folklorist London Brickley within a transhumanist folklore frame that Brickley terms *bodylore+*, inspired by the Transhumanist movement known as *Humanity+*. Brickley's work uses one individual as the primary case study and the remainder of the analysis describes what implant devices are and how sensory augmentations are achieved (2019). Brazilian researcher Bárbara Nascimento Duarte has also written specifically on voluntary cyborgs but from a European-centric perspective and the two articles are fairly general in tone and scope, describing what the implants are from a technical specification — a very common occurrence in voluntary cyborg literature (Britton 2017, Doerksen 2018, Duarte 2013, 2014, Heffernan, Vetere, and Chang 2016A, 2016B, Warwick 2003, 2014, 2016). What is missing from the literature at the current moment is an analysis of the group as a collective

cohesion of members and their quest for legitimacy that, I argue, is in the process of becoming a fully formed subculture, as I will explore in the remainder of this project.

Doerksen's thesis is titled, "How to Make Sense: Sensory Modification in Grinder Subculture," but other than the single use in the title, the word subculture is never employed again in the entirety of the dissertation (2018). Duarte discusses the activist aspect of voluntary cyborgs that she terms "hacktivism;" however, her article only has interviews with three participants, revealing a dearth of data to extrapolate broader social trends of the community (2013). Australian PhD student Kayla Heffernan has also published several articles with other scholars, examining devices they have termed "insertables," what seems to be the Australian variation of implants. However, these articles spotlight the devices themselves and focus much less on the larger social structure of participants (Heffernan, Vetere, and Chang 2016A, 2016B). There is no known published literature analyzing the group's structure and efforts to appear as a legitimate community to potential new members or to mainstream society.

This literature review has established there are limited published works on voluntary cyborgs. Several authors have discussed voluntary cyborgs within their individual fields and with multiple terms and definitions of the practice of implanting devices into their bodies —grinders, hackers, modifiers, cyborgs; all are similar terms used to varying degrees in the literature, causing confusion and lack of cohesion in scholarly work as well as in the communities of practice.

This review of the literature pertaining to voluntary cyborgs, as well as being a voluntary cyborg myself and participating in various groups and events, has led me to question if a new subculture is beginning to form. Could a voluntary cyborg subculture help us understand how society might accept the merging of technology and the body for augmentation and enhancement purposes, or is it just a shock subculture that will simply fade away as another fad? How do we

define a voluntary cyborg subculture at all? To understand the formation of subcultures and, in fact, find a clear definition of the term, the next chapter will outline subculture theory as it pertains to this project.

Chapter Two – Boundaries and Tensions: Community Building Online

In this chapter, I will provide an overview of contemporary subculture studies with which I frame my analysis of the voluntary cyborg community. Subculture studies allow researchers to set the boundaries of social groups and discuss how potential members gain entry to the group and how others are excluded from membership. This chapter begins with a brief historical context of the development of subculture studies through to the post-modern turn towards reflexivity and inclusion of the subculture member's voices to represent their viewpoints. The chapter concludes with the questions I ask about the creation of a voluntary cyborg subculture and the associated online media coverage that will be analyzed and discussed in detail in Chapters Four and Five.

Subculture Studies

Subculture theory became an academic area of study in the early twentieth century when the Chicago School of sociologists and criminologists theorized that social and economic conditions were pushing young urban men into gangs or criminal activity (Cohen 1955, Thrasher 1927). The migration of families from rural to urban centers changed the social structure that had been familiar in the previous generations, and scholars and policy makers were at a loss to understand what was causing crime rates to rise and young men to participate in delinquent or deviant behaviours (Merton 1938). Deviancy was a common theme of early studies and has continued through to current subculture studies (Adams 2009, Becker 1963, Holt 2007). The term deviant has a negative connotation outside of criminology and youth studies, and I hesitate to use that term to describe small subcultures with offbeat practices.

The University of Birmingham's Center for Contemporary Cultural Studies (CCCS) rose to prominence in the 1970's under the Center's director, Stuart Hall. The oft-cited work on subcultures came out in that time; Dick Hebdige's *Subculture: the meaning of style* (1979). British class structure was the driving force in the CCCS scholars' understanding of subculture formation. Hebdige's work was influential and timely since it was an attempt to understand the class differences of Britain's contemporary punk subculture as it had exploded into the public's awareness just two years previously. Rejection of the middle-class values and the politicizing aspect of music or style influenced by the Marxist theories of the CCCS became the framework for subculture studies after this point. A common thread between earlier subcultural studies and the CCCS' work is the overwhelming assumption that conformity to the social norm is the goal of individuals, and circumstances such as rapid urbanization, peer pressure, or socio-economic inequality frustrate that desire and prevent subcultural members from being just like everyone else. Much of subculture studies at this time had a vital piece missing — actual contact or conversation with the people participating in the subcultures they were writing about to understand their motivation and enthusiasm for socially disruptive practices. The ethnographic piece of the subculture puzzle was introduced during the social science's post-modern turn of the 1980's and 1990's.

Subculture studies after the new millennia were no longer the metanarratives of authority of subcultures but became reflexive, ethnographic, and much more diffuse in their approaches to understanding the formation of groups (Moore 2004, 305). The appearance of in-depth studies of smaller groups began to appear along with changes to the labels of these groups: tribes and neo-tribes, collectives, scenes, social movements, and more (Bennett 2011, Moore 2004, Muggleton 2002). Many subcultural scholars embraced the post-modern turn and began to emphasize and study the subcultures they were a part of themselves to bring reflexive autoethnographies of their

communities (Atkinson and Young 2001, Hodkinson 2002). There were some arguments made that the smaller subcultures and other groups made subculture studies obsolete; however, some argue the opposite. Subcultures have not disappeared, contrary to what post-modern, post-subculturalists might argue (Blackman 2014, Roberts, 2015). Subculture theory is still relevant to show how groups form and what practices and activities these group members share that set them apart from mainstream society or how the coalescing values and beliefs of an identifiable group can be a disruption to the norms of mainstream society. The formation of social groups should continue to be analyzed by social science scholars as the internet and the globalization of communication practices transform social structures and alter how people discover others who share their interests and practices.

Online communication has led to a disruption in the previously accepted and understood methods of subcultural formation. Simon Lindgren, a digital culture researcher, amplifies Hebdige's concept of subcultures as noise or interference of the orderly mainstream society, and meshes this noise into a disruption of new digital spaces or disruptive spaces (2013). Lindgren goes on to assert that these disruptive digital spaces can become subcultures when "these disturbances have a certain coherence and perseverance . . . These are cultures within cultures, and they are constituted on the basis of providing some sort of critique of or alternative to the status quo" (2013, 21-22). The opportunity arises to meld Lindgren's disruptive spaces with another form of digital disruption: participatory cultures.

Participatory culture defines how people are beginning to actively create their own contributions to online media content and how this active participation changes online culture. Online communication is now typical for many subculture groups, and often subculture members will participate or be active in their preferred subculture activities online. According to Jenkins, et al., the five conditions for online activity to become a participatory culture are:

- a) low barriers for expression and engagement,
- b) support for the creation and sharing of those creations,
- c) some kind of mentorship, generally informal, to pass knowledge on to new members
- d) a belief that a member's contributions and creation matter to the larger group
- e) a sense of social connection with other members (2009, 3).

Subculture studies originally struggled to adapt to the use of online discussion groups and other forms of virtual communication as a valid method of community formation when internet use exploded in popularity in the late 1990's and early 2000's (Bell 2001). However, with the internet now firmly entrenched in the daily lives of many, online subcultural participation is a key feature of current subcultural and post-subcultural studies. David Muggleton listed the key differences between modern and post-modern subcultures in his *Inside Subculture: The Postmodern Meaning of Style* at the turn of the twenty-first century. I offer his list here to show the characteristics of the two variances.

<i>MODERN</i>	<i>POST-MODERN</i>
Group identity	Fragmented identity
Stylistic homogeneity	Stylistic heterogeneity
Strong boundary maintenance	Boundary maintenance weak
Subculture provides main identity	Multiple stylistic identities
High degree of commitment	Low degree of commitment
Membership perceived as permanent	Transient attachment expressed
Low rates of subcultural mobility	High rates of subcultural mobility
Stress on beliefs and values	Fascination with style and image
Political gesture of resistance	Apolitical sentiments

Anti-media sentiments	Positive attitude towards media
Self-perception as authentic	Celebration of the inauthentic

Table 1: Muggleton 2002, 52.

In addition to Muggleton, three key subculture theorists I utilize for my project are Paul Hodkinson’s study of Goth culture (2002), J. Patrick Williams and his work with straightedge subculture on the internet (2006), and Christopher Driver’s work on embodiment and hardcore music subcultures (2011). All three scholars focus on subcultures structured around musical preferences; however, their contribution to online subculture theory is fundamental to current subcultural studies. Williams explores the possibility of participating in a subculture strictly through online forums and determines there are at least two types of subcultural participation online: supplementary and primary. Subculture members who belong to local, in-person music scenes use the internet to *supplement* their participation while those who participate strictly online use the virtual community as their *primary* method of belonging to and identifying with the subculture (2006, 175, 180). Driver utilizes Sweetman’s *tourists* and *travellers* concept where tourists just ‘visit’ a subculture while travellers spend a great deal of time in a subculture (2011, 985). Muggleton (2000) and Hodkinson (2002) describe the same concept from Hebdige’s *part-timers* in the subculture scene. Logically, if there are part-timers, there must also be full-timers. All these terms describe the same concern — there are those who identify fully as members of their subculture in contrast to those who participate casually or peripherally to the overall subculture.

Group belonging is a key factor in defining subcultural members and identity — there are those who are in, and those who are out. Subcultural members want to know who amongst them are “real” participants versus those who are “posing” or performing an identity. This quest for authenticity often forms a hierarchy within the subculture between those who consider

themselves authentic and those they consider poseurs or casual participants (Driver 2011, Haenfler 2014, Williams 2006). This creation of boundaries of authenticity can be fluid as individual members have various ideas of what, exactly, represents authentic participation in the subculture. This fluidity of boundaries and participation is a contributing factor in the creation of hierarchical structures in the subculture; the group will eventually begin sorting out and defining what constitutes membership in the community. These membership strategies assist in the development of the shared identity aspect of subcultural definition. The base definition of subculture I am adapting for this project comes from Haenfler:

SUBCULTURE: *A relatively diffuse social network having shared identity, distinctive meanings around certain ideas, practices, objects, and a sense of marginalization from or resistance to a perceived ‘conventional’ society (2014, 16, emphasis in original).*

There are two key reasons I prefer this definition of subculture over many others. First is the omission of a visual style element as essential to the identification of subculture members. Haenfler does include a list of common elements that *may* be shared by subculture members, and music and style are listed as one of those elements; however, the definition given above does not rely on a musical or fashion stylistic element as a necessary characteristic. Style is often interpreted as a visual style of fashion, or auditory style of music in subculture studies (Hebdige 1979, Hodkinson 2002, Widdicombe and Wooffitt 1995). I find this visual aspect of subcultural style to be limiting, as does Williams. “But style is more than a visual representation, symbol, or icon — it is related to the ideologies as well as the practices of subcultural alternative youths” (Williams 2011, 14). In regard to subculture theory as it is defined by most scholars, the part that interests me the least is the focus on the visual aspects of subcultures. I prefer to discuss the overall aesthetic of voluntary cyborg subculture as there are not the exterior visual style signifiers

common to other shock subcultures like punk or goth style, and so their methods of communication must rely on other forms of mutual recognition to signify belonging.

The second reason for utilizing Haenfler's definition of subculture is the omission of age-specific membership requirements. Subcultural studies are often synonymous with youth subcultural studies; the assumption is that only young people are struggling with a sense of belonging when their beliefs and values don't conform to mainstream society's. People who participate in fringe hobbies or activities such as those practised by voluntary cyborgs are seeking other like-minded practitioners for a place to discuss common practices, for learning new production or implantation methods for chips and magnets, or as a way to further rebel from their current social and family groupings. The shock value of belonging to the voluntary cyborg subculture and identifying as a cyborg is an attractive concept to certain members while others find a therapeutic dimension to finding like-minded individuals and belonging to "your" community. Subculture theories are commonly designed to understand youth subcultures, and while there are many subcultures that are the territory of those under the age of 25, many in the voluntary cyborg community have grown up in other subcultures and carried on the tradition of finding their people as they age.

There are subculture members who are older than the youth demographic so popular with subculture theorists, and as they age, some begin to make a living in that subculture. Benjamin Woo's work on nerd subcultures describes these roles of subcultural intermediaries who are more established in the subculture. These "alpha nerds" behave as gatekeepers for new members while also influencing the circulation of cultural capital, economic commodities associated with the subculture, as well as the discourses about the group's adoption of new terms, practices, and behaviours (Woo 2012). Comic and gaming cultural intermediaries open comic stores; some tattoo aficionados become tattooists and open tattoo or piercing shops; other subculture members

move into industries associated with their interests in music or fashion (Haenfler 2014, Hodkinson 2016). “Cultural journeys” is the term Hodkinson (2016, 640) uses to describe those who start to make a living from their subcultural practices. These “grown-up” members begin to create and market products for new members, becoming the voices for the rituals of belonging in the hierarchy of long-time subculture members. The growth of the subculture cycle continues with new members learning the signs and language of the group from those who came before them.

Subculture theory will be the lens through which I analyze and discuss the research data to explore my questions of this project:

1. Is the voluntary cyborg community congruent with the description of a subculture?
 - a) Is it a relatively diffuse social network with a shared identity, distinctive meanings around certain ideas, practices, objects, and a sense of marginalization from or resistance to mainstream society?
 - b) How does the voluntary cyborg community enact and react to the elements of subculture formation?
2. How are the community and its practices framed in media articles aimed at mainstream society and how does this framing affect the community internally?

Archival data of cyborg communities is limited as there are very few websites that have early discussions of this fledgling community that are still accessible to be researched. However, there is one website that does have eight years of conversations from cyborgs and body hackers discussing various topics that will provide textual information to discuss in terms of the creation of a voluntary cyborg subculture.

Subculture theory elements of group identification, rituals of belonging including language use and hierarchy of members, and common practices of members will be subsections of the discussion chapters for this website analysis and the community of voluntary cyborgs associated with the forum. Subculture theory also explains how and why a group of people might consider themselves outsiders, rebels, or objectors to the mainstream. Subculture theory is suitable to show how the group's practices and values are significant as a form of resistance to mainstream society's values and practices. This resistance to the accepted practices of mainstream society will be discussed in Chapters Four and Five in the analysis of online news articles discussing voluntary cyborgs, their practices of body modification, group identification, and how they are making their cyborg identity palatable to those unfamiliar with voluntary cyborg practices.

Chapter Three – Finding, Filtering, and Framing Cyborg Communications

Overview

Subcultures form when a group of people with common interests come together virtually, in the real world, or both, to share ideas, practices, concerns, or to get to know each other.

Subculture members have a shared sense of identity regarding some aspect of their everyday life and want to “do” and discuss this shared aspect with others. Voluntary cyborgs are no different in a desire to communicate internally within the shared community or externally to the general public as a way to find their social group, to give legitimacy to their practices or to find potential new members. There are several websites, news sources, and real-life events that could have been chosen as the cultural sites for this thesis, but I have narrowed the sites down to an example of an internal communication site and an analysis of news articles about voluntary cyborgs and their practices to establish examples of how journalists frame the voluntary cyborg subculture.

Internal community sites are locations where voluntary cyborgs communicate with each other, often about the voluntary cyborg subculture. Non-cyborgs are welcome as well, but the focus is on people who have or will soon have implants, or some other modification, done. These sites have been chosen to illustrate how the nascent cyborg subculture is forming, how potential members are welcomed, what formal or informal barriers there are for joining the subculture or to implants being understood as a credible practice to mainstream society. The research sites also show how the community is becoming more hierarchical with the representation of its members and the performance of the voluntary cyborg practices, within the group and to the world at large, through the media.

Cyborg on the Inside: Subculture Research as a Subculture Member

I identify as a voluntary cyborg and have been interested in the practices and behaviours of like-minded individuals for several years. As I became more immersed in my hobby of tech and the body and in understanding how our sense of identity might be altered as we literally integrate technology into our bodies, I began searching the internet to find others who were interested in the same things. I wanted to find my people. And I was so surprised to actually find them! There were more than I had thought; there were enough of us out there to have real-life meetups and conferences. I attended my first body hacking conference in early 2017 in Texas where I got to meet people who were implanting computer chips in their hands or magnets in their fingers, and listen to panels of academics, lawyers, and people working with or creating various implants and other body mods. I didn't have any implants at that time, and I asked a lot of questions to anyone who would listen. I asked to touch their magnetized fingers and even moderated a round-table discussing how culture influences our bodies and our sense of identity. Through my networking with the other attendees of the conference, I found several websites with forums where other interested people were discussing the technology and types of body modifications that were happening on the ground. I came home with a fire lit inside me to understand other members of this community that I had found.

Biohack.me is one of the forums that I found after that conference, and I have lurked there for several years. I have minimally participated in discussions on other sites and slightly more on social media platforms, but Biohack.me was one where I just casually hung out and followed other people's discussions without taking part. It's a little bit different than the other forums and I have been keen to understand it for quite some time now. There are a couple of sites for voluntary cyborgs that are part of e-commerce shops for implants and other products run by the entrepreneur who sells and/or creates them, and the conversations are very specific to that

one company; consequently, these forums are for technical and purchasing conversations more so than general community discussions. These product-specific forums are moderated by only one or two people, resulting in a much narrower definition of what threads are approved or closed, and therefore limiting the candidness of off-topic threads. There are a number of closed member groups on Facebook that require your Facebook identity to join, and you must be approved by an administrator. The lack of anonymity and the restriction of group membership could result in conversations that are limited to the subjects of interest to the few members discussing it, or otherwise not as fully representative of voluntary cyborgs who can't find these closed and private groups, prefer to not have their identity disclosed to online strangers, or don't use Facebook at all. Biohack.me is a bit easier to find and much easier to join or follow anonymously.

There are numerous links to, and mention of, the Biohack.me website and forums from news articles and other internet sites. A quick Google search of the specific term "biohack.me" brought up over 7,000 results. Narrowing that search term to just "News" gave me 87 hits. Links to Biohack.me and some frequent forum usernames have been mentioned in articles from *The New York Times*, *The Guardian*, CNET, Cosmos Magazine, and The Conversation, as well as less known sites such as Digital Trends, Gizmodo, and The Verge. Academic publications also reference the site: *Trends in Biotechnology*, *The Design Journal*, and the *Journal for Law and Biosciences*. For people interested in technology and innovation, the website may be found relatively easily.

Biohack.me consists of an open discussion forum as well as a Wiki page that has lists of entries such as Modifications – Implantable Mods, Community Resource Library, and Community Directory. The forums are open to anyone who registers, and there are categorized threads of conversation themes that members can access to read archived discussions or see what is new since their last visit to the site. My experience with the forum as a researcher is in the style

Williams describes as an observant ethnographer (2006, 180) where there is no direct interaction with the forum members, only reading and analysing user posts in situ. Additionally, as I have been a member for a couple of years, I am also what Hodkinson terms a critical insider (2002, 6). I am a member of the group and I am familiar with the dominant discourses of the community. I can convey my status as an insider while also stepping back and studying user posts and language to question what practices and activities are significant in the forum.

An outside researcher would be required to spend a great deal of time becoming familiar with the practices and terminology of the group to provide an in-depth and accurate analysis while I have learned these insider details over the course of half a decade of identifying as a member of the community. I know the origin myths of the community, have met some of the pioneers of the movement, and have been present for some of the slightly notorious community events that have occurred over the last several years. Yet at the same time, I am not so much of an insider that I'm aware of the various backgrounds of many members or details of specific incidents of the forum creation, member relationships, and other inner-workings of the group prior to beginning my research. I am familiar with the mild "gore" aspects of the images and discussions shared on the site and am not easily shocked by common behaviours of members posting photos of their implant incisions. Voluntary cyborgs can be wary of newcomers and strangers to the group who do not have implants or someone to vouch for them, because some outsiders have some vehement objections to cyborg practices. I can also recognize when a user is posting queries or comments that are generally out of the norm with the declared shared values of the community. I do not analyze any of my own posts as I have never interacted online in this forum, but I am a semi-regular lurker and read the posts to keep up with the happenings within the group.

It must be stated, however, that due to the small size of the voluntary cyborg community and because I am a part of this community, I know a number of the users on the Biohack.me forum. Some users I have met in meat space; others I only know virtually through other forums or groups online. For those of us who are on the forum, when we meet in meat space, we often exchange our real-life names as well as our forum usernames. Some people keep their meat space names as their usernames. Others are inspired by their name or occupation, while others still are not easily associated with their legal identity at all. Because of this knowledge as a member of the community, I have opinions and thoughts on some members that may influence my research. I have made an honest attempt to look at the conversation threads critically and with an open mind to the possibility of changing my opinions about people in this group, both positively and negatively. I won't name names as this is not meant to be a diary of my feelings, but there is one member of the community who rubbed me the wrong way during a previous meat space meeting, and I had to reflect quite a bit about this irritation I felt when I figured out this user's online name. But I must admit that after reading their posts, I have gained respect for this person that I wouldn't have if I had not undertaken this research with an attempt at being open-minded. Also, again in the interest of full disclosure, there are a few people in the community who know I am writing my thesis on the voluntary cyborg community and that I am not posting on some of the forums until this process is completed.

A few community members have asked to read my thesis once it is complete and I have worked to not let the possibility of their reading what I write influence this process. I understand the risks of reflexive ethnography and the implications of published research on a small group that can be easily identified by its members.³ Other researchers have published work regarding

³ See Scheper-Hughes *Ire in Ireland* (2000) regarding her experience returning to the village twenty years after publishing *Saints, Scholars and Schizophrenics: Mental Illness in Rural Ireland* (1982); a detailed ethnography of

the body hacking community, and we can often identify each other and ourselves in those works. Indeed, since a number of voluntary cyborgs court publicity in order to raise awareness of what they are doing with technology and their bodies, they are easily recognizable to other less-active members of the community. Britton's thesis work is a fine example of this. While reading *Manifesting the Cyborg via Techno-Body Modification: From Human Computer Interaction to Integration*, I was absolutely staggered to find a reference to myself in her thesis. I have never met Britton and didn't know of her work prior to beginning my research for this project. I have since reached out to her online and made contact as a fellow academic in this burgeoning field. But there I was, a subject of conversation within the group she was embedded in. I had deduced who most of her informants were regardless of the pseudonyms used as the group has been covered by various media outlets over the years and because I had met most of them or heard of them as we are still a relatively small group of like-minded individuals. I know this potential for recognition is likely in my own thesis regardless of my attempts at pseudonyms for the forum users.

People choose usernames online that mean something to them. Online usernames may reflect aspects of their personality, their hobbies or work lives, their sense of humour, or a myriad of other meanings. Due to my personal knowledge of some of the users, I have used a random online generator to make up nonsense names that don't reveal my opinions of them, aspects of their character or personal lives, or even to inadvertently assign them a gender or ethnicity that they do not claim as their own and yet are still easy enough to read so as not to be distracting

rural Irish men who had been dominated and suppressed by their families and communities in order to stay on the family farms and help the parents in their old age. Scheper-Hughes had been a recent anthropology graduate at the time of her initial research and had not been aware of the reach of her work and the lengths some would go to in order to discover the village where her research took place. On a return visit to the village, Scheper-Hughes was ostracized and run out of town by the people she had considered close friends. There can be social and personal risks to academic research in small communities to which one belongs.

from the larger discussion points of what was written by those users. The two exceptions to this random username generator are the two founders of the website. I felt it useful to differentiate them from the other users in the discussion as they are no longer active on the forum but were integral to the creation of the community as it exists today. All other users will be referred to by the randomly generated pseudonyms in the Biohack.me discussion.

Biohack.me: The Discussion Forum

I chose the discussion forum on Biohack.me as a research site because of the unedited, open access to everyday voluntary cyborgs, their discussions about the practice of embedding technology in their bodies, and their conversations about membership and community practices. I consider the Biohack.me platform an internal communication method for voluntary cyborgs as the conversations are centered around various aspects of implants and not simply tech questions or comments about one particular company or implant type although there are many of those discussions as well. The forum has been around since 2011, and there are just over 2,300 conversation threads on various topics and themes dating from the inception of the site. Biohack.me is used for general conversation amongst insiders, for answering newbie questions posted by interested potential voluntary cyborgs, research requests from academics and media reporters, as well as event organization and planning.

The forum was also chosen for its unrestricted access to conversation threads posted by members discussing subjects of importance or interest to members of a growing subculture. Biohack.me enables me to see people's opinions or comments without the structural limitations of formal interviews or survey questions. However, I'm also limited to analyzing subjects and posts that have been instigated by the users and might not specifically address my research focus of subculture formation and structure. The sheer number of pages of data can be overwhelming

and required specific search terms to narrow down the number of posts to be discussed.

However, I consider this site to be where a great deal of community building occurs, and it is influential to the formation of the voluntary cyborg subculture. The site is by no means the perfect, singular location to identify the formation of a subculture but many on the site do identify as a voluntary cyborg or a wannabe cyborg. It is a site for identity declaration for a number of community members. The site should not be taken as the only location where community building occurs within the subculture; there are other forums associated with small cyborg businesses, podcasts, and other cyborg interests where the focus is on the product or podcast and not the community in general with an open membership list. The singular focus on this website does not imply that Biohack.me is more or less influential than those other sites within the community but this forum is one place to recognize the subculture and its members and how they negotiate their identities amongst themselves and to the wider community.

Membership is open access; anyone with an interest is able to sign up for free with no restrictions. The website meets the definitions of an online community by Williams: the site has its own norms, rules and netiquette, its own vocabulary, and “guidelines for posting that are acceptable to regular users, leaders, oldtimers, and a constant circulation of newcomers” (2006, 180). Usernames can be anonymous in nature with no relation to a person’s real-life persona while others use their real-life names. Some users have profile photo avatars, others use an image of their choosing, and some users keep the generic avatar assigned when they register. Some users converse so as to appear to know each other in real life while others are strangers to the other users. There are categories of threads listed to facilitate specific topic searches, and the search box enables users to search the entire forum for specific terms or users. As of April 22, 2019, there are 2,389 discussions on the site although very few of those are currently active. Announcements are always pinned to the top of the page, and the most popular category based

off conversation count is titled: *Coatings, transdermals, other implants* with 1,106 threads as of April 22, 2019.

The general community theme of discussions was of interest to my work on this project as I was looking for signifiers and terminology indicating that members consider themselves cyborgs as part of their identity and forming a subculture with fellow cyborgs. Due to variances in self-identification terminology, a contingent purposeful sampling method was appropriate for data collection (Hood, 2007). Contingent purposeful sampling meant I found a comment, thread, or user of interest and then following the links presented. I describe this process as going down the rabbit hole; it's difficult to know exactly when to stop, and tracking the steps taken to get to a final point can be problematic to clearly explain. I would go to a user's profile page, read a number of their comments, and the name of the thread they were commenting on. As my interest was piqued for whatever reason, I would click the links open into a new browser tab to read fully once I was done with the initial sweep of that user's page. There were times when I would have over 50 tabs open on my internet browser to read and follow comments and threads. Not all of these conversations were relevant or saved, but a large number were. The text collection ended when data saturation was reached; new data was no longer altering or changing the patterns that had emerged.

Search terms at the beginning of the data collection process were cyborgs, identity, and community and expanded from there to subjects covering ethics, academia, goals, users, and more. Individual posts were the unit of analysis, which then expanded to several user's comment history being explored to find themes of language use and discourse. The goal was to examine the words users chose to describe themselves and the group of individuals on the site and out in meat space. To prevent incorrect assumptions or interpretations of what a typo or error might

mean, all direct quotations from the forum have been copied verbatim to preserve the poster's comment structure and style. Additionally, to attempt to preserve anonymity, I have used the singular they as the common pronoun for users.

There is a small number of very active users on Biohack.me, and for a long time it was difficult to know how many active users there were, how often they commented, and other more quantifiable aspects of the site. An unannounced site update on March 18, 2019 changed that; various types of badges were implemented and attached to users of the forum. Users are assigned badges based on their history on the site — anniversary date of initial sign-up, number of posts, types of posts, etc. There are points associated with the badges that are not clearly defined, and there is a running list along the margin of the pages ranking users by points. Headed as “ALL TIME LEADERS,” it is a leaderboard of active members.

As a long-time lurker on the site (more than two years according to the new badge system), I was surprised by the badge and point system as there was no announcement until after the fact. Several questions immediately came to mind: why would this system have been implemented? What messages does it send to new users/long-time users? Why are there points associated with badges? How does this alter or confirm the existing hierarchy of the users? I analysed the implementation of badges from March 18 to June 15 in order to give intermittent users a chance to log on. Badges only update after a user logs on since the implementation. Analysis of the types of badges, number of holders of particular badges, the points system, and more are discussed as a form of “gamification” of the site and what this can tell outsiders about the users and the site in general.

Once threads of interest and importance were chosen, I used a screenshot extension on my internet browser to convert the pages to PDF files that I could save and print out to code and re-read. I was also able to quickly find the original threads online as necessary, as the printed

copies had the thread titles which are easily searchable on the forum. I also saved all screenshots to my laptop in a specific folder under various themes/subjects that became apparent after a close reading — badges, Braxxer, community creation, requirements of new members, and more. One folder I titled Gold Star Threads — as I was sorting new screenshots, there were some that touched on several subject themes and were not necessarily easy to place in an existing folder, but the subject matter grabbed my attention, and I knew it needed to be saved even if I couldn't, at first pass, see what was capturing my curiosity. The bulk of my analysis did ultimately focus on this folder and the topics in it. These threads became the basis of the themes I discuss in the analysis chapters.

The threads and pages listed above are examples of how the Biohack.me forum is working towards building a community and creating rules and behaviours acceptable to members of that community. In order to use data relevant to the current state of the group, the majority of posts analyzed are from 2015 to the present. References were made to the creation of the site in 2011, but the group and forum transformed in 2015 to its current incarnation, and so, conversations prior to that changeover are of limited use to understand the state of the subculture now.

Online Media Analysis: Framing Cyborgs

Online media articles contribute significantly to the public perception of topics that are newsworthy, important, or of general interest for many people and often serves as their introduction to new technology and innovation (Altheide 2000). News stories and articles also introduce the latest fads, lifestyle practices, or even subcultures to people unfamiliar with these cultural changes. Digital journalism has enabled stories of interest to smaller niche audiences about subcultures to potentially inform larger segments of the public given the availability and

access of online articles. The ability of news articles to reach potential new members is valuable to an emergent subculture, and several voluntary cyborgs have become popular subjects of such stories. The relationship between media sources and voluntary cyborgs is generally a reciprocal one. Online journalists want stories that are of broad interest or shock value if their earnings are driven by the number of views, or clicks, of the articles. These shocking or general-interest stories garner more attention, thereby increasing their earnings or reputation as journalists.

Voluntary cyborg ambassadors use media coverage to increase public awareness of the subculture, to bring in new members to augment the growth of the community, and ideally, to deliver a perception of legitimacy to their practices to outsiders. Reporters, bloggers, and documentary crews have interviewed voluntary cyborgs in the last decade to write or tell stories about cyborgs from various angles. There have been reporters who have attended cyborg events such as the BDYHAX convention in Texas; others have reached out to various cyborgs through online channels, one of those, the Biohack.me forum.

There are several voluntary cyborgs who are frequent subjects of the news articles, and in those, they are referred to by their real names, but they are also on Biohack.me with a username. Some articles use the forum username of the voluntary cyborg being interviewed instead of anonymous usernames, and there are voluntary cyborgs interviewed who might be on Biohack.me but have not necessarily revealed their real-life name in association with their username. In this section, I refer to all interview subjects by the name used in the article when possible and did not use their Biohack.me username in order to preserve the pseudonyms created in the analysis of the forum.

Method of Article Selection

I began my media search with minimal search terms to get a sampling of stories that were online. “Cyborgs,” “chip implants,” “magnet implants,” “biohack.me,” and “biohackers” were my first search terms. I later added the combination search of “grinders biohackers” as I wanted to differentiate my search from those who may have misspelled grindr for articles pertaining to the dating app. I used a Google news search for articles for this project as this is the tool available to members of the public. I wanted to emulate the search process of someone who heard of implants or voluntary cyborgs for the first time and turned to the internet to understand the community and its practices.

I limited my search to “news” articles using Google as the “all” search term produced over 3 million results for just the term “biohackers” and the time it would take to narrow down those results was beyond the limits of this project. I was also specifically looking for news sources, so the “news” field limited the results to those applicable to this research. Some articles showed up in multiple searches as the use of the terms describing the community, their practices, and the objects of those practices often overlap. These articles were among the first that were reviewed for inclusion. Because of my involvement in the voluntary cyborg community, I also had a number of news articles bookmarked on my computer. Some articles, I had already read because I know the people or events that were being reported while others had been sent to me by people who know of my interest in the voluntary cyborg community. All of these articles do show up in the search terms listed above as well.

In order to complete my research with academic integrity and balance, I also searched a news database, LexisNexis Academic, with the same search terms as on Google; however, I did not receive the same article results I obtained through a basic internet search unless I winnowed

the search terms down so narrowly as to find single, specific articles that I already had. The search term “cyborgs” brought up over 3000 results, most of which were about a UFC wrestler, and a large number of film and comic reviews. I attempted to narrow down the results using Boolean search terms to remove the extraneous news stories for my research purposes but was unable to access the same number of results as I was able to obtain through Google. My assumption was that it is uncommon for articles pertaining to voluntary cyborgs to make it into the print editions; the bulk of my articles are published by online media outlets such as *Wired*, *Boing Boing*, and *Motherboard*. The online media search produced similar results to literature searches for cyborgs: lots of mythology in movies and sports and very little on actual cyborgs. Google, by necessity, became my primary search site for articles.

After searching the various terms, I narrowed the results further by date. The bulk of the articles chosen for this analysis are from 2015 to June 2019 to correspond to the time period of the Biohack.me analysis. There are a few articles of interest published prior to 2015 that discuss topics relating to the creation of the voluntary cyborg community that were included for a historical perspective. This date restriction also enabled some comparison between what was occurring on the forum with what was happening in the online media coverage of members of the community or the community in general. A number of the articles provide links to earlier stories relating to the subject discussed in that article. I followed these links, and when applicable, included these stories in this project. However, the search results were still in the tens of thousands and needed to be further narrowed down. I excluded personal-blog-post sites as these are not considered news sources and tend to be opinion pieces. I also did not include aggregate news sites that did not have original coverage or information but simply regurgitated information from secondary sources such as press releases or other articles.

Article length was also a determining factor; I chose pieces that were over 500 words as anything shorter did not provide new information compared to the longer articles. I excluded articles primarily discussing biohackers and their biological body modifications. The confusion over the terms used to describe and name the voluntary cyborg community has transferred to the online media coverage of said community, and as a result, biohacker articles were often about people who use CRISPR technology and other DNA based science to alter their bodies. This subset of body hackers is outside the scope of this project, so only those news articles that allotted at least half of the article to voluntary cyborg practices were included.

The practices of voluntary cyborgs and, indeed, the existence of voluntary cyborgs, are not well-known to the general public, and as a result, a number of articles are simply technical information and specifications of the RFID and NFC chips and magnet implants. These articles were generally discounted as not being helpful if the article only consisted of definitions and no new discussion or framing of the discussion since they were all very similar articles. Several articles from well-known sources were chosen to demonstrate how these types of definition articles read. All the articles include a definition of the term used to describe voluntary cyborgs and/or their practices, which illustrates the newness of this subculture and how all online media sources must define what they are discussing to their readers as they are all assumed to be unaware of the subculture and their practices. In total, I printed over 100 articles with fifty-seven becoming the focus of my articles for analysis.

Method of Analysis

People use language to build or enact an identity, position themselves socially or in relationship to others, and to communicate their identities, position, and relationships to society. The Biohack.me forum and online news articles analyzed in this thesis use language as the

primary form of communicating these identities, positions, and areas of significance of a group of people to each other and the mainstream public. There are some images and videos that are attached to various conversations in both areas of research; however, the written word remains the key method of communication. As a result, I have chosen discourse analysis as my primary methodology to analyse and interpret these sites. Discourse analysis studies language-in-use to look at language and meaning in social interactions, and in this project, these social interactions take the form of written texts in the forum posts and media articles.

The discourse analysis theory and tools I use are inspired by James Paul Gee's third edition of his *An Introduction to Discourse Analysis: Theory and Method* and the associated *How to do Discourse Analysis: A Toolkit*. I find this approach helpful as Gee breaks down the elements of discourse analysis into seven areas to describe how we use language to enact meanings and to describe how individuals use utterances to say things, do things, and be things to the world: Significance, Practices or Activities, Identities, Relationships, Connections, Politics, and Sign Systems and Knowledge (2011a, 23-27).

Significance is the term Gee uses to describe the way language is used to make certain things significant, or not; what language is prioritized or highlighted or excluded in order to tell the reader what is important. Practices or activities are "a socially recognized and institutionally or culturally supported endeavour that involves sequencing or combining actions in certain specified ways" (Gee 2011a, 217). An example might be the practices and activities I use when giving a guest lecture to a classroom of students about voluntary cyborgs versus the practices and activities I would use having a cyborg conversation with friends over a beer. In a guest lecture, I would be dressed slightly more professionally than I generally am for a pub visit; the lecture often has slides that accompany it while I would use my smartphone to show images to my

friends; these are the practices and activities I use for people to understand the context and importance of my discussions and to enact my identity as a cyborg researcher.

Language is also used to show the relationship with the listener or reader that the speaker or writer wants to build. Language can be formal or informal, deferential or authoritative to build a relationship. We also use language to link certain things to other things to build connections, but we can also use language to disconnect as well; language can be used to show irrelevance as well as relevance. I could use specific language to connect Christian fundamentalism and the fear of altering the human form to show the relevance (or irrelevance) of those with similar opinions. Politics is the distribution of social goods; how a person phrases or frames their language about a subject or person has positive and negative implications for social goods such as blame, guilt, shame, acceptance, authority, legal responsibility and more. Finally, sign systems and knowledge pertain to the various languages (English, French), categories (language of academics, language of rap singers, Tumblr language), images, or phrasings we can employ to privilege (or disprivilege) certain types of knowledge over others (2011a, 24-27).

I used these seven tools in my discourse analysis approach to analyze the forum posts and article content of the research areas of Biohack.me and news articles described above. Gee describes his method of discourse analysis as both descriptive and critical (2011a, 15). Descriptive discourse analysts examine language use “to gain deep explanations of how language or the world works and why they work that way” (2011a, 16) in the context of the text. Conversely, critical discourse analysts attempt to understand language use in the larger social context and highlight the political implications of language. Critical discourse analysis often has an active application to the study of language use, and analysts may take a political or advocate position while descriptive analysis might be more passive and explanatory in comparison. Gee combines descriptive and critical discourse analysis in his approach as in his view, and I agree,

all language has a political aspect as a person can gain or lose social goods based on their understanding and compliance with the group's accepted norms and behaviours. The use of social goods as a characteristic of language in Gee's work is comparable with Bourdieu's social capital: relationships and networks that ascribe symbolic credentials and belonging to members in good standing of a social group or, in this case, subculture (Bourdieu 1986, 248). Language use is a way for people to gain, or lose, social goods or cultural capital. A voluntary cyborg who goes against the accepted norms of the community faces negative peer judgment or even ostracization from the group if the violation of the group norm is severe.

A second definition of critical discourse analysis is helpful for this comparison of discourse analysis approaches. "The interest is in how language is used to reinforce norms, legitimate existing social structures, subtly obscure or rationalize inequalities, play down problems and perpetuate an interpretation of society which supports some interests and obscures others" (Taylor 2013, 77). The language used on Biohack.me and in media articles reinforces social norms as well as creates new ones particular to this group. Journalist's and forum user's language choices are attempting to position and construct certain behaviours of the community.

Media analysis has a slightly different terminology for analysing the written word, but the concepts overlap with discourse analysis and will do so in this project as well. Media effects studies done by McCombs and Shaw about the United States 1968 presidential campaign media coverage evolved into the Chapel Hill study and their theory of agenda-setting (1972). This agenda-setting theory became associated with the concept of "framing" and is often summarized as the media doesn't just tell us *what* to think about, but *how* to think about it (Griffin 2012, 381-383). Framing is the language and context used to discuss various subjects to fulfill the agenda of a particular reporter, editor, or other authority figure associated with the media outlet. Robert

Entman lists four elements of framing to describe how carefully chosen aspects are made more prominent in the text being analysed.

Frames, then, *define* problems – determine what a causal agent is doing with what costs and benefits, usually measured in terms of common cultural values; *diagnose causes* – identify the forces creating the problem; *make moral judgments* – evaluate causal agents and their effects; and *suggest remedies* – offer and justify treatments for the problems and predict their likely effects. (Entman 1993, 52, emphasis in original)

Online journalists can use positive or negative terms to frame, or contextualize, subject matter for the reader; using descriptions such as humour, fear, or violence in a headline or the body of an article will frame the subject matter for the reader.

There are several criticisms of using discourse analysis and a media analysis in a research study. One criticism is the subjective interpretation required by the researcher not being provable. David Altheide responds to this critique stating, “like all research, it is interpretive, but it remains empirical, meaning that instances of certain meanings and emphases can be identified and held up for demonstration” (2000, 290). Framing has also been criticized for assuming the reader is passive or that all news article readers will respond the same way to the same terms. I disagree with these criticisms as both make similar broad assumptions about readers being active and critically thinking about all incoming news articles. While some readers will always be free-thinking outliers to the framing and agenda-setting susceptible masses, what must be included in the framing discussion is the element of repetition. The more often the same descriptors, or frames, are used to describe a situation, subject, or person the more likely readers will begin to be influenced by that language. This repetition harkens back to Butler’s performativity theory; we learn how to act or behave by the repetition of society’s signals and language.

Chapter Four discusses the four elements of a subculture and examines how the voluntary cyborg community is negotiating those elements: as a diffuse social network with a shared

identity with distinctive meanings around their ideas, practices, and objects and their sense of marginalization from the mainstream. These four elements are examined through an analysis of conversation threads on the Biohack.me forum. Sections of analysis include the origin of the website and the controversy surrounding the naming choices of early members, how the group determines the boundaries of belonging for new and existing members, the bureaucratic attempts at defining the various practices, the rules and values of the group, and how the group deals with their sense of marginalization from wider society.

Chapter Five examines the framing of the community in online media articles and how this media coverage affects the community internally. Journalists choose a variety of frames to discuss voluntary cyborg practices that are often superimposed onto the voluntary cyborg community as a whole. Various frames or positioning of cyborg practices are discussed in addition to how these frames are influencing the voluntary cyborg community. Outsider views of a small group can create tensions within the group as members deal with the judgement and reactions of the broader public. This chapter deals with the way the voluntary cyborg community interfaces with the media and mainstream culture in both positive and negative ways.

Chapter 4 – Shaking the Subculture Foundations

There are four elements that define a subculture as I use it in this project: a diffuse social network; shared identity; distinctive meanings around certain ideas, practices, or objects; and a sense of marginalization from, or resistance to, mainstream society (Haenfler 2014, 16). Each of these elements are addressed in some way by the voluntary cyborg community represented on the Biohack.me forum. This chapter will examine these foundational subculture elements and the way the voluntary cyborg community attempts to fulfill the essential characteristics. These tools of subculture studies assist researchers in understanding how people with common interests and practices negotiate the growth process into a distinct subculture.

First, I combine the elements of the social network and shared identity of the group and its members as the two elements are complimentary and interdependent. The diffuse aspect of the subculture is simple to establish as this community is global in its membership as a great deal of community building takes place on the online forum with members from a number of countries. There are some regional enclaves within certain areas of the United States but anyone with a computer and internet connectivity can join the forum; there are no geographical restrictions to prevent a virtual membership in the community. Once a group has begun to form a social network online, it also begins to form a shared identity. There are several discussions within this first section to explain the various ways the network is determining their shared identity. The creation of the Biohack.me forum will be discussed as well as member attempts to define the present-day community and the tension associated with determining who belongs in the group and who doesn't. Certain types of conversation are privileged by some members which can result in other members being excluded. There is a brief discussion of an event that occurs offline each year that is becoming part of the new shared identity of the community: Grindfest. The final subsection of

the shared identity element discusses the recent update to the forum that has altered the look of the virtual community space. Part of the site update was the implementation of a badges and point system. This site-wide rollout of a way for members to “game” the forum to earn badges and points is examined in detail in the gamification section.

The second distinct element to be discussed is the distinctive meanings around ideas, practices, and objects within the voluntary cyborg community. There are some firm positions in the community about who should be allowed to participate in the implant practices and more extreme forms of cyborg modifications. Emphatic language is used to discourage young members from attempting to implant themselves with technology and other, more hard-lined members discourage anyone under the age of eighteen from having professionals implant their devices as well. Typically, subcultural practices are designed for young members to get involved and find their identity but conversely, the voluntary cyborg subculture turns that assumption around and insistently attempts to deny membership to these minors. A positive practice from a member in any subculture results in the accumulation of social benefits, or subcultural capital, and the voluntary cyborg community has several types of cyborg cultural capital that will be discussed. Finally, this second section of the chapter wraps up with an in-depth examination of one user who has emerged as the steward, or guiding force, of the contemporary voluntary cyborg community. This steward uses various strategies to position the values and behaviours of the group in alignment with their own.

The third, and final, element that defines a subculture is the sense of marginalization of member’s behaviours and practices. However, the voluntary cyborg community is a rare exception in subculture studies. It is the intention of some of the very vocal and well-known members to overcome outsider resistance to implants and to ultimately have cyborg practices *become* mainstream. There is a kind of proselytizing that occurs in this subculture to outsiders as a part of

that effort for cyborg implants to become not just accepted but normalized. This desire for widespread adoption can result in tension within the group and interestingly, resistance from the mainstream. The different and unusual view of some subculture members' desires to become the mainstream would remove any existing marginalization of the overall group.

The Origin Myth of the Biohack.me Forum

To understand the current state of the Biohack.me forum, it is appropriate to start with the inspiration for the website. In 2010 a person in the U.K. began writing on their blog describing body modifications they were doing at their kitchen table. The blog, Sapiens Anonym, is (still) written by Lepht Anonym, one of the pioneers of the DIY body hacking movement. Lepht began writing about their DIY body hacks in explicit detail using colourful language and sometimes included video and pictures of their procedures. Lepht's blog began in 2007 but their fascination with body modification, or transhumanism in Lepht's preferred usage of the term, had expanded dramatically by 2010. Lepht's blog started gaining public attention after their presentation at a long-running hacker event in Berlin. The Chaos Computer Club (ccc) has been hosting an annual conference for over thirty years in Europe and for the year 27 conference in 2010, 27c3, Lepht gave a now infamous (in cyborg circles) presentation, "Cybernetics for the Masses" discussing their self-surgery experiments.

Lepht is a colourful and appropriately outspoken and outrageous individual to be the inspiration of the voluntary cyborg subculture origin myth. Lepht became legendary for interviews extolling their self-surgery attempts and the risky hacks they employed to get the objects implanted. The holy trinity of objects prized as part of the Lepht origin legend consists of vegetable peelers, vodka, and hot-gun glue. In the beginning, Lepht attempted to sterilize the scalpels and vegetable peeler in vodka to be used in their surgical attempts. Lepht also coated

magnets and other objects in hot-gun glue in a home-grown attempt at bio-proofing the toxic metal to make it safer and less toxic once implanted. There are videos of Lepht screaming and passing out from pain during the surgeries; in interviews Lepht has been quoted declaring, “Bodily health takes a big fuck-off second seat to curiosity” (Borland 2010). Lepht has stated that their goal is to use these “primitive results” to make implanting safer for those who come after (Wakefield 2018). And many people followed after Lepht.

Traffic to Lepht’s blog apparently began to increase dramatically and a number of followers were using the comment section to discuss various methods and attempts for self-surgery amongst themselves and with Lepht. The comment section structure makes it difficult to follow a group conversation easily and from what I can extrapolate from the comment section discussion, Lepht’s posts, and old Biohack.me posts, the idea arose in late 2010 for a separate discussion forum to be created. Two were created: Selfmodifier.org which is no longer active, and Biohack.me. Lepht posted about the creation of these forums on April 16, 2011 and provided links. One of Lepht’s posts from 2011 indicated they were receiving hundreds of emails from readers, so the audience appears to have been large enough to support the formation of a discussion-based forum. Lepht’s blog is still live and has a permanent link to Biohack.me in the sidebar of the homepage. Lepht recently travelled to the United States to share meat space with the voluntary cyborg community for the first time and seemed mystified by the excitement their appearance to the faithful caused.

What’s in a Name? Building identity as a community

Biohack.me was founded and run by just two people in the beginning, FounderOne and FounderTwo. In the words of one of the founders they “started biohack.me because grinding, as a movement, stood independently from the DIYbio, biopunk, and immortalist communities”

(FounderOne, 2011c). FounderOne acknowledged that there were other communities with similar DIY and technological ideologies to the group they named as grinders, but that the members of Biohack.me shared a different identity and practices from these other communities. This separation of grinders from other movements is an attempt at positioning the group. Positioning in discourse analysis is “the process through which speakers adopt, resist, and offer “subject positions” that are made available in “master narratives” or “discourses” (Benwell and Stokoe, 2006, 139). The master narrative here is that grinders are diverse; grinders do things differently from other associated groups and, as a consequence of this diversity, grinders require their own community or subculture that is separate from other body hackers.

This insistence on difference from other hackers, including biohackers, is a key requirement to be considered a subculture, yet it also makes the website name confusing. I cannot find a specific reference from either of the founders as to why they chose this specific name for the website. However, in response to FounderOne’s comment above, one of the very early members posted a comment stating the key difference that set them apart from other biohackers of the time:

...while grinders share much in common with DIYbio, they also are very different, in that they are willing to extend the hacker ethic to their own bodies.

That's actually the reason **I initially objected to the name "biohack.me."** I don't mind it, but I still think it would be better if we made it more obvious that we're different from your average biohacker. This wouldn't be a problem if the people in the DIYbio groups realised that we're about networks rather than hierarchy, but, since they don't (well, they do to some extent), we do have a responsibility to demonstrate that we're more than just your average, everyday biohacker.⁴ (Crogs, 2011, emphasis added)

⁴ All quotes are copied verbatim from the Biohack.me forum and include all spelling errors, typos, slang, curse words, and other idiosyncratic language choices of the user who is quoted. Comments in square brackets [] are my additional comments if clarification is required. Bold font is my emphasis added to highlight significant passages or words.

I can appreciate the naming quandary Crogs was attempting to describe. A great deal of conversation occurs on the forum regarding exactly who belongs to this community in part because of the confusion regarding the name and practices of the group and why this group is not a part of the DIYbio, or biohacker, community. There is still, eight years later, discussion amongst members of the community as to whether they identify as bio hackers, body hackers, grinders, cyborgs, or some other term. Confusion over proper nomenclature of the group returns the discussion to Hacking's argument relating to the cataloguing of people in order to define, or 'make up', their behaviour into an acceptable performance of their identity (1986).

The same confusion about identification happens in online media articles. Names given to label the group vary between cyborgs, hackers, and grinders with the inevitable parenthetical definition to differentiate it from the dating app name (Cohen 2016, Matthews 2015, Ungerleider 2012). This attempt at independence from other forms of body modification and other transhumanist communities has continued to today with varying degrees of success. Some users have chafed at the restrictions of the grinder term used to differentiate them have placed upon them and their practices. "Personally, to me, grinder doesn't mean anything I can't stand the term Ik [I know] where it comes from but because of the app it turns so many anyway [away] at the very name and it requires too much explanation" (Glivver 2018). Regardless of naming or classification troubles, people who are interested in using technology to internally modify their bodies are consistently joining forums like Biohack.me.

The Biohack.me home page is quite sparse; it's just a black page with white font and six clickable links underlined here for clarity (See Figure 6).

Biohack.me - "Virtual home of grinders everywhere."

Forum - "A place to talk about grinder issues, ask questions, and get answers [sic]"

Wiki - "Contribute to our growing body of knowledge and make the community better, stronger, and more intelligent, so that we can make people... better, stronger, and more intelligent"

Slack – a link to request access to the Slack channel, a new collaboration tool with a free version that used by this group

IRC channel – not a clickable link but a dead freenode.net web address

Code of Conduct

Privacy policy

Patreon account for donations. Patreon is a new crowd-funding tool primarily used by content creators to solicit funding from subscribers.

Figure 6: Landing Page of Biohack.me

The links take the user to the associated page on the Biohack.me site. The home page also has an icon at the top of the page that is associated with the Biohack.me forum. This icon creation and design was discussed at length in a forum post beginning in January 2011 and finally closing in August of 2012 with six pages of comments from the community. Members found it difficult to agree on designs as there were conflicting ideas on how to meaningfully capture the scope of the group; each user identified with different features of the community and how to go about improving their bodies, hacking their physical form, and how the group was defined as a cohesive whole. The arguments for and against various symbols and designs contribute to understanding how the group was grappling to view itself differently from other groups that modified the human body.

One founder of the forum wanted to adopt a symbol for the site that would be simple, in the public domain, and easily identifiable. FounderOne wanted to associate an image with the site and the “movement” to illustrate its separation from other biohackers/body hackers. FounderOne posted several responses to users during the design process explaining their motivation to visually represent the new subculture:

A symbol raises awareness and promotes solidarity. We have a presence on the Internet: forum, github, Facebook page. It would be convenient and to the benefit of biohack.me and **grinder subculture** to adopt a visually obvious symbol.

I have reservations as to whether we should be associating ourselves with healing and the medical profession. We risk backlash from the medical community and presently we're not in the business of healing, we're improving [in response to a design incorporating the caduceus, commonly used in the US to represent the medical profession].

What this [a user design not included here] suggests is pitch perfect for **the movement. It suggests a view of the body as a machine and like all machines, to be iterated upon.** Powerful and direct. (FounderOne 2011a, emphasis added)

After a lot of back and forth discussion and various designs suggested by users, the current logo was chosen and has remained for the past eight years. The first logo that the founder wanted to replace was a copyrighted image from the Warren Ellis biopunk comics, Doktor Sleepless, from which the term grinder was adopted by the body modification community. Grinder is the term used to describe the extremely body-modded characters in the comics. As there is a lot of investment and history using grinder as the name for the Biohack.me community members, a brief discussion of the comic may clarify a few of the ideas that inspired early members.

One of the founders of a well-known collective of voluntary cyborgs based in Pittsburgh had this to say in an interview about the origin of the name: "There's this saying in 'Doktor Sleepless' — 'Where's my jet pack?'" says Lucas Dimoveo... "It's essentially like, 'Where's the future that I was expecting?' There's no flying cars, there's no cyborg bombs or lasers, so I guess

we'll have to build it ourselves" (Firger, 2013). This phrase, "Where's my jet pack?" crops up a few times in interviews and on the forums; it is a signifier of the in-group. The phrase comes from this passage where the mad-scientist protagonist states the goals of grinders in a radio broadcast.

Everywhere I go, I hear the same thing: Where's my fucking jet pack?
Where's my flying car? . . . Where's the future you were promised? . . .
The future sneaks up on us . . . You're science fictional creatures. Each
and every one of you. **You know what you are? You're Grinders.**
While you wait for the real future you think you're owed, **you fuck
around with your bodies** like they were virtual-world avatars. **You add
things to them. You make them better.** You treat them like
characters to be improved and you grind them. There's no future coming.
No-one thinks they owe you shit. You're waiting for a day that'll never
fucking dawn . . . Grinding. Becoming someone else.
(www.writeups.org 2019, emphasis added)

This speech was one part of the incentive for the creation of a movement of like-minded people to come together and discuss their shared identity in their virtual community. Three themes still reverberate through the community today: the desire to create their own future, the hacking (literally and figuratively) of their bodies to make them better by adding things, and if they don't do it, no one else will.

The Doktor Sleepless comic series premiered in 2007 so the grinder term on Biohack.me does predate the 2009 launch of the Grindr app for social networking and dating designed for gay, bi, trans, and queer people (grindr.com, 2019). Since the release of the Grindr app, there has been confusion and amusement at the use of grinder in the body modification world as it seems much more commonly associated with the app. However, there are a number of long-time body modifiers who are attached the term grinder and appear reluctant to let it go. There will be times in this project where I will use grinder interchangeably with voluntary cyborg as it pertains to forum discussions. Voluntary cyborg, as I have defined it, includes members of the Biohack.me forum that do not necessarily identify as grinders plus other people who voluntarily implant technology, and I consider it more inclusive of the larger community. The term cyborg is attention-grabbing

and expresses the diverse forms of identity and performativity of practitioners to those outside the community more effectively than the term grinder.

Regardless of what the name is, a clear, definitive, and inclusive group name is needed for a community to make their identity and membership in a subculture clear to those outside the group. Despite the desire for an all-encompassing term to describe the voluntary cyborg subculture, smaller sub-groups can exist simultaneously within the larger subculture. Similar to Punk, Goth, or Straight Edge subcultures, insiders filter members into narrower classifications based on certain subculture practices or preferences. For example, in the Goth subculture a practitioner may identify as a Romantic Goth, Rivethead, Vampire Goth, or Trad Goth based on their preferences in music, clothing, or other activities and practices (Hodkinson 2002). It is the same in the voluntary cyborg subculture; one may be a grinder who is focused on the action of cyborgism, of creating or modifying the tech or science for implants or one may also be a body or bio hacker as they utilize various technologies to “hack” their body such as meditation, exercise, nootropics or DNA alterations through CRISPR technology. Belonging to a subculture does not prevent members from individualizing their activities and practices according to their own preferences and proclivities however much mainstream society or even long-term subculture members may resist that idea. There are going to be commonalities amongst subculture members but there are also going to be differences; this is a subcultural trait. The existence of these differences within the voluntary cyborg community corroborates Muggleton’s list of postmodern subculture characteristics, specifically the existence of “multiple stylistic identities” as well as fluid group boundaries (2002, 52).

The group’s attempts to define and demarcate the boundaries of who belongs, who doesn’t, and what practices are a part of the group’s identity as a social network, are legible when viewed through the lens of subculture studies. This tension over naming conventions may simply be the

work of members to clarify the rituals of belonging for smaller groups of cyborg practitioners. Members move freely through symbolic boundaries of the subculture as a result of the expansion of interests brought to the community from new and existing members. The connections, networks, and boundaries between members are not rigid but fluid; however, the signs, signals, and language of significance of the larger community should be more concrete to communicate identity and connection.

One of the earliest areas of tension in the group that continues through to the present incarnation of the forum is who, exactly, the forum is for. The two founders wanted to restrict the forum to grinders and grinder-specific conversation which is counter to a post from FounderOne where they stated the goal was to create a diverse discussion group to prevent the site from becoming an “elitist soapbox” (2011b). In an attempt to designate the characteristics of the community, the website landing page has a link to the Wiki section with a brief *Who We Are* statement:

The mission of biohack.me is to promote talk in the self-biohacker community.

Grinders are passionate individuals who **believe the tools and knowledge of science belong to everyone.**

Grinders practice functional (sometimes extreme) body modification in an effort **to improve the human condition.** We hack ourselves with electronic hardware to extend and improve human capacities.

Grinders believe in action, our bodies the experiment. (Wiki, Accessed June 18, 2019, emphasis added)

I consider the final sentence of the *Who We Are* statement to be fundamental in understanding the grinder ethos and what often causes difference within the community. “Grinders believe in action” is one of the integral signals of social identity for this group and the conversations and beliefs pertaining to action is one of the primary elements of the voluntary cyborg discourse. If new members are just going to talk (or type) without active participation, without the *doing* of the

voluntary cyborg practices of implants, or without the willingness to test new tech or to try new things to push the technology forward, then one is not really a member of this subculture.

In 2016 there were several conversation threads that questioned the number of members active on the website. There were two numbers bandied about; one an estimate of active users from an administrator who figured there were likely 1500-2000 active users but that only about 10% of those users commented and interacted periodically resulting in just 15-20 really active users. This estimate corresponds with online participation figures from Nielsen's website analytics, the 90-9-1 rule of participation inequality (2006). The rule states that "In most online communities, 90% of users are lurkers who never contribute, 9% of users contribute a little, and 1% of users account for almost all the action" (Nielsen, 2006). The low participatory rates of members can produce a forum that becomes an echo-chamber of approved opinions of the vocal minority while shutting out new ideas or excluding potential members from joining the conversation or the group.

The second number given for forum members comes from a discussion regarding a breach of the Biohack.me server that resulted in usernames, email addresses, hashed passwords, and private messages of users being compromised. The website Have I Been Pwned dated the data breach to December 2, 2016, and 3,402 accounts were listed on the server at that time. The data breach included all members who had signed up to the website since 2011 and many were no longer active five years later. Users have come and gone; even the originators of the forum have not been active since 2015 for FounderOne and 2012 for FounderTwo with the exception of several posts in 2015 when FounderTwo handed over control of the website to the current admins.

These population estimates indicate that very few people have a very large presence and influence on the forum and this imbalance skews the information available to other users. The administrator who gave the 1500-2000 estimate compared the Biohack.me forum to a fungus.

“Think of it like a mushroom. The biohack board is just like the really visible part to you and me, but underneath is a vast quiet network. That's how things grow” (Shtragger, 2016a). Although this statement may invite comparisons to Deleuze and Guattari’s rhizomatic theory of non-linearity and assemblages that can survive rupture (2005), the description of Biohack.me as a ‘vast quiet network’ seems more like the hive mind of online groups where new information or opinions are viewed negatively while accepted values and opinions are highly publicized or viewed positively within the group. The limited number of very active users is not necessarily representative of the opinions of the larger group.

Theories such as the ‘wisdom of the crowds’, or crowd-sourcing, have been put forth by economic researcher James Surowiecki, (2005) where groups of people can collectively be more intelligent than individuals; however, smaller groups such as the grinders and voluntary cyborgs active on Biohack.me are not necessarily diverse enough in thought and opinions so members run the risk of becoming ostracized for voicing the “wrong” opinion. The Biohack.me forum can risk becoming a closed system of similar comments and opinions where new or contrary views can be rapidly shot down and dismissed. If the new comments are dangerous experiments in self-surgery, blatantly illegal practices, or statements aimed to harass others, then those should probably be flagged as inappropriate and closed by the moderators, yet some are not. One post caused some internal tension due to the dangerous practices being entertained concerning the theme of violence and war for Grindfest 3 in 2016: “Paintball War Discussion.”

For the last several years an event has been held at the home of one of the significant users of the forum, Braxxer. The event is called Grindfest and it occurs over the course of a weekend at Braxxer’s home in California. Members of the subculture who are willing and able to travel to a remote community several hours north of Los Angeles have an open invitation to attend. On one of the evenings it has become a Grindfest tradition to have an electrified knife fight open to

anyone willing to enter the contest. The original discussion thread was intended to discuss details of the entire Grindfest event but quickly derailed. The commenters ran riot and indulged in conversations regarding the possibility of using mace, but not ball bearings, instead of paintball pellets, of bringing in water cannons, using weaponized strobe lights and dazzlers (which the poster admitted are banned by the UN), etc. It became a multi-page thread with each commenter upping the ante of dangerous weapons to use in a paintball war at night in the desert. Most long-time users were aware of the joking or satirical nature of the conversation, but some users were not and interpreted the conversation differently. One user went into detail describing the dangers and pitfalls of hosting such an unrestrained event and offered a long list of suggestions to make it safer and more welcoming to others. When one well-known and frequent poster, Shtragger, called out the thread commenters for violating the norms of the forum, they were shot down pretty hard by Braxxer.

If we are going to hold people to not talking nonsense in other areas, then we do it regularly. Someone says fungal supercomputer human hybrid and everyone is up in arms. Someone says torture and warfare and everyone just... joins in on the party? **The problem isn't the theme, it's how easily everyone accepted it.** I mean, I'm a huge fan of plague events, like any normal guy...

Tag it as satire or get everyone on board. But since this [a reference to 3-Quinuclidinyl benzilate; an odorless gas used as a militarized incapacitating agent] was mentioned on Slack, let's just make sure everyone is on the same page, k? Not all of us were at the party. Remember that the net makes communication... complex. (Shtragger 2016b, emphasis added)

Shtragger. As you know, **you aren't involved in this. You aren't invited and your opinions regarding this are irrelevant.** You have no say in its planning. **So leave it be . . . It's meant to be fun and increase collaboration across the community. Of course people get excited and joke around** but do you really think people are intending to shoot each other with marbles and shit? Or that it's going to be so loosely planned that this would be allowed? Much less that someone is going to manufacture some gas banned by Geneva to gas their friends? C'mon. It's obvious people are just looking to criticize here.

It's the same with the torture thing. This isn't condoning torture. While I'm sure some people are going to take it pretty far.. **it's an exploration of the subject** and a number of **people are already discussing presentations regarding solutions to the causes of wars, violence, etc.** and suggestions regarding projects the community could take part in. (Braxxer 2016a, emphasis added)

At this point in time, 2016, Shtragger and Braxxer had gone from being co-workers and friends in their shared grinder experiments to no longer being on friendly terms. However, Shtragger's point was picked up by several other commenters who echoed the statement that the discussion as a joke was not apparent to them. Braxxer defended the flights of fancy and outrageous weapons ideas posted by others as a fun way to build collaboration in the community. Braxxer attempted to legitimize the thread by stating that people were going to be presenting "solutions to the causes of war, violence etc." as if these were issues that could be resolved in the desert over a weekend by a few people. Generally, these styles of high-reaching claims are also shut down as demonstrated by this comment from an unrelated thread of another philosophical conversation attempt; "I absolutely love that you made this eternal struggle; that has stumped philosophers, alchemists, scientists, and occultists since the dawn of reason; a contest on this forum, that has no reward, and that expires in less than five months" (Flyre 2018). The solutions to war and violence are no less easy to solve yet according to the above thread, are not speculative discussions.

In contrast to the above thread of war and torture, there have been posts that discuss social theories, pop culture references, or ethical concerns related to biohacking, augmentation, and other areas of voluntary cyborgism that have been derided by the same members as being inappropriate or frivolous as they are non-technical in nature. One such post titled, "Should We Continue To Push Technology Forward In Order To Make Ourselves More Than Human?" (October 2016) in which the user wanted to discuss the ethical implications of a linked video. The video, about the

development of recent technically advanced prosthetics, showed an interview with a scientist who questioned if society needs to curb certain technological advancements if there were a possibility of having prosthetics outperform biological limbs in the future. The first few comments from the less active users were discussing the question posed and then Braxxer answered:

Are we tolerating this stuff now? Lol. At one point discussions like this were shot down as being **speculative h plus bullshit**. Let's talk about the ethics of future capitalism.. meh. Im not being critical. There has always been **a push though for discussions to be lucrative. They should make something happen. interesting discussions like this are just thought exercises** and **we are not an armchair community**. I don't personally care or anything. I'm just observing. Maybe we should have a section specifically for these kinds of discussions on the new site? Not trying to derail or shoot down this discussion. (Braxxer, 2016b, emphasis added)

This comment presents as derisive in tone. The subject of conversation is described as ‘stuff’ and ‘speculative h plus bullshit’. H plus (also sometimes signified as H+) in this context refers to the transhumanist movement. Among some grinders the transhumanist group has the reputation as a small number of wealthy Silicon Valley men and women who dream of achieving immortality yet offer few solutions beyond vitamin regimens and cryogenics. This comment corresponds to the conflicting views of transhumanism and the associated movement within the Biohack.me community that will be discussed more thoroughly later in this chapter. Braxxer’s claim to not be critical or trying to derail or shoot down the discussion rings hollow when paired with the mocking use of “Lol” and “meh” and calling the discussion a thought exercise. This is in opposition to their comments above from April 2016, where the war and torture discussions were just joking and fun ways to build “collaboration among the community” (2016a). Braxxer also claimed to not personally care but is just making an observation; if this were the case, then there would be no need to comment at all. Prior to Braxxer’s comment, the seven comments from six other users were a cordial discussion of the question posed. After Braxxer posted the above comment, the remaining thirteen comments from six users were less neutral, including negative

comments from users who had commented favourably or at least neutrally prior to Braxxer's input. The resulting conversation thread illustrates the influence one member can have regarding what constitutes appropriate subject matter for the forum and how other users quickly fall into line. Comments that stand out are:

Yeah definitely stop this from becoming a site for doomsday and conspiracy theorists. [commented earlier on post] (Foft 2016)

There has been a lot of posts along those lines lately. It's actually souring my mouth. [commented earlier on post] (Frin 2016b)

The main reason for the forum is to discuss biohacking, not question it. So I do think it should have a distinct section, a section for discussing the "outside" views of what we do, that is, what anyone who isn't a "grinder" would think. (Cheel 2016)

Braxxer derailed and shot down this conversation regardless of their statement indicating no intention to do so and in complete reversal of their armchair paintball discussion regarding Grindfest 3. The original poster replied to several comments attempting to understand the push back to their post, including one aimed directly at Braxxer.

Jeez @Braxxer. I just thought ya'll would appreciate this video highlighting new fangled bionic limbs and a little conversation, I didn't realize I was breaking some sort of unspoken rule with this thread . . . if I can't talk about things relating to grinding here, I don't really have anywhere else to go. (Smeap 2016)

Smeap employed a folksy tone to mitigate the possibility of further scorn and negativity by attempting to use a non-confrontational style. Three years have passed since Smeap's plea for a community space for thinkers *and* doers of the grinder ethos, yet there are still few other communities online that discuss cyborgs or grinding that are not primarily focused on the technical nature of the practices of the subculture and the requirement for action.

Smeap's thread has over 1600 views on the forum yet only ten users commented in twenty-two comments including the initial post. This is very common on Biohack.me; a post is made with minimal comments but with hundreds or thousands of views. The lurking contingent of

Biohack.me falls into line with the 90-9-1 rule above. The 1% of frequently engaged users are the ones who are guiding and shaping the community with their posts. Braxxer currently has the most posts of any active users on the forum with over 1,400 comments. There are three other users with over 1,000 posts as well: Shtragger with just over 1,200 comments, and two users; Mobal and Frin with over 1,100 comments each. As I will discuss in more detail in the next section, there were 149 active users on the forum as of mid-June 2019. These four users, with nearly 5,000 comments among them, account for just 3% of the active users. There are eighteen users, including these four, who have over 100 comments on discussion threads representing 12% of the users. While it isn't the exact ratio of the 90-9-1 percentage mentioned above, it is a minor deviation for a relatively small community.

Gamification of the Forum: Visualizing Member Involvement

Shortly after beginning this project the Biohack.me forum went through an update to the platform the forum uses, and this update came with an unannounced implementation of user badges and a point system. On March 18, 2019, the web administrator of Biohack.me, Flyre, posted there had been an update to the forum software to the latest version and casually mentioned, "Also, badges are a thing now." That was the extent of the announcement and I cannot find any online discussion prior to the implementation of badges that this was something desired or debated by the community or moderators as a positive for the group or the forum. With the exception of the site transition in 2015 that predated my involvement of the forum, this appears to be the first visual update of the Biohack.me forum.

The badges are simple icons with a title and brief description describing the action that precipitated the assigning of the badge. When I logged into the site for the first time after the implementation of the badge system, my account automatically updated with badges that

corresponded to my profile data. I joined the site officially with an account on February 2017, so by March 2019, I had “earned” a total of three badges. I was awarded the first anniversary, second anniversary, and the “You Look Familiar” badges. The description of the “You Look Familiar” badge is “Thanks for sharing yourself with the community.” I wasn’t sure what that meant, and I was very surprised to see these badges as it was a change from literally one day to the next when I logged in and I had never posted on the site. The badge name is a clickable link which takes the user to a “Badge Page” that has the exact same description, the date I “earned” the badge, the number of people who have that badge, and then a list of the most recent recipients. This “Badge Page” allows users to click on other user names who have that badge and redirects you to their profile. Any badge on a user’s profile performs the same: it is a clickable link and you can track other users with the same badges to go to their profile page and click on any of their comments, discussion posts, or other badges. From a researcher point of view, this badge system update is a gold mine of clickable links and a way to organize traffic on the site.

Points and a leaderboard were also implemented along with the roll-out of badges. No explanation was provided of how points are assigned nor how many points are attached to each badge. As I had only been a lurker for several years and not a contributor, it was quite a surprise to find I had accumulated twenty points and was listed on the leaderboard. Not only was I listed, the week I logged in after the implementation of the point system, I was named as one of *This Week’s Leaders* as well as being listed in the middle of the pack on the *All Time Leaders*. It took several minutes of studying the leaderboard to realize this was not a unique achievement. Everyone who had logged on since implementation had been awarded points of some kind and was listed on the *All Time Leaders* list. There was nothing special about being on the board at all. Despite the disappointment of not being special, the point system enabled me to see, for the first time ever, other lurkers on the site. And, for me to be seen as well. As I had never posted, there had been no

way for other users to find me on the forum unless they knew my screen name. I have met users in meat space and told them my forum handle but as my username contains underscore characters that alter the phonetic spelling of it, it is unlikely that any of my real-life acquaintances had ever seen my profile on the forum.

Prior to the badges system, the only way to find a user's profile page was to search their username if you knew it or to follow a discussion thread and click on a user's name who had commented on the post. It was difficult to get an idea of the number of users and the level of engagement among users of Biohack.me. Badge systems have been implemented in various forums for exactly this purpose – tracking and monitoring users and their engagement. One benefit of points and badges is the ability to see whose behaviours are passive on the forum; typical lurker behaviour of signing-in and reading versus active behaviours such as commenting and posting (Bista et al. 2012, 617). The process of measuring and rewarding user behaviours on websites is referred to as gamification.

Gamification comes from game design but has become a recent research area associated with Human Computer Interaction studies. Gamification uses elements of game design but without the game context; it is a method employed to encourage users to be active and engaged with online forums. The reward system of gamification uses social needs satisfaction to motivate specific behaviours from users such as participating more often and ideally in helpful and productive ways that benefit other users and the forum as a whole (Sailer et al. 2017, 371). However, gamification must be deployed in a manner appropriate to the group it is being used to motivate and engage. A review of empirical studies on gamification “indicates that gamification provides positive effects, however, the effects are greatly dependent on the context in which the gamification is being implemented, as well as on the users using it” (Hamari, Koivisto, Sarsa,

2014, 1). There are three distinct ways that a custom design approach of a badges and points system can benefit a community's needs for shared identity and connection.

First, is the need for competent users. Badges and points can enable “feelings of efficiency and success while interacting with the environment” (Sailer et al. 2017, 374.) Badges are a visual signifier of an achievement of the user and can confer social status amongst peers. Badges can have multiple functions if the prerequisites for obtaining them are known to the users; they can be virtual status symbols as well as a feedback device that can influence a user's behaviour in a way desired by the administrators of the forum (Sailer et al. 2017, 373). Badges as feedback and user behavioural modification devices can be achieved by influencing users to meet challenges or alter their engagement patterns to earn the badges associated with those behaviours.

The second is the need for social connectedness. This “refers to one's feelings of belonging, attachment, and care in relation to a group of significant others. It represents the basic desire of the individual for coherent integration with the social environment” (Sailer et al. 2017, 374). Badges can be a symbol and status measurement of one's belonging to a group; both the group at large as well as the select group of users who have achieved the same badge status. The final community requirement that gamification can satisfy is the need for goals. Users should have defined goals that are achievable in order to feel satisfaction when goals are met. “When points alone are implemented to track achievement, there is no specific goal to pursue” (Landers, Bauer, Callan 2017, 508). Unachievable goals are not motivating, and a haphazard implementation of a pointless point system may discourage user engagement. The point system should have some tangible benefit to users and achievable goals.

The badge and point system implemented on Biohack.me unfortunately does not meet many of these social needs to motivate users. The badges used on Biohack.me are generic, default icons and descriptions provided by the open-source forum platform used by Biohack.me, Vanilla

Forums. The icons and badge names are not personalized to Biohack.me nor do they have any significance regarding biohacking, grinding, cyborgs, or other point of reference important to users of the site. Biohack.me members prioritize individuality and personalized alteration and yet the visual status symbols and badges of membership are devoid of any sense of representation of the community. The addon used on Biohack.me for gamification provides the webmasters the ability to create custom badges, emoticons, and ranks for users (hgtonight, 2016). Despite the ability to create custom badges, this was not done for the implementation on the site and additionally, the point system appears to be arbitrary in nature.

Explanations I can surmise for the rollout of generic badges and vague point system on Biohack.me are a lack of time, interest, or knowledge of gamification practices on the part of the web administrator. This thesis is not a treatise on proper and timely website maintenance but to assist a fringe community's efforts at cohesion to assist in the development of the subculture, full use of these gamification methods could contribute in engaging and motivating users to become more active in the forum. Derek Roberts' research on virtual communities examined how website administrator's mishandling of forum updates led to the demise of a popular discussion board among body modification practitioners (2017, 371-372). Users of the forum were unhappy with the unrequested changes and in the month following the restructuring, half of Roberts' research participants abandoned the website (2017, 371).

The implementation of the point system requires explanation and achievable goals for the community in order to increase engagement. Left to my own devices to figure out the point system, I resorted to mathematical deduction as no one on the site was discussing the point system or expressing any interest or confusion by it. I can't be sure if any one else noticed the points and leaderboard as the list is only visible once a user has clicked a badge link to go to the description page. There is no distinct clickable link for the point system. It is also possible that users are not

curious as they can see no perceived benefit of the badges or have not explored the implementation in detail. It is also possible that the implementation was not confusing for them as it was for me. I don't spend a lot of time on forums in general and lurk on a couple sites of interest to voluntary cyborgs. Perhaps the members of the community understood the gamification system without requiring explanation and were not concerned by long-time lurkers abruptly losing their privacy. Using the leaderboard as a guide, it showed that while there are 149 users who have been active since March 18, there are likely a number of users who are still not accounted for. Anyone who signed up on or after June 16, 2018 (364 days prior to my final data collection day of June 15, 2019) and has not posted nor updated a photo, would be without points and could still lurk undetected by the larger community. It is also possible to lurk on the Biohack.me site without an account at all; none of the posts are private or require registration to read or navigate on the site. I can't be sure if the forum web admin intended this side-effect of granting easy access to individual users' complete forum history, and I found the complete lack of conversation regarding this new system fascinating and frustrating by turns.

One of the benefits of the gamification system rolled out on Biohack.me is the ability to quickly see if a comment or post from several years ago was made by a user still active on the site. When a user logs in to the site for the first time since badge implementation, all their posts retroactively have the badges added that the user has earned. Earned badge icons display next to the user's name within the forum discussions. For example, in the discussion below, Braxxer has logged in to the site since badges were implemented so their post from 2018 has their earned badges displayed, all fourteen of them. Booh has not logged in since the badges have been implemented and so there are no badge icons on any of their posts (See Figure 7). On the other hand, there is a drawback to the system that I had to be aware of; at times I was finding myself prioritizing the perceived authority or knowledge of active users simply because of the badges

indicating consistent engagement from that user. Practical, useful, or helpful comments are not measured yet I found myself assuming there was more subcultural knowledge or authority from the badged members on old posts. The badges themselves do not represent the quality of a users' comment history, but the quantity. Accumulated time and number of posts are the only metrics measured by the badges.

Figure 7: Retroactive Badge Assignment

Cyborgian Language and Practices: Not Suitable for Children

Subculture studies allow for the examination of the ideas, practices, and objects that most of the members consider to be important aspects of their individual identity as well as their collective identity as a community. The voluntary cyborg community places importance on three specific areas of interest that will be discussed in this section. First is the belief that this is not a community for members under the age of 18 to participate in. Many members worry about the legal implications of offering advice to or acceptance of underage participants who want to surgically implant their own devices, while others extend that boundary by advocating for a restriction that would not permit anyone else to implant devices in a person under eighteen, including professional piercers. Cultural capital is the second topic that subculture members in

general view as a positive aspect of belonging. The section wraps up with an examination of one of the principal members of the voluntary cyborg community and how they are influencing the practices and values of the forum, and possibly, the wider community.

One of the ways people gain and maintain membership in a subculture is by sharing common language and signifiers. However, the use of specialized language can act as a barrier to those who are looking to join and engage with the community and may not be considered at similar levels of competence as those who use language as a gatekeeping device or to illustrate their authority of subject matter. Some commenters are aware of the barriers their language use and knowledge of areas of inquiry of interest to cyborgs can appear to novices. “Not gatekeeping here, but if you don't know what to modify, probably shouldn't modify” (Shtragger, 2019). For a forum member who doesn't speak the specialized language of the “expert” who has replied to their comment or inquiry, it can be problematic to question their expertise. It's even more difficult to do it in a public reply for anyone in the forum to see, and where the expert may enthusiastically take them to task regarding the lack of jargon or other privileged language. The way the Biohack.me forum is set up, the only way to provide feedback on a post, comment, or user is to comment publicly or to send a private message to the other user. There is no way to rate comments indicating good or bad quality advice or information, no ranking of knowledgeable contributors or purveyors of dissent, or any indication as to who may be an expert of a subject unless the user self-identifies as one. And on an anonymous(ish) website, self-identification as a subject matter expert should be taken with extreme caution.

Braxxer favours medical terminology to encourage behaviours they find desirable in members of the Biohack.me community. If the person is able to reply to Braxxer in their chosen terminology, then Braxxer will generally reply favourably. When the user does not use or understand the medical terminology, Braxxer may shut them down in a similar manner as the

Smeap post about the ethics of prosthetics discussed earlier in this chapter. During one thread discussing a magnet implant from a self-proclaimed underage contributor, Braxxer requested that only standard anatomical position (SAP) language be used.

When discussing direction regarding procedures, we use specific directional terms based on a person being in SAP - standard anatomical position . . . By using the right directional terms.. its much easier to discuss these things. Can you ask your question again using these descriptors? (Braxxer, 2019a).

To be fair, the question that Braxxer was responding to was vaguely worded and was accompanied by a rough hand-drawn diagram of fingers and squares on a piece of paper. “I am a little confused on if you cut up or downwards during a magnet implant. or do you cut straight. Thanks for the help” (Crawn 2019).

Figure 8: Hand-drawn Diagram. Crawn 2019.

Some new members who are eager to self-experiment and implant their own devices will often overlook or disregard safety practices under the assumption that as this is an underground, DIY-inspired community, then anything goes. These new users often find out that is not the case and that other users will reprimand them for their poor sterilization procedures or unnecessarily dangerous self-surgeries. Here is an example thread of comments on a somewhat graphic post from a user who implanted a magnet into their own finger using a propane torch to “sterilize” the

scalpel and a mixture of rum and hydrogen peroxide to “sterilize” the magnet prior to implantation.

It [the magnet] came in the mail today and I quickly set up my workstation and began cutting. It was literally hell, and I made a huge mistake not using any numbing agent other than ice water, because it hurt like a bitch. I had to go back and widen the hole three times, and by the second time my vision was swimming and I thought I was going to lose consciousness. At one point I accidentally scraped my bone with the tip of the knife . . . Almost vomited right there. It took four total insertions of the blade to actually make a hole of the right proportions to fit the magnet. Somehow I plopped the magnet in, but I ended up just bandaging it rather than using stitches because I was in too much pain and too lightheaded to continue hurting myself. (Pazy 2016)

You WHAT? Your eyes were swimming and you almost lost conscious and you KEPT GOING???

I am shocked by this . . . it should have been aborted way before that point . . . you risked a lot of harm to yourself . . . Getting septic shock is NOT FUN. (Chells 2016)

jfc, [Jesus Fucking Christ] **this might need to be in some hall of fame . . . "Don't be this kid" -- Seriously. Irresponsible bloodbaths like this could kill you, and bring the entire community down with you should some zealous regulation types decide your mistakes have made this whole thing too dangerous . . . How can you take a ‘calculated risk’ when the calculating part never happened?** Didn’t look up alcohol sterilization once (guessing not, since you clearly missed how bad of an idea that is)? **What was this ‘planning’?** Did it consist of waking up one day and going “Well fuck I guess it’s time to bore a hole in my flesh without taking two minutes to look up the word magnet?” Because honestly that even sounds more prepared than **this cascade of fuckery.** (Vard 2016, emphasis added)

These comments are typical for these types of posts; the members ridicule the poor decisions made by the poster, show contempt for the lack of planning, and deride them for the safety processes that were ignored. Pazy stated in a later comment that they were 19 years old. This lack of forethought in planning or cognizance of the risks inherent in the implant process are frequent attributes of younger users who have posted on the forum. This online community is not a place

for younger people to get instruction for implanting devices; many members have a hard and fast rule against anyone under the age of majority performing self-surgery.

Users who are under the age of 18 who post asking where they can get chips and magnets implanted are usually told to wait until they are at least 18 before attempting any implants.

That said however, I must say this: nobody under 18 should be doing this stuff, especially not without parental consent. (Bied 2015)

Personally I wouldn't do an implant on a minor even with parents their giving consent in person. (Shegs 2016)

I'm not trying to be mean, I'm simply warning that at your age, it's not a great idea to implant and use a bunch of people on the internet as your sole source of information. (Uqtral 2018)

Underage users sometimes come around to the idea of waiting until they are at least 18 and using that time to learn more about the community, implants, and surgical procedures, while others forge ahead and implant anyway. There is no real way to stop underage implanters, especially on an online forum, but it is common practice to attempt to convince them to research and wait. It's a thought-provoking tension in this subculture; the belief in modifying the body in ways that other deem as extreme, including self-surgery and experimentation, but at the same time warning others of the dangers of the practices of the group. The group needs to expand; without new members helping the subculture to grow, the community risks fading away into further obscurity. Younger subculture members tend to enjoy the riskier and more fringe practices yet long-time members are attempting to restrict or curb behaviours of newer members.

Subculture growth relies on younger people wanting to participate in the practices of a community where they can find a social group or feel a sense of belonging; this has been well-documented in subculture studies (Haenfler 2014, Hebdige 1979, Hodgkinson 2002). In opposition to this accepted attribute of subculture growth, is the voluntary cyborg subculture and members' concerns regarding underage implant procedures that may be in violation of individual state's laws

addressing body piercing rules for minors, or that might contribute to dangerous practices that could ultimately lead to infection, sepsis, or even death. Informed consent is a basic requirement for many members in the group and they are suspicious of younger members not having enough knowledge about the process or an awareness of the potential safety risks associated with improperly inserted implants. There are online shops with good reputations that some cyborgs purchase their pre-made implants from, but there are also online shops where members can buy supplies to make their own implants. These supply shops do not necessarily make products that are safe to implant in the human body without careful preparation prior to implanting; bio-proof coatings need to be added and proper sterilization techniques used on all equipment to prevent infection or rejection. The consensus of the forum community appears to be that most people under the age of eighteen do not recognize the consequences of these risks, and while they are welcome to participate on the forum, they are discouraged from becoming implanted cyborgs. The wide-ranging responses from younger users varies between “screw you, I’m gonna do it anyway” to “you have a point, I will do some more research.” The tension between the two concerns – growth of the community versus safety of the members, is not discussed outright by members on the forum but is evident in the language and subtext of the types of posts discussed above. The age-exclusion may be an attempt to be viewed by outsiders as a responsible group of concerned members and not a reckless community of techno-freaks.

Cyborg Cultural Capital

A perceived social benefit to belonging to a subculture is the social and cultural status associated with being an insider of the group in good standing. Sarah Thornton termed these benefits as “subcultural capital” adapted from Pierre Bourdieu’s theory of cultural capital (1995). Forms of subcultural capital are tattoos, fashion choices, specialized objects or equipment such as

a particular brand of motorcycle for a biker subculture, and more (Haenfler 2014). The voluntary cyborg community members are no different in the desire for and showing off of their cultural capital. To be relevant to this community, I have added the technological aspect to subcultural capital to establish the traits and social status within the group as cyborg cultural capital. When cyborgs get together online or in meat space and meet new people, they invariably begin comparing what implants they have, where they got them in their body, who implanted them — self-implantation or by a professional piercer, and how they use their chips or magnets. Some cyborgs pride themselves on making their chips functional in their day-to-day life; they install RFID locks on their cars or houses, they program the chips with their company's or gym's security pass info, and they enjoy being able to start their car, go to work or the gym, or unlock their home's doors without the need for an external key (Schmid 2018).

Some voluntary cyborgs, and I include myself here, use our chips for entertainment or as conversation starters. When I go about my daily life as a voluntary cyborg who enjoys chatting with people, the topic of my chips often comes up and most people ask what my chip does; what function does it perform. Utility and function are important for those unfamiliar with implants; however, I prefer to entertain people, and my landlord won't let me install an RFID lock anyway. For the last four months or so I have been using one of my chips to rickroll people. Rickrolling is an old internet meme where people were tricked into unwittingly clicking on a link that redirected them to Rick Astley's 80's pop hit, *Never Gonna Give You Up*. When people scan my chip with their phone, it opens the YouTube video of the song on their screen. They've been rickrolled. It generally receives a positive reception from those who know the joke and realize what I've done while it takes some mild explaining to people who have not heard of the prank. My cyborg cultural capital increases when people get the irony of a cyborg using implanted tech to play an internet prank on them that reached its apex a decade ago.

Other cyborgs place value on how long they have been a part of the community or how long since they got their chip or magnet implanted. The longer the better, and if the magnet has been implanted long enough to stop working, then that forms a different form of cyborg cultural capital. Some leave their old magnets embedded, while others remove them right away and implant a new one. Some users gain recognition for performing self-surgery, although the days of using vodka as disinfectant and ice as a numbing agent are gone, and those actions are now viewed as reckless and irresponsible behaviour.

Yes, at one point we were using hot glue guns, exacto knives, and ice. But we've grown as a community and learned. (Braxxer 2019b)

Even using these substances, even the people who cut their fingers open with hobby knives, stuck a sugru lump into their skin, poured vodka over it, and then bandaged it up with a bandaid . . . (Glark 2016a)

Many voluntary cyborgs enter the subculture after earlier experiences with other forms of body modification. Piercings and tattoos are popular adornments to their meat suits. Some users on Biohack.me have stated their intention to tattoo the Biohack.me site logo or the NFC field image onto their bodies near the location of their implants; other users have posted x-rays of their hands showing how many implants they have and their placement — this is becoming a signature practice of voluntary cyborgs with multiple implants and even I have included the x-ray of a voluntary cyborg of my acquaintance in this thesis (See Figure 5 in Chapter 1). I can't recall seeing x-rays of someone with just one implant; the cyborg cultural capital comes from having multiples in interesting locations. These x-ray images are popular as representative images for published articles about voluntary cyborgs and are used to illustrate placement and size of implants in articles for those outside the community (Gray 2014, Matthews 2015, Turk 2013).

There is also prestige in the voluntary cyborg community for being interviewed by journalists or followed by documentary crews at various events and many people in mainstream

society find fame or notoriety interesting. Many voluntary cyborgs attempt to get the word out about their practices and activities and generally, most publicity is viewed positively as long as an individual's actions don't make the larger community appear foolish or dangerous. Most voluntary cyborgs in the community who are interviewed are aware they have no real control over how the final story is framed by the journalist but in order to raise awareness of the community and its practices, many cyborgs are willing to risk the potential for bad press.

Values and Behaviour: The Self-Styled Steward of Cyborg Subculture

Braxxer is one of the principal contributors to the forum in the last few years with over 1,400 comments, they are known in interviews with *The New York Times* and other online news sites by their Biohack.me username, as well as their meat space name, and has the most comments on Biohack.me of any user I have come across in my research. Their home is the location of Grindfest, an annual grinder gathering that has been filmed by various documentary crews and covered by journalists, and over the last two or three years, Braxxer has become one of the central and high-profile gatekeepers of the current incarnation of Biohack.me. In this project I have designated Braxxer as the self-styled steward of the forum, and by extension, of the voluntary cyborg subculture. In this instance, the term steward is meant to reflect the sense of responsibility and ownership exhibited by Braxxer; the responsibility to correct language and guide behaviours of users on the forums, and the ownership of an event that is becoming more well-known each year. I suspect Braxxer might resist this title and the charge that they influence the current subculture but, after studying their comment history and increasing press coverage, I stand by the term.

I have been familiar with Braxxer as a frequent contributor to the Biohack.me forum and as the host of Grindfest for quite some time, but over the course of my data collection for this

project the sheer imbalance of control and influence wielded by them over the last several years became evident. Braxxer is *the* most active of the active 2% of users on the site. No other active user has commented more on the forum. Their profile page shows they visit the forum daily and often posts multiple times on various threads. While user engagement is to be encouraged in a forum, the disproportionate engagement of a single user can risk transforming the community from an open discussion into an individual's private arena. The power imbalance also grants Braxxer the ability and confidence to make sweeping declarations such as their post titled ““General Values” in Grinding” that they created in February 2019. The “General Values” post is a slightly altered version of a multi-comment thread Braxxer posted admonishing an inexperienced community member who was gathering together materials to perform self-implantation of a magnet in their finger. This is the same inexperienced user (Crawn) from the Standard Anatomical Position language post discussed earlier in this chapter, but Crawn had made a separate post for this discussion about items they may have forgotten to gather prior to implanting a magnet.

The early posts in this new thread by Braxxer were appropriate as it was a conversation regarding the supplies and tools the implanter was missing and how Crawn did not see the need for proper sterilization or other elements to reduce the risk of infection. Concerns of improper sterilization leading to infection, and the possibility of sepsis is important to the community, and most agree that its something that should be addressed in threads looking for that sort of advice. But after these responses, Braxxer began what could be described as a lecture or possibly a rant. The post is quite long but there are some key sections with important points quoted and highlighted here.

One other thing.. **a lot of people spend a lot of time and effort honing their skills and abilities.** We make sure were doing things right and safely. **If you choose not to, its your prerogative but please don't**

consider yourself a grinder or bio hacker. We get enough shit from people for the things we actually do. What we dont do is perform half ass procedures with non-sterile equipment. So make sure that if you do this not to associate with us. It's something people do.. but it isnt what those in this movement do. I think teaching and sharing is important but once people start talking about doing an implant without sterile equipment, I'm out. I don't think you're ready for this. Do more research or you're going to hurt someone.

Ok, so I was 50/50 about my tone on the previous responses. **I'm going to even cut this response and turn it into a thread altogether because I think it has more global importance.** Even spoke to a mod regarding appropriateness as I'm not great with interpersonal yada yada. I want to emphasize, I'm not trying to be a dick; **this really is an important distinction. There are tons of ways people define Grinding. It's still a common discussion even.** I mean, look at Glivvers class things he's been working so hard on.. how did he begin? By giving his definition. **I'm not claiming ownership. I'm not trying to say my version is the one true version.. but there are certain values which we as a community share. These values have a function.**

You can dig back to when Shtragger and I had our "breakup" re: Science for the Masses. I've sniped at him and at thought emporium plenty of times. There are other well known rifts too. **This isn't me and a bunch of my friends deciding on some arbitrary set of values..** I think Shtragger and Mobal and I are cool now, but even at our most "fuck you" times, I never said they aren't "Grinders." **(I don't care what you call it; I'm talking about this community.) They adhere to a similar set of values.**

1. **Do at least as much as you talk:** . . . It's fun to speculate. But that's not what we're here to do. **Grinding is doing. Grinding is now. Grinding is a verb** . . . I don't care about magnet implants. The reason I've spent years obsessing over it is because if we can't get a damn magnet implanted without failure it isn't worth even bringing up BCI and the like.

GRINDING IS DOING.

2. **Grinding is repeatable, reproducible, measurable, and open.** You think crystals will charge your Chakras? Good for you! But unless you're able to give a repeatable, reproducible way of measuring this? You're full of shit as far as I'm concerned . . . You're wasting my time.

3. **Grinders demonstrate due diligence** . . . Because what we're doing is generally superficial and small, we can get away with "cutting corners." But this is only acceptable when it's due to the inability to do better . . . **We are a teaching community. You aren't expected to be an expert, but you are expected to have done the due diligence needed to be safe. We don't criticize a lack of knowledge but we do criticize someone doing something they lack the knowledge to do safely.** We may do unsafe things, but we always make them as safe as they can be within reason. **Yes, at one point we were using hot glue guns, exacto knives, and ice.**

But we've grown as a community and learned. The resources are available. There is no excuse to do things half ass. **If you can't afford sterile equipment, then the "hack" you need is to increase your income. If you can't find the information you need to do something safely? Scientific literacy is the hack you need. Don't do things half ass. It isn't Grinding.** (Braxxer 2019b, emphasis added)

Braxxer had been making frequent comments on this thread for several hours before these two comments quoted above were posted. They had commented on the post over several days but an influx of their comments on the post began February 14 at 5:25PM, 10:29PM, February 15 at 12:59AM, 1:00AM, 1:10AM, 1:12AM, 1:22AM, then ended with these two; one at 1:29AM and the last finally at 3:12PM for the longest comment posted. There were nine posts in less than 24 hours with six of them in a thirty-minute time period with no one else commenting in between. This flurry of posting activity suggests that Braxxer was experiencing an emotional response regarding the need for the advice they were giving. Whether it was anger, frustration, or some other response, it is clear they were affected by the lack of preparation and knowledge of the user who had posted looking for advice.

This emotional investment in the post triggered a long “General Values” post that has been mildly edited from the version above and is pinned to the Announcements section of the forum under the heading ““General Values” in Grinding” for all members to adhere to. I quote an abridged version below highlighting the changes.

I'm posting an altered version of this from another thread. I think it's important to give a very loose "values statement." **We as a community share certain basic values and these values have functions.** People often seem surprised when the tone of discussion jumps from "how can we help you" to "GTFO." We're a damn accepting group of people. We're very tolerant; however, **there are some behaviors which are not accepted.** Many are related to how we treat others. For more info on that **check out the code of conduct** thread. **We went for a very long time with a far shorter code.. it was just don't be a dickhead. We've grown in numbers and so we finally had to actually define "dickhead,"** just to avoid any confusion. But being a dickhead isn't the only way to get banned or excluded from the community. The thing is, **everything is open to**

discussion. Nothing is sacred. We aren't afraid to have our most basic assumptions questioned. The values I'm going to discuss aren't about being a better person. **You don't have to believe in them, but if you're going to float here you are expected to demonstrate these qualities.**

. . . You're wasting my time. **Purely speculative discussions don't belong here.** (Braxxer 2019c, emphasis added)

This one thread metamorphosed from an admonishment from one experienced user to a novice user and transformed into a broad, sweeping declaration of the entire online community's shared basic, functional, values and who gets to call themselves a grinder or be a member of the community. Braxxer maintained they were not claiming ownership or stating that their "version is the one true version" but in the very next sentence stated that this version is the community's shared values. Braxxer then went on to post these as the values and qualities all members must demonstrate if they are "going to float here" and titled them as the ""General Values" of Grinding."

The statement, "this isn't me and a bunch of my friends deciding on some arbitrary set of values." stands out as it comes across as an individual's attempt at deciding on the "arbitrary values," not a group of friends. Though Braxxer does go on to name people that they have had conflicts with and magnanimously states, "I never said they aren't "Grinders."" It may not have been Braxxer's intention to imply that they are the one that makes the decision as to who may or may not be called grinders, but in two statements in the comment, does exactly that. The three numbered points are very similar to the statements from the founders regarding the origin of the forum: grinding as action. Braxxer adds the reproducible and due diligence aspects but overall the three points are not too new to the community. What is new is the "You're wasting my time" statement. Braxxer spends a lot of time answering questions and commenting on threads but I am not aware of any requirement for them to do so. The implication is that if it is a waste of Braxxer's time, it is a waste of everyone's time. Another inference is that if it isn't interesting to Braxxer, it

is not of interest at all. This echoes the thread discussed earlier between Smeap and Braxxer where Smeap wanted to discuss some ethical considerations of grinding and Braxxer wasn't interested which, in turn, provoked the other users to denounce Smeap's post and their earlier contributions to the discussion. Conversely, Braxxer had been interested in the speculative "Paintball War Discussion" and that conversation could remain as it was.

It could be surmised that comments and declarations such as this post can limit the engagement and contributions from other users. The "General Values" post informs users that they are not allowed to speculate or waste Braxxer's time with their posts. Although Braxxer stated, "it's fun to speculate. But that's not what we're here to do," one interpretation could be that while speculation is fun, no fun is allowed. Braxxer appears to be determining which conversations are of value for the whole community and that if a user might be interested in a speculative conversation, they are not welcome to post in the forum.

It is important to examine what might be some of the consequences of one user appearing to wield a large amount of power or influence over an open online forum. The increasing association of Braxxer as the head of the loose organization of community members has the potential for Braxxer's individual actions to impact the community as a whole, both positively and negatively. This runs the risk of the success of the collective hinging on one person and potentially failing to grow and expand based on their desires or whims of suitable subject matter, membership requirements, or other practices of members. In subculture studies, it is generally accepted that there is no official hierarchy, bureaucracy, or legitimated rules that are absolute (Haenfler 2014, Hodkinson 2002) and that meanings are shared and created by subculture members. "Subculturists do not simply inherit or "join" a pre-existing set of meanings, but actively create them (Haenfler 2014, 17). Centering group practices with one individual raises the possibility of the group becoming a lifestyle movement where the individual is viewed by outsiders as the spokesperson or

marketer of the lifestyle. Examples such as the Bulletproof lifestyle ‘hackers’ that are associated with the company started by David Asprey or the Quantified Self movement. Having the group’s shared values outlined by one user and posted for dissemination runs counter to usual subcultural practices. If other members are contributing to Braxxer’s posts or rules, they are not claiming credit and therefore, the assumption must be made that Braxxer is the sole instigator.

There may be legal implications to Braxxer becoming associated as the community’s spokesperson and “medical officer”. Braxxer is a trained medical professional and this may also open Braxxer up to potential issues of liability as their medical knowledge is not just inferred through comments on the Biohack.me forum but is declared in interviews online. *The New York Times* article, “Magnet Implants? Welcome to the World of Medical Punk” referenced Braxxer several times as the host of Grindfest but also identifies Braxxer as a registered nurse. In that interview Braxxer was “careful to emphasize what they are doing is not medicine or surgery but akin to body modification and piercing (the first two could be legally problematic)” (Hines, 2018). Another media article identified Braxxer by their real-life name and Biohack.me handle and stated Braxxer is “the community’s unofficial chief medic” and a registered nurse (Brown 2018). The voluntary cyborg community should not be assumed to be a medicine-practicing community but to be aligned so strongly with a medical practitioner could make the legally grey area of body modifications a little bit murkier and opens the group to facing accusations of offering medical advice. Counter to that, there is also the potential for concern for Braxxer or any member of the community outright refusing to help or offer advice to community members seeking them out for their training and knowledge. Braxxer has stated publicly in other forums and meetups that they are very concerned that a new or inexperienced person to the group will die or be severely incapacitated by a poorly done implant procedure and this will have a dire effect on the rest of the community. Braxxer has indicated that one of their goals is the perpetuation of the community and

works towards that goal by emphasizing particular behaviours or beliefs for the rest of the community members to follow.

As mentioned in Chapter Two, there are studies of online communities that have created five conditions for online activities that are required in order for a group to be considered a participatory culture. The third condition, a type of informal mentorship to pass knowledge on to new members (Jenkins, et al. 2009, 3), would be fitting here if there were more than one influential mentor. There are other active users on the site who might be considered mentors as well, but they do not have the reach that Braxxer currently does. There may well be other mentors out in meat space or using other forms of communication amongst the voluntary cyborg subculture, but this research project is limited to analysing the data from this forum within the timeline of the study, and so no assumptions can be made regarding the existence or participation of these other mentors. The research indicates that Braxxer is too involved to be considered a mere mentor, and that no other active forum user is contributing in the same manner to the community over the same short period of time. The other four conditions of participatory culture regarding content creation and support are met in shifting ways by various members, but these tools did not prove as useful for analysing the voluntary cyborg community on this single website forum. As a result, the conclusions reached in this thesis regarding Braxxer and other user's online activity have been based on the elements of Haenfler's subculture definition (2014).

Braxxer, in trying to define and stabilize the online community, may instead be a destabilizing force. Braxxer has attempted to make decisions for the group as to who can call themselves a grinder or member of the community, what language they are required to use, what behaviours they must demonstrate to be a member and determines acceptable subjects that other members may post for discussion on the forum. There is value for the group in having a medically trained professional willing and available to help members with their concerns; however, both

Braxxer and the group should be aware of the possible consequences to that amount and type of medical assistance and to that attempt at bureaucratizing the group to one individual's liking.

Cyborg Advocates: Overcoming Resistance from the Mainstream

The voluntary cyborg subculture is remarkable compared to most other subcultures as many members want their practices to not just be accepted but *adopted* by the mainstream. A number of voluntary cyborgs make efforts to communicate with the press to present their practices as innovative yet safe, or as avant-garde yet logical. Cyborgs like Tim Cannon, Rich Lee, Anastasia Synn, and others are often the subjects of journalist's articles introducing cyborg practices to the wider public. These interviews are often ways for the community members to destigmatize their practices and allay fears the public may have regarding implants. There is a lot of misinformation circulating about RFID and NFC implants in particular. It is common for some journalists to need to clarify that the chips are not capable of tracking a person's movements or location (Graham 2017, Grauer 2018, Schmid 2018). A frequent comparison made is how the chips used by veterinarians for the identification of lost household pets are similar in technology to the chips that are implanted in humans (Graham 2017, Walt 2019). Anyone who has lost their microchipped pet knows there is no way to track the animal's location through the chip; the chip is simply a type of embedded contact card so if the pet is found and scanned, someone can call the pet owner to retrieve their lost animal. This comparison to Fido or Kitty is used as a form of reassurance for some members of society regarding the novelty and concern about implanted computer chips and the potential uses for tracking or surveillance. As mentioned in the Introduction, the chips that voluntary cyborgs use are passive; there is no battery and no capability for tracking or surveillance. Similar reassurances are repeated in many articles.

Frequently, the cyborgs in journalist's interviews are framed as non-threatening but perhaps a bit odd or eccentric. "Cannon looks and moves a bit like Shaggy from *Scooby Doo*, a languid rubberband of a man in baggy clothes and a newsboy cap. Sarver, by contrast, stand ramrod-straight, wearing a dapper three-piece suit and waxed mustache, a dandy steampunk with a high-pitched laugh." (Popper 2012). Other voluntary cyborgs have been reassuringly described by their clothing choices as well. An innocuous description of one of the women who identifies as a cyborg, Amanda, "who wears a circuit-print dress and a caffeine-molecule pendant" was related in a story for *The New York Times* about Grindfest and the attendees (Hines 2018). Not all descriptions are flattering to the community; the same article in *The New York Times* described the accommodations and recreational activities at Grindfest in a manner that made it sound like a 1970's hippy commune where "a dozen bodies curl together under blankets on a living room floor" and one cyborg "who has been living in a lemon-colored converted bread truck for the last few months" (Hines 2018). The comparison may influence readers of the article to see the cyborgs as harmless or dangerous depending on the reader's views of countercultures.

Cyborg performance artists Neil Harbisson and Moon Ribas are frequently the subject of journalist's stories discussing the novelty of implants and the entertaining and innovative ways implants are being used. As performance artists, any eccentricity or odd behaviour can be excused or understood by the public as artists are often understood to be quirky. Harbisson and Ribas are co-founders of the Cyborg Foundation and their "mission is to help people become cyborgs, promote cyborg art and defend cyborg rights" (www.cyborgfoundation.com 2019). The defending of cyborg rights will be discussed in Chapter Five, but the mission of helping people become cyborgs is also a pivotal aspect of Harbisson's and Ribas' attempt to normalize cyborg practices.

Neil Harbisson was born with a condition known as achromatopsia; he was completely colour-blind and could only discern shades of black, white, and grey (Harbisson 2012). In 2003 at

the age of 23, Harbisson and a computer scientist friend invented an antenna that could be connected to a computer chip installed in the back of his head. The antenna is a camera “eye” that detects colours and the computer chip implant translates the colour to a corresponding sound frequency (Alfaro, et al 2015). The sound is transmitted through bone conduction to his inner ear so that it is audible only to him although the sound can be made audible to an audience when he does performances such as in his Ted Talk from 2012. Harbisson can hear infrared and ultraviolet light as well as all 360 colours on the human-capable visual colour spectrum (Pearlman 2015). Harbisson can convert the colours he hears into audible songs for audiences as well as converting well-known speeches from historical figures into colourful artworks (Harbisson 2012).

Moon Ribas grew up with Neil Harbisson and trained as a dancer when she was younger and as a result, she frequently incorporates movement as part of her implants. She has sensors in her body that are connected to seismic information and the implants vibrate whenever there is an earthquake anywhere on the planet that measures over a 1.0 on the Richter Scale (Chan 2017). The implant’s haptic vibrations vary in intensity in correlation to the force of the earthquake and Ribas has incorporated her seismic “sense” into her dance performances and does interpretive choreography inspired by any earthquakes that occur during her performance time, and the data sent to her implant from that earthquake. Ribas is small, attractive, and well-spoken about her implants and the effect they have on her view of the world. It may be a struggle for many outsiders to see her or her implants as threatening or something to fear from the way she is portrayed in media articles.

Interviews with various cyborgs mention the desire for widespread acceptance of their views and practices; that there is “a keen desire to win over public support” (Klotz 2016). Ryan O’Shea, spokesperson for Grindhouse Wetware, used to work for a member of the United States Congress in Washington, and O’Shea is often quoted in articles comparing the development of

implantable technology to the early test flights by the Wright brothers and how that technology changed the world (Brown 2018, Cohen 2016). It is also common for cyborgs and journalists to claim that getting a chip implanted is not much different from getting a tattoo or piercing (Brown 2018, Grauer 2018, Walt 2019) and as discussed in the academic literature earlier, tattoos and piercings have moved from being associated with deviant or fringe subcultures and are now so common they are considered mainstream. If the outspoken cyborg advocates succeed, that transformation of public perception and acceptance may happen with cyborg implants as well.

Summary

The voluntary cyborg community is struggling with some aspects of their progression to a subculture. There are issues of instability in the continued debate over the name of the community and practitioners, grinders, cyborgs, hackers or some other term, even eight years after the forum community was created. The community was born from the blog of a kitchen-table hacker who dug into their body with a vodka-soaked vegetable peeler to implant magnets, yet the community now condemns such practices from members, particularly those who are underage. The forum, and the community, go through periodic growing pains as new younger members can't wait to hack into their bodies and shove magnets and chips inside. Long-term members who rely on their specialized knowledge and language attempt to enforce the boundaries of who belongs and who does not to varying degrees of agreement or success. There are not many active users on the forum and an incomplete roll-out of a gamification attempt has no clearly defined purpose or objective to increase the number of engaged users. While the collection of generic badges and valueless points may not be enough to motivate users, the perceived value of various types of cyborg cultural capital may be sufficient to satisfy members who participate in cyborgian practices and offer stability to some members. The self-styled steward of the cyborgs occupies a considerable amount

of space on the forum and in some meat-space events, but their actions may end up further stigmatizing the group and causing internal instability. Other cyborgs are keen to bring more members into their cyborg practices and attempt to proselytize their message through the press to varying degrees of success. There is significant potential in a longitudinal observation study of this community to investigate the methods the group may use to navigate the elements that constitute a subculture and how the group deals with the current destabilizing forces and attempts to expand into the mainstream.

Chapter Five – It’s All in the Presentation: Framing Cyborgs

Journalists don’t just report stories of interest to them, they interpret them and act within communicative, professional and cultural norms. Stories can be framed, intentionally or not, to express different ways readers might think about the issues reported. The quick definition for media framing is often, “the media don’t just tell us *what* to think about, but *how* to think about it” (Griffin 2012, 383). Framing is the language and context used to discuss various topics in media articles and is an approach to analyze how the language chosen may influence the audience’s perceptions of unfamiliar subject matter. Some scholars suggest there are four possible ways for journalists to frame an issue: define the issue, identify the causes, make moral judgements of causes and effects, and finally, to suggest treatments or remedies and predict the effects (Entman 1993, 52). In this chapter I will examine how voluntary cyborgs are often the subject of news coverage and how media framing affects the group. I will also discuss how these frames may influence the possibility for the uninitiated to accept or reject cyborgian practices.

Some journalists use an ethnographic approach of their own spontaneous implant procedures that frames the practice as impulsive. Other journalists discuss voluntary cyborgs from a business perspective or, what I call, the “cyborg as capitalist frame,” while still others declare cyborgs are occupying a murky legal area that, at times, is seen as a failing and at other times is described as cutting-edge and innovative. Finally, there are journalists who look at larger social structures of gender disparity to frame cyborg technology as a masculine practice that ignores the contributions of women. Each of these frames will be discussed in turn highlighting how the voluntary cyborg community is internally affected by these frames as well as how the external public may interpret the voluntary cyborg community and its practices within these frames.

Oops, I'm a Cyborg Now: The Impulsive Implants Frame

Some journalists have used their own implant experiences as the inspiration for their articles about voluntary cyborgs. (Brown 2018, Collins 2015, Leipper 2016, Matthews 2015, Oberhaus 2018, Pearlman 2016, Robertson 2017). Depending on how the journalists frame their experiences, they may gain cultural capital within the voluntary cyborg community for a positive story or gain cultural capital amongst other journalists for the lengths they will go to for a story — as mentioned by two journalists (Brown 2018, Collins 2015). Kristin Brown and Kate Collins, as well as three other journalists, wrote about how they had not planned on getting chips implanted; it just sort of happened. “Still, infected by the enthusiasm of all the grinders I’d met, I decided to give it a try” (Brown 2018). “It all happened somewhat by accident” (Collins 2015). “I couldn’t have predicted any of this, but that’s what happened, and here’s what I did” (Leipper 2016). “So right before we left, I decided to take the plunge as well. Anything once” (Matthews 2015). “It was just before midnight when I made the impulsive decision that would transform me into the world’s most useless cyborg” (Oberhaus 2018). One of the writers also implied he was not sober when he decided to get the implant done.

This lack of forethought regarding implants is a common enough trope amongst these journalists that there must be a reason for this impulsive framing of their experience. This passive approach to implants goes counter to the active approach prized by some members of the voluntary cyborg community yet must be of some import for 70% of the articles to be framed as impulsive. The authors may have framed their stories this way to downplay the significance of getting a chip implanted and to indicate to mainstream society that cyborg practices are innocuous. The impulsively-framed articles are full of self-deprecating humour to emphasize the frivolousness and novelty of the spontaneous decision to get an implant, that getting a subdermal chip results in nothing more than a good story of youthful shenanigans so the new cyborgs can be

excused from repercussions of any potential backlash from readers or others who learn of their implants.

The journalist who implied they had been drinking prior to getting their chip implanted in Las Vegas relied on the stereotype of “what happens in Vegas, stays in Vegas” to illustrate the flippancy and impulsiveness of their decision. The trope of how a visit to Vegas can result in a poorly thought-out or drunken decision is incredibly common — ziplining across the Strip, spontaneously getting a tattoo, or even getting married. Hollywood has made movies featuring the impulsive Vegas trope and the rhetorical device has become a cultural norm in Canada and the United States. The impulsive implants typecast may work for some journalists and voluntary cyborgs; however, the impulsive frame does not consider the importance and value some people place on getting their implants and the personal transformation of beginning to identify as a cyborg. The cliché of impulsive behaviour from young adults who are just going along with the cyborg crowd contradicts the conversations many voluntary cyborgs have had on the Biohack.me forum discussing the significance of the informed consent and planning necessary before getting their first implant as well as their sheer anticipation of becoming a new cyborg. The impulsivity frame erases the careful deliberation many people have put into their decision to get an implant.

In contrast to the impulsive approaches taken by the other journalists, Alex Pearlman and Adi Robertson both wrote articles detailing their deliberate decisions and purposes for their implants; both implants were magnets, and these implants involve more pain and healing time. The other journalists had chips implanted which are relatively simple to implant and not too gory to describe to mainstream audiences in comparison to magnets; there is little blood involved and no need for stitches, a simple bandage is enough to cover the puncture site. There is often fear and disgust associated with procedures that require a scalpel to open the meat suit and stitches to seal it back up; a squeamishness about certain body fluids is prevalent in the wider public but also with

some newer members of the voluntary cyborg community. Britton, who wrote her PhD dissertation on the grinder community and about a small group in Pittsburgh in particular, also wrote about her plans to have a magnet implanted in her finger during the course of her research but, for personal reasons, did not end up being able to go through with the procedure (2017, 77). Britton worried about the cost, pain, and healing time associated with the magnet despite having gone through much more intrusive and painful medical situations in the past (2017, 77-82). The ethnographic experiences of becoming practitioners of the area under study or being reported on reflect back to the earlier body modification literature describing the stigma associated with writing about becoming a modified body (Myers 1992, Pitts-Taylor 2007). Even among the initiated, there is still hesitation regarding some personal modifications and the impulsivity frame can be appropriated by new cyborgs as one way to reduce social or familial criticism of their carefully thought-out decision.

Cyborgs Mean Business – The Capitalist Cyborg Frame

Respectability, legitimacy, and power are often attributes attached to business owners in the social discourse of Canadians and Americans. It is a dream for many to be their own boss, to reap the rewards of their own efforts, and to answer to no one else in their work. Media stories featuring the entrepreneurs of tech start-ups like Apple, Microsoft, or Facebook romanticize the geeks or nerds as pioneers who were misunderstood tech geniuses and changed the course of human history with their business savvy while incidentally earning billions of dollars. Entrepreneurial dreamers are always looking for the next big thing that will alter society and maybe earn them billions of dollars too. For some, there can be no better frame for the few cyborg entrepreneurs than that of Neo-liberal free-market capitalism. Business owners pay taxes; they may employ other people in their community; they are upstanding, respectable, and, in the case of

tech start-ups, cutting-edge innovators. Journalists can easily employ this capitalist frame to show that cyborgs are not strange; they are just forward-thinking entrepreneurs who are cornering the market that others haven't recognized as existing yet.

This frame operates to cast cyborg practices as a business venture and the owners of these businesses as responsible, productive members of society to show there is some legitimacy in the practices of cyborgs. In a recent article on the website of *Fortune* magazine, the journalist used a lot of positive terms to frame the outlook for what they call biochips. "The incredibly promising business behind people injecting themselves with microchips" read the subheading (Walt 2019). Vivienne Walt went on to extol the possibilities for future investors of the cyborg industry, quoting projections of the "global biochip market" being worth more than seventeen billion dollars by 2020, just one year out from the article's publication date (Walt 2019). Walt also quotes several financial analysts who state that the market for these types of businesses will have a steep growth trajectory and become mainstream, enabling the entrepreneurs who get in now to reap the rewards of early adoption (2019). The framing in this article is so pro-business and pro-investment that even I felt left behind by not getting in on the opportunity while I could. It's a very effective frame to legitimize cyborg capitalism. A separate article from *Fast Company* in 2012 made the bold prediction that one day the cyborg start-ups will be compared to the early days of Microsoft, Google, and Apple (Ungerleider 2012) and utilizes the trope of all frustrated wannabe millionaires: "if only I had invested in those start-ups when I first heard of them."

There is a web-based company whose founder was an early member of the Biohack.me forum. Amal Graafstra is the founder of Dangerous Things, and he joined the Biohack.me forum in January 2013 where he announced he had started up his own webstore for implants and supplies. Graafstra implanted his first RFID chip in 2005 — one of the first to do so in the United States — wrote a book on the subject, and he has become very well-known within the voluntary

cyborg community and to journalists. He is often interviewed as a representative of the business side of the voluntary cyborg subculture and many times is carefully referred to as a CEO even though for much of its existence, it seems he has operated the company on his own. The Dangerous Things website is still up and running today and has recently incorporated a forum of its own into the site. Graafstra travels to various events around the world that relate to voluntary cyborg practices and interests where he sometimes speaks as a guest or where he sells and implants chips for curious cyborgs, making him an active recruiter for new members. One article from an *NBC* affiliate included financial data and customer statistics that demonstrate the growth of the voluntary cyborg subculture. Graafstra was quoted saying his “bootstrapped company” had sold over ten thousand RFID chips worth more than \$250,000 USD in 2014-2015 (Zaleski 2016). A more recent press release states that Graafstra “estimates that the number of individuals who have been chipped stands at around 100,000” (Redman 2019). Other articles quote Graafstra stating the estimate is between 50,000 and 100,000 implanted cyborgs (Grauer 2018), so there is some confusion over the exact numbers, but the cyborg market appears to be growing.

Commodification of subcultural practices and activities tends to occur as subcultures and members begin to age and mature (Hodkinson 2002, Woo 2012) into what Haenfler calls “scene careerists” (2014, 149). This may not be a characteristic that all members want to admit, but the commodification of voluntary cyborgs is here, appears to be succeeding, and is often touted in online media articles. The dichotomy of creation and commodification is significant as it pertains to the voluntary cyborg community. Not all future voluntary cyborgs are going to create their own body hacks; that aspect of the subculture will always be a small part of the overall group. Even now, I surmise there are far fewer people creating their own tech for implantations than there are purchasing ready-made implants. The people digging into their fingers in their basements in order

to become cyborgs is becoming a historical aspect of the subculture; new members are instead digging into their wallets for their credit cards to buy their way in.

Many active grinders on the Biohack.me forum often discuss amongst the group how they are focused on creating their own personalized implants, that they prefer to use open-source information-sharing sites, or they view business-owners as having sold-out to “the man” and have surrendered their independence to the capitalist structure of contemporary society. Yet at the same time, these same grinders also recommend to new wannabe cyborgs who lack the knowledge, ability, or time to create their own implants to buy them from cyborg capitalists. The cyborg capitalist frame operates in a dual fashion — it can give cyborg entrepreneurs a form of legitimacy with the public yet can negate or overshadow the efforts of the average voluntary cyborg who has not wanted to, or been able to, monetize their creations.

Cyborgs can have a complicated relationship with capitalism as a frame for their practices. There are the entrepreneurs mentioned above who are framed as the bleeding-edge innovators of the next big money-maker while at the same time some of these business-owners are helping other cyborgs transfer the chips from their credit and debit cards as well as transit passes into implants. These “hacked” chips are illegal or are in violation of the terms of service of the corporations that own the cards in Canada, the United States, and other countries such as Australia.⁵ The Dangerous Things shop sells chip implants that can store and spend cryptocurrencies such as Bitcoin; a

⁵ An Australian transit user had a chip from a transit card implanted into their hand for convenience and security as they had lost several other transit cards that had a lost-card surcharge. The Australian, Meow-Ludo Disco Gamma Meow-Meow (their legal name) was charged by the New South Wales transit authority for using public transport without a valid ticket and for not producing a ticket to transport officers (Griffiths 2018). Meow made press all over the world for the court case as well as Meow’s history of running for government two years previously, and probably for the oddity of their name. Meow’s case is one of the few known cyborg legal cases and while the magistrate agreed that while the technology is outpacing the legal system, the law of the day must be followed (Mayers 2018). Meow appealed and the conviction was overturned but still had to pay \$1,000 in legal costs while stating that “cyborg justice has been served” (Australian Associated Press 2018).

currency that some folks hope will be a precursor to a new economic system to replace capitalism as it stands today.

Cyborgs and the Law: Law as Innovation and Legal Dystopia Frames

The voluntary cyborg community operates in a legal grey area regarding technological implants, implant procedures, and the human body. Non-medically necessary surgeries are carefully regulated; non-medical grade implants cannot be inserted by medical professionals. RFID chips are considered an invasive technology, and the Federal Drug Administration agency of the United States considers them a Class II device and requires premarket approval before a company can offer them for sale to the general public (Krisch 2016). In Canada, the *Food and Drugs Act* regulates devices that have a therapeutic benefit when implanted and if these implanted devices have therapeutic or medical purposes, they then fall under the *Medical Device Regulations* of the *Act*. The chips and magnets offered for sale to Canadian cyborgs do not have a therapeutic purpose so are not subject to those regulations and often fall under provincial or city bylaws. In Ottawa, where I live and have had my implants done, body modification and piercing shops are regulated under Ontario's *Personal Service Setting Regulation 136/18* and shops are subject to inspection by Ottawa City Public Health Inspectors (Ottawa Public Health 2019). Currently, the few small businesses that offer RFID and NFC chips for sale in the US and Canada have disclaimers on their websites indicating the devices are not approved for human use in order to circumvent medical device classification.

WARNING This kit definitely contains dangerous things. While the xDF2 chip has undergone several quality checks during manufacture and has been put through a battery of tests, it has not been certified by any government regulatory agency for implantation or use inside the human body. Use of this device is strictly at your own risk. (Dangerousthings.com 2019)

In addition to mentioning the grey legal area that contemporary cyborgs face, media articles frame the legal aspect of cyborg implants in two other ways; the first illustrates the need for laws to be created to address a future that includes cyborgs with implants, and the second feeds on the fear that laws will need to be created to protect humans from enforced and involuntary chipping by the government or by their employers. The increase in the number of people who identify as cyborgs and claim that their implanted devices are a part of their body and identity will require changes to laws and policy regarding the devices, data generated from those devices, and protection from and restitution for damages to the implanted devices (Fleischfresser 2019, Wittes 2014). The legal acceptance of voluntary technology into the body can lead to better regulation and individuals' rights over all technologies in the body, including those of medical cyborgs. These articles frame cyborg law as one of innovation; because of new technology, outdated laws must be addressed. This frame is not confrontational or likely meant to inspire fear or worry in the readers but to reassure people that these issues are manageable as well as important and timely. This frame is one of calm; that a prudent and deliberate review of government policy will recognize cyborg issues of ownership, data retention and control, or other legal problems on the cyborg horizon (Fleischfresser 2019, Wittes 2014). The second frame is counter to this sense of calm and introspection and exploits many people's fears of technology being used for nefarious purposes.

Legal dystopia is the second frame that utilizes legal issues in the public cyborg discourse. This frame can be used to introduce fear alongside people's concerns about being forced to be "chipped" against their will. Some articles express concern that a future government administration may require all citizens to be chipped as a form of identification or tracking (Michael 2016) or that employers will force employees to get chipped or lose their jobs (Chumley 2018, Haney 2018, Holley 2018) in some dystopian, science-fictionalized prediction of the cyborg

future. The enforced microchipping as a requirement for employment is the most common frame of fear regarding cyborgs, and the stories began appearing in 2018 after a Wisconsin company offered their employees the option of a chip implant instead of using traditional security cards. According to the sensationalized articles that referenced this company, Three Square Market, eighty of the two hundred and fifty employees opted to receive the chip (Chumley 2018, Haney 2018) and conjectures that non-chipped employees will be viewed as less-desirable or that they are not team-players — a highly praised frame for employee hireability. This dystopian frame of fear can reaffirm some views of the public that they are constantly at risk of losing their jobs due to technological innovations. A common dystopian view of the future focuses on robots and automation taking jobs away from humans and leaving much of the population destitute and starving. Cyborgs are not as frequently mentioned in this dystopian view; however, more recent articles utilizing a frame of fear are positioning cyborgs as the precursor of this technological takeover of the economy using forced implantation of technology. As a result of these fears of involuntary implants, there have begun to be repercussions in the United States government.

There are statutes that have passed in different US states that prohibit the forced implantation of chips into unwilling people.⁶ One state recently went further and attempted to prohibit placing voluntary implants into one's own body. Nevada State Senate Committee recently debated an amendment to a bill that would make it illegal to forcefully or voluntarily implant a microchip in a human. The amendment to Assembly Bill 226 passed through the State Assembly with the objective of making all voluntary chip implants illegal but was revised prior to going to vote in the Senate, and the clause regarding voluntary implants was removed before the Bill was passed June 6, 2019 (Nevada State Assembly, 2019). Prior to the removal of the voluntary clause,

⁶ Arkansas, California, Missouri, Montana, Nevada, North Dakota, Oklahoma, and Wisconsin all have prohibitions against the mandatory implantation of a microchip (National Conference of State Legislatures 2019).

violation of the law could have resulted in a voluntary cyborg receiving a 5-year prison sentence or \$10,000 fine. One of the vocal members of the voluntary cyborg community, Anastasia Synn, is a resident of Nevada and attended the committee hearing in order to object to the inclusion of voluntary implants in the amendment (Dentzer 2019). The potential for governing bodies to outlaw voluntary body modification may become a reality. In the course of my research, I could not find any members of the voluntary cyborg community who have voiced the opinion that there should be forced or involuntary implants of any person. The freedom to choose implants is frequently the view that voluntary cyborgs try to share to mainstream society. The attempts to inform and educate the general public about voluntary cyborg practices and issues in a non-threatening manner are becoming more important and members of the voluntary cyborg community have been working on raising their voices.

The legal frames used in the cyborg media discourse often occur in articles from the United States as many highly-public voluntary cyborgs live in the US. The two exceptions that are frequently mentioned regarding cyborg legal issues are Neil Harbisson, a British citizen, and Dr. Steve Mann, a Canadian professor. Both men are labelled as cyborgs by journalists, although only Harbisson self-identifies as a cyborg, and both men have been confronted by strangers who have attempted to forcibly remove their implants and devices. Neil Harbisson is regularly called the world's first legally recognized cyborg (Donahue 2017, Fleischfresser 2019) as his British passport included his antenna in the photo. Government policy does not allow people to wear external technology such as eyeglasses or other cosmetic augmentations in passport photos, but Harbisson argued to have his antenna included as it is a part of his body, and after several attempts, he was allowed to do so (Harbisson 2012). Harbisson has had border agents and police officers attempt to remove the antennae attached to his skull that enables him to hear colour, as they don't understand what the antenna does, and the assumption is that Harbisson is filming the

officers or members of the public without their knowledge or consent. In 2012, police officers forcibly removed the camera from Harbisson's antenna after accusing him of filming a demonstration (Jeffries, 2014).

A similar occurrence happened to University of Toronto professor Steve Mann at a MacDonald's in Paris, also in 2012. Staff attempted to forcibly remove Dr. Mann's permanent digital eyeglass device. Mann has been wearing variations of the augmented glasses since the late 1970's and is often referred to as the father of wearable computing (Daubs 2012). Mann travels with a note from his doctor explaining that the device is permanently attached to his skull and requires specialized tools to remove it. One news site declared the attack in Paris as the "world's first cybernetic hate crime" (Dvorsky, 2012). In a reaction to these events and to mitigate future confrontations, cyborg activist Rich MacKinnon published his five-clause Cyborg Bill of Rights to raise awareness of cyborg issues now and in the future. The five clauses are: Freedom from Disassembly; Freedom of Morphology; Equality for Mutants; Right to Bodily Sovereignty; Right to Organic Naturalization (MacKinnon 2017). The clauses allow for cyborgs to decide what augmentations they want, don't want, and who owns the devices. The clauses also address issues of bodily sovereignty and protection from attacks such as the ones faced by Harbisson and Mann. The Cyborg Bill of Rights is not legally enforceable but is an attempt to make people aware of the possible rights cyborgs may demand or require if the dystopian fears of the cyborg future manifest in people with implants losing their rights as citizens of their countries.

This dystopian framing of the cyborg future is fascinating as each side claims to have greater reason to fear the lawless future of implantation. Non-implanted people fear they will lose their jobs if they don't get chipped or that they will lose all rights to privacy and be under constant surveillance and tracking because of forced government implants. These fears are not necessarily invalid, but the frame of fear does not offer solutions to prevent this vision of the future; it is often

assumed to be a fait accompli. Counter to this, on the forum and within other areas of the voluntary cyborg community, there are also fears that implant technologies will be taken over by the government or large corporations. However, these fears of government and corporate control of chipping are focused on the concern that the home-made or encrypted chips most cyborgs currently have implanted will subsequently become illegal. Community members also discuss their fears of attack or retribution from extremists who are so opposed to implants that they inflict bodily harm on cyborgs. There are conversation threads on Biohack.me from people who are contemplating implants asking for advice on ways to carefully inform their friends and family about the technology capabilities and limitation of the chips in their current incarnation to minimize negative reactions and repercussions. Responses from users vary; some say to provide technical specifications and emphasize the passivity of the chips to assure there is no way to be tracked or hacked while other commenters recommend not telling friends and family who may never understand why they chose to get a chip implanted. Some forum users state they have very religious family members who view chip implants as “the mark of the beast” and imply that getting a chip in one’s hand is a form of devil worship or a sign of impending biblical apocalypse. As a way to counter the dystopian frame to benefit both sides, the implanted and the non-implanted, some voluntary cyborgs attempt to use the media coverage to educate and reassure the public about the capabilities and functions of their chips; this is often one of the objectives of the cyborg advocates mentioned in the previous chapter. The next few years should be interesting to see if voluntary cyborgs are able to leverage the increasing media coverage to calm the public’s fears while simultaneously impressing potential new cyborgs or if the current dystopian fears of the future are too widely accepted to be overcome.

Man and Machine: The Technology as Masculine Frame

Imbalanced gender representations in cyborg practices are reproduced from the gendered power relations inherent in contemporary Western social institutions. The government, the education system, the legal system all are products of the historical and contemporary patriarchal influence on Western society and culture. Technology, then is socially constructed to be the purview of men propped up by the patriarchal history of the gendered power construction of society as coolly categorized in Judy Wajcman's feminist technoscience work (2010) or as feverishly condemned in Haraway's attempt to implode the zones of feminism and science from the control of "White Capitalist Patriarchy" (1988, 592, 1994). The accepted frame of cyborg technology is "Man and Machine"; never "Machine and Man" and most definitely never "Woman and Machine." This discourse frame of gender representation and technology has held firm over time, contrary to Wajcman's declaration that it is not immutable (2010, 150). Haraway's *A Cyborg Manifesto* would not still be studied, quoted, referenced, and in some ways, revered three decades later if women (and others) were not still marginalized in technoscience and the feminist cyborg still only existed as a social construct.

It is easy to see the emphasis on men and cyborg technology in a very basic gender analysis of the media articles discussing voluntary cyborgs. The literal phrase "Man and Machine" is commonly used to describe voluntary cyborgs in media articles (Brown 2018, Firger 2013, Fleischfresser 2019, Motherboard Staff 2013, Ungerleider 2012). *The Guardian* headline "When man meets metal: rise of the transhumans" (Adams 2017) reflects the prioritization of men in the community. I had thought, erroneously as it turns out, that most contemporary journalists were aware that gendered language choices don't represent their readers equally. Some articles do mention the gender disparity, often in just a short line or two, stating that the majority of practitioners tend to be white men (Abrams 2016, Brown 2018, Schmid 2018), but most articles

frame technology as the purview solely of men. This masculinization of technology reinforces and props up similar views of gender roles in mainstream society. Most articles discussing cyborgs ignore gender completely even when the only interview subjects are men; balanced gender representation is still a blind spot. This framing of technology as the territory of men is one of the ways that Butler's theory of identity as performativity is reproduced. The reproduction of these gender roles in technoscience contributes to the assumption that cyborgs are, by default, male, both in mainstream culture but also within the voluntary cyborg community. One exception is Rose Eveleth's 2016 article on the website *Splinter*, "Bodyhackers are all around you, they're called women."

Eveleth calls out the body modification communities for disregarding women's contributions to the acceptability of hacking one's body because, as she states, "technology is a thing that men do" (2016). People rarely blink twice if a woman mentions she has an implanted device to control her reproductive system but get squeamish or weirded out by the chip in her hand (Eveleth 2016). Women have dieted for decades, but men do intermittent fasting; women have tracked their monthly cycles since time immemorial, but when men started regularly tracking their body functions, they created the Quantified Self movement (Lupton 2016, 12). Eveleth calls it a "gendered separation" of technology and the acceptable uses of technology by women (2016). The examples that Eveleth uses to illustrate how women are the original bodyhackers are all forms of cosmetic alteration, not increasing their body's overall potential but about increasing their femininity and desirability for and on behalf of men. In addition to diet and monitoring fertility, Eveleth cited breast augmentation, corsets, and foot binding as ways women have hacked their bodies for centuries. I am not convinced that implanting RFID chips or magnets or other voluntary cyborg practices that some women are doing today can be put in the same category as Eveleth's gender separated technology; however, her observations of the gender disparity in the cyborg

community are valid criticisms. Her argument that having an IUD makes one a cyborg corresponds with my definition of medical cyborgs; it is a technological device implanted inside the body by a medical professional in order to provide a therapeutic or medical benefit. In this vein, what could be taken from Eveleth's statement is that technology is a thing that men do — and that women have done to them.

Framing men as active and women as passive actors in technoscience can be a form of exclusion for women or other marginalized people who may otherwise want to become active participants in the voluntary cyborg community. There have not been many discussions of gender issues on Biohack.me. The few times conversations have been attempted, self-identified male users have made their opinions clear that gender does not matter in hacking; everyone's welcome. It can be frustrating and tiring to read the handful of threads that discuss gender or sexuality and deviate from the straight, cis male perspective, especially if one is not a straight, cis male. There is no question that some members of the voluntary cyborg community have difficulty understanding the social reality of exclusionary practices faced by women, queer and trans people, people of colour, and other marginalized groups. These gender power dynamics in the community reflect the same issues present in mainstream culture, but that is not to say that gender and intersectionality issues should not be addressed within the voluntary cyborg community. However, race is not an issue that is addressed specifically on the forum, and so there is no way to include intersectionality issues in this analysis.

One thread titled, "Gender fluidity in biohacking?" brought out various opinions from fourteen individual users in thirty-five comments. It is conjecture to state that most of the community has similar thoughts as the majority of opinions stated in this single thread since there were so few respondents. Regardless, the conversation was included to examine how different members of the community grapple with gender issues. One user started the conversation as they

were curious if any members identify as gender fluid and if gender was or was not an important part of their identity (Romach 2016). The very first comment came from a self-identified cis male who wanted it to be known that they did not think there was a relationship between gender and biohacking at all. Other users agreed with that first commenter or conflated the concept of bisexuality and gender fluidity (Frin 2016a). Another user made the startling declaration that “people are universally equal” (Glark 2016b) without clarifying if that was a personal ideal or they believe it to be an accepted fact in society, but it came across as very dismissive of any person who feels they are not treated universally equal. The bulk of the comment thread came from users who did not identify as non-binary at all and reassured the rest that there was no reason to bring gender into the grinder community. The overall tone of the thread came across as incredibly patronizing and demeaning to people who might have expressed views contrary to these commenters.

There were two users who identified as non-binary in the comment thread, and both agreed that voluntary cyborg practices and the community are helpful or attractive to them because of their gender identity. The gender-fluid commenters on the thread were mostly in agreement that there is an attraction to the body modification movement since non-binary people are familiar with feeling uncomfortable in their meat suit and wanting to alter it in some way, similar to voluntary cyborgs who want to improve or change their body with technology. For some people, including non-binary, piercing, tattooing, and other forms of cosmetic body alterations satisfy the need to modify their bodies (Pitts 2003, Suchet 2009) while others go to more thorough forms of modification such as gender reassignment surgery. Non-binary and trans people would therefore fit quite logically into a community that focuses on body alteration for purposes besides medical rehabilitation and life preservation. Gender issues are not fully addressed in the voluntary cyborg subculture and while some members are accepting of women, non-binary, and queer people, there

is the possibility that the framing of technology as masculine can result in the exclusion of others. Expanding the practices of voluntary cyborgs to the general public would likely require less exclusionary tactics. Voluntary cyborgs may right now be focused on adding technology to their own bodies for personal reasons, but for these practices become more widespread, the variety of ways a person can be different from the recognised norm of the male or female body need to be accepted as well.

Summary

This chapter examined the various frames used to discuss cyborg issues in recent media articles about voluntary cyborgs. Each of the frames addresses larger social issues in media, mainstream society, and in the voluntary cyborg community but not all frames carry the same weight in the social discourse. Framing implants as an impulsive and foolish act is not the equivalent of the terrifying consequences of the legal dystopian frame portraying the future of humanity as nothing more than chipped automatons under control of a totalitarian government or as cyborg fugitives fearing violence and retribution from a non-implant, hardline populace that punishes those that are differently technologized. On the other hand, capitalist cyborgs are just trying to make some money and that's perfectly acceptable behaviour in Western society. Archetypal binary gender behaviours in society and the cyborg community are reinforced, replicated, and performed by cyborgs and non-cyborgs alike; these behaviours are expressed and strengthened by the framing of technology as a masculine pursuit that is prevalent in media articles. All the frames used in media articles are built from, expanded upon, and based on social and cultural ideals of gender roles, youthful impulsivity, Neo-liberal capitalism, and other social institutions and constructions. The performance of cyborg identity relies on these structures and frames to be comprehensible to outsiders and other cyborgs. After all, if no one knows how a

cyborg is supposed to act, then one cannot be a true cyborg. All identities, even cyborgian, require a schematic to replicate.

Conclusion – Will Cyborgs Survive their “Growing Pains?”

The research for this thesis began because of my fascination and curiosity surrounding the group of people I have come to label as voluntary cyborgs. In my research I wanted to explore an emergent subculture that is shocking and provocative, that seeks an integrated relationship with technology, but whose members are invisible to each other and the general public. I was interested in the internal dynamics of the group as they seek to be cohesive and effective as a community and the external dynamics of how this group communicates its practices, politics, and identity to the world at large. While I used subculture studies as the lens with which to read the group, my research became less focused on whether the group could be defined as a fully-formed subculture and more focused on how the group negotiates the elements of cohesion and identity that are frequently studied by subculture scholars. The voluntary cyborg community is struggling with certain features of group cohesion and identity and this struggle, both internal and external to the group, has proven to be quite fruitful and informative for analysis and discussion in this thesis.

Much of the group’s communication amongst members happens in digital, online platforms and because of this cyberspace restraint, the voluntary cyborg community can be described as language-based or discourse dependent. Yet for a group whose primary method of internal communication is grounded textually, members struggle with the cyborg lexicon. Disagreeing on how to name their practices and identities — are they grinders, body hackers, or cyborgs? Or the privilege given to specific forms of language in an attempt to provide clarity, yet at the same time, this specialized terminology acting as a barrier of entry for prospective members who don’t share the same educational background or experience. The self-styled steward of cyborgs proclaimed that speculation sucks and philosophical ponderings have no place in cyborg discussions; the same steward created a manifesto of general values that then transformed into a

guide of acceptable behaviours and shared ideals for members to commit to in order to identify as one of the group. Then there is the inexplicable and possibly pointless, yet with actual points, gamification of the Biohack.me forum that passed without conversation and seemingly with very little attention by members. The group truly appears to be struggling with aspects of coherency and, in some ways, is confusing to insiders; if the group's communications and actions are difficult to comprehend from the inside, then it is likely that these aspects of the group are nearly unintelligible to outsiders. Because I came to this research as a passionate insider, I had to reign in my desire to use my analysis to try to "fix" some of the issues in the community. It's hard to say if I will become a vocal and active member of the Biohack.me forum now that my research has been completed but it has been nearly irresistible to not ask some of the users *why* they are doing what they are doing in my attempt to analysis the messages on the forum.

The second part of my research was to examine if the voluntary cyborg community and their practices that are mentioned in media articles tend to be framed in certain ways so as be legible and logical to outsiders and if these frames have an effect on the internal group. The frames used in cyborg media articles have varying levels of importance or significance on the positioning and profiling of voluntary cyborgs and their practices. The two frames that were most surprising to me in the discourse analysis are at either end of the scale of potential cyborg significance — the Impulsive Implants frame is smaller in significance compared to the Legal Dystopia frame, but both were unexpected in how the two frames might be used to the benefit of voluntary cyborgs. At first glance both frames can be viewed as negative towards voluntary cyborg practices: the impulsivity frame brushes off the planning and forethought some people put into altering their bodies in anticipation of becoming a cyborg while the dystopian view of the cyborg future where laws are put in place that force everyone to be chipped for employment or tracking purposes obliterates the significance contemporary cyborgs give to informed consent and

the voluntary perspective of implanting technology for one's personal enhancement. However, after further consideration, I conclude that both frames could also be flipped to favourably support voluntary cyborgs and their practices to the mainstream culture.

Some people fear changes to society brought about by the introduction of new technologies. This is a common enough frame in conversations of technological innovations that it is becoming a trope — Neo-Luddite technophobes, late-adopters, or the happy and proud techno-illiterates are frequent stereotypes. The opposite of this technophobe, the eager technophile, is rarely discussed in conversations centered on fears of the dystopian cyborg future. However, internal cyborg conversations do discuss how to soothe the fears of technophobes to prevent ostracization or punishment for newly implanted cyborgs. One way to appease naysayers could be for the new cyborg to implement the impulsivity frame to highlight the trivialness of their implant — “it's not a big deal, it's the same as getting a tattoo or piercing.” This frame can be flipped for instances of minor pushback or significance; it would likely not be enough to counter more vehement opposition to implants. Opponents to chip implants often use the dystopian, science-fictionalized version of the future to denounce cyborgian practices. Forced chipping, pervasive surveillance, and other nightmarish visions of the future are used to position contemporary cyborgs as the first step on a slippery slope to the melodramatic end of humanity as we know it. Inverting this sensational and shocking frame however, introduces the vision of an enhanced human just trying to avoid violence or prejudice for their body modification practices and living their best cyborg life. It's an approach that can be used to highlight the tensions between the implanted and non-implanted that diverges from the archetypal dystopian predictions to show the mainstream why cyborgs may one day fear *them*. Frames for cyborg practices are just as context specific as any other form of positioning or stereotyping and are therefore vulnerable to varying interpretations by the audience.

There are some exciting and potentially contentious issues that could be expanded upon from the initial analysis in this thesis. Many people are uncomfortable with piercing the boundary of the skin to implant technology; what issues create or support that resistance to breaking the skin? I wonder if voluntary cyborgs and other body modifiers view the skin as a boundary at all and if not, why they don't. The skin appears to be a symbolic, and sometimes sacred, boundary for many people yet voluntary cyborgs gleefully slash through that flesh envelope and imbue their bodies with hard metal cosily snuggled within their soft tissue. It can be speculated that the recent proliferation of wearable devices is acclimatizing people to having technology nestled up against their skin, slowly becoming part of their body schema and that the eventual insertion of the tech may not be as far-fetched as some predict. Some believe that this insertion of technology is humanity's next leap forward into a transhumanist future.

There are various transhumanism ideals in contemporary society that focus on different issues that each transhumanist prioritizes in diverse ways. Some want to live longer, healthier lives and use nootropics or other minor body modification to increase their longevity by a decade or two. Others want to completely abolish death and propose humans can use technology to become practically immortal. Some do this by changing their biological makeup using CRISPR or genetic modification technology; one transhumanist, Liz Parrish, is attempting this by altering the telomeres of her DNA which she believes will add decades to her lifespan. Then there are others at the more extreme end of transhumanism like Tim Cannon who desire fully replacing their bodies with metal or other technology or uploading their consciousness to the internet and achieving immortality with machinery.

Transhumanism is an influence on many in the voluntary cyborg community and could be a subject on its own as the focus of future research projects. Not all voluntary cyborgs identify as a contemporary transhumanist, yet some transhumanist ideals are present within the voluntary

cyborg community. Longevity and improved healthy lives are common concerns and the discussion of how to become “better” humans, of using cyborg practices to become exceptional is frequent within certain areas of the community. There are some branches of transhumanism that have become political in nature — there is in fact a Transhumanist Party in the United States and one of its more vocal members, Zoltan Istvan, ran for US President in 2016. Some of the language used by various transhumanists regarding immortality and human exceptionalism can be problematic and raise concerns of transhumanist practices bordering on a new form of eugenics. Weeding out undesirably human traits or behaviours has a dark history in the world and having a group of people decide which traits or behaviours are acceptable is fraught with peril.

In this vein of the desire for human exceptionalism, there are echoes of the super-human, or Nietzsche’s *Übermensch*, stemming from the ideals of the Enlightenment and the belief that humanity should be working towards progress and individual excellence or transcendence. Individual progress or individual enlightenment is still seen as a social good or worthy goal in current society — one need only see all the self-help books and guides to be a “success,” or other forms of instruction from modern-day lifestyle gurus. These guides have proven popular in the transhumanist and body modification communities with the proliferation of “life hacks” or other shortcuts one may take on the road to enlightenment.⁷ There are those that argue however, that transhumanism is a thin disguise for removing undesirable characteristics from humanity under the aegis of individual transcendence of the body’s limitations. When practiced individually, transhumanism can be viewed as an acceptable practice; when viewed as a goal for all of humanity, transhumanism might be viewed as a new form of eugenics. Nick Bostrom, one of the

⁷ Bulletproof coffee from Dave Asprey or the concept of quantifying all of one’s activities as a form of individual gamification of the body as touted by the Quantified Self movement are current examples of “life hacks” for those striving for individual excellence. Deborah Lupton has published some excellent work recently discussing the Quantified Self group and the datafication of the body.

founders of the modern transhumanist group Humanity+ and a leading transhumanist philosopher, denies this stance as well as denying that transhumanism inherited attributes from Nietzsche's Übermensch (2005). Bostrom clarifies that transhumanism is the use of technology to improve the individual as an augmentation, not as a means to remove attributes of the human body, but to add to them. There has been some work done in this area of transhumanism, but much further study can still to be done to clarify the transhumanist movement, to understand the social significance of widespread augmentation, and how the voluntary cyborg subculture might be one step in the future of human augmentation.⁸

Voluntary cyborgs and transhumanists need to be aware of the privilege that many of the members possess and the language they use to describe their goals of a cyborg future. Able-bodied humans discussing and lamenting the limitations of the human body overlooks or trivializes the struggles of many differently-abled people to navigate the world without assistive technology. There have been discussions on the Biohack.me forum where members have made declarations that everyone is equal or that everyone has the same access to tech upgrades and these blanket statements are offensive and infuriating to those who in fact are not treated equally by law or by society and who do not have the same access to technology, education, or other privileges held by many in the transhumanist community. There is potential for future research where formal interviews could be done with members of the voluntary cyborg community to attempt to explain these transhumanist dreams of equality that appear to run counter to the lived experience of many both inside and outside the community.

⁸ Transhumanism scholarly works are being produced from a variety of disciplines: religion, medicine, ethics, sociology, and law to name a few. See Hansell and Grassie (eds), 2011 with contributions from Katherine Hayles, Nick Bostrom, Don Ihde, and more. See also Ferrando, 2013; McNamee and Edwards, 2006; Persson and Savulescu, 2010; Sorgner, 2009; Tirosh-Samuelson, 2012 for various perspectives on transhumanism.

Cyborg practices, to me, are not only about human exceptionalism; I hypothesize that some philosophical aspects of transhumanism can be employed to counter the impacts of anthropocentrism, or speciesism, that are concerns of environmentalists, activists, and scholars from multiple fields such as environmental studies, anthropology, ethics, and more.

Anthropocentrism, the belief that humans are *the* most important entity on the planet — if not the entire universe, is cited as one of the contributing factors of the negative effect humans have on the environment as we prioritize our own well-being and comfort over all other species or life forms on the planet. But there is the potential for some cyborg practices to introduce the idea that humans are but one more type of animal and not necessarily more deserving of special consideration than other life forms. My use of the controversial term “meat suit” is just one way to address the idea that one type of flesh is no more valuable than another.

A group of cyborg entrepreneurs who have been part of the voluntary cyborg community for close to a decade, the “scene careerists” of Haenfler’s subculture studies (2014, 149), have branched out their cyborg interests and research to implanting cyborg tech into livestock. Yes, we have cyborg cows now. The implants measure the health stats and biometrics of cattle that can be transmitted to the research lab. Illnesses, reproductive cycles, and other health data can be monitored in real time.⁹ The founder of the company is an acquaintance of mine and he joked with me that his company’s motto is, “Safe for animals; tested on humans” since most of the original group had all tested the implants on themselves before being modified for embedding in the cattle. But is that really just a joke? Could cyborg practices help put the treatment of animals ahead of, or equal to, the treatment of humans, or at least introduce the idea to the wider public? Perhaps cyborg cows will help humanity come to terms with sharing the planet with other species.

⁹ See www.embedivet.com for the technology of cyborg cattle.

Another area of future research of great interest for me are the issues surrounding the concept of body autonomy that are highlighted by voluntary cyborg practices. Issues of ownership of the body, the right to safe voluntary surgeries or implants, and ultimately, personal control and autonomy of one's body are all issues that are faced by voluntary cyborgs. Many voluntary cyborgs express surprise and irritation when doctors refuse to perform their implants or when they are told that they are not allowed to do what they wish with their bodies. It is mildly ironic that women and people of colour who have been fighting for body autonomy rights for decades may ultimately be assisted by a bunch of middle-class white dudes who, many for the first time, have been told "NO" when they want to alter their bodies. It will be interesting to see how this aspect of voluntary cyborgism develops and what influence the group may have on wider issues of body ownership and autonomy.

Future research into the voluntary cyborg subculture itself can provide further insight into the ways the community continues to navigate communication practices internally and to the outside world. A longitudinal study of the forum would provide a much more in-depth look at the community than this initial research was able to achieve. The Biohack.me forum is a rich depository and archive of opinions and views of the pioneers of the burgeoning voluntary cyborg movement, and future studies will contribute to the understanding of the community and its goals. This online community is a microcosm of the larger voluntary cyborg community that spreads its presence across various forums and social media platforms, and there are interesting comparison studies yet to be done of the wider community. My hope is that this thesis is just a starting point for the research yet to come and that it provides a foundation for others to build their work on. Cyborgs are here to stay, and they will continue to mold their bodies for the high-tech future they anticipate. And I will continue to participate in the voluntary cyborg subculture to find out just where, exactly, *is* my jet pack?

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