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ECOLOGIES OF SPONSORSHIP:
WHAT FITBIT USERS CAN TEACH US ABOUT DIGITAL LITERACY

By
Kimberly Tweedale

A DISSERTATION
Submitted in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY
In Rhetoric, Theory, and Culture

MICHIGAN TECHNOLOGICAL UNIVERSITY

2018

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This dissertation has been approved in partial fulfillment of the requirements for the Degree of DOCTOR OF PHILOSOPHY in Rhetoric, Theory, and Culture.

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Abstract

As digital technologies have expanded, so have the literacy sponsors that support and shape how those technologies are used. This project focuses on one of these growing sites of sponsorship surrounding a specific health-tracking technology: wearable Fitbit devices. While much of the work on literacy sponsorship has focused on institutional sponsors as agents, I argue that the picture becomes more complicated and interesting when we place our focus on how users—often considered the sponsored—can become agents in a system that may have marginalized, excluded, or used them.

Using a combination of qualitative methods, this dissertation highlights how various literacy sponsors create possibilities and constraints, how communities of users support and resist these frameworks, and how users can become digital literacy sponsors. This research maps the ecologies of sponsorship that Fitbit users engage in as both consumers and producers. The concept of “ecologies of sponsorship” is a unique contribution of this project, which expands traditional frameworks for understanding the stakeholders in literacy development to account for digital, networked environments.

In addition to typical tracking practices, this research found that significant groups of users “hack” the technology to help them work toward subversive goals. Some users reject the stated purposes of health-tracking technology, instead manipulating their data to create an illusion of health. Some of these users have shared their alternative goals and tactics in online communities, which allows them to become sponsors of metistic digital literacies. Rather than transforming Fitbit technology and ideologies of health through explicit hostility or force, this research explores how users developed metistic practices to subvert health-tracking systems from within.

Though this research focuses on the development of digital literacies in extra-curricular spaces, there are important implications for writing classrooms that aim to help students develop digital literacies. This research raises questions about how our classroom practices might shift if we add metistic literacies to frameworks that already support functional, critical, and rhetorical literacies. And by considering classroom-based teaching in the context of larger ecologies of sponsorship, this research highlights a need for new pedagogical practices that account for the distributed nature of technological expertise.

1 Introduction and Review of Literature

Throughout this research, I've had the opportunity to talk with many people about their experiences with Fitbit. These conversations happened in formal research spaces, but also in hallways, around kitchen tables, on airplanes, and over social media. When people heard I was interested in health-tracking technology, they all seemed to have stories to share.

One of these users, Alex, told me about the ways Fitbit fit (and didn't) into his life, and I'd like to begin this chapter by sharing part of his story. In 2016, Alex expressed interest in trying a Fitbit, since other members of his immediate family used them, and he was interested in tracking certain information, like his heart rate, after he'd been placed on new medications. He got his first Fitbit that same year for his birthday, and started using it immediately.

Alex had no doubts about his ability to learn how to make this technology work for him. He was an early adopter of home computers in the early 1990s, and he'd always had a curious fascination with digital technologies. However, he did not own a smartphone, and had no intention of getting one. As it turns out, the wearable Fitbit tracker did not function on its own in the same way that it would have as part of a larger network of digital technologies, including a smartphone with the Bluetooth-synced Fitbit app. The newer Fitbit model did not come with the "dongle" standard in previous versions, which links a computer to the Fitbit and regularly syncs data to the Fitbit interface. Even after purchasing this accessory separately, Alex found it cumbersome to remember to sync the data to his computer, and read that data from the Fitbit website (since his computer would not support the Windows Fitbit program).

After a few months of struggling to make Fitbit work in his particular context of use, Alex became frustrated and concluded that Fitbit was not meant for him, or people like him. He started wearing the device less and less. He would forget to charge it when the battery died, and he eventually abandoned it as an everyday wearable technology. For Alex, the most popular and "usable" wearable health-tracker was not usable at all.

It was not that Alex did not have any or all of the literacy skills needed to adopt this technology. He was proficient with computers, and enjoyed spending time on the internet and communicating with others in digital spaces. He was an avid reader and had an expansive Kindle library that he read from digitally. He also had good numeracy and visual skills, and enjoyed solving complex tasks. He explained to me that he recently redesigned his home kitchen, and used a graphing program to plan the new layout and design custom cabinets to fit the new space.

At 58, Alex is not what we might consider a digital native, but most would agree that he is literate, and even digitally literate: he uses technology to accomplish many of his goals. However, Alex's experience with Fitbit reminds us that digital technologies have changed what it means to practice literacy in the 21st Century. Digital literacies require a

networked set of skills and access that extend beyond any specific technology. His experience with this health-tracking technology did not break down in the Fitbit itself. Instead, it broke down in the access to the network of technology needed to make Fitbit function in its most ideal form.

There is something unique about digital, networked technologies that drive themselves and their associated literacy practices forward through rapid technological development, persistent marketing efforts, and the adoption and modification of these technologies by users (Yancey, 2014). As the number and kinds of digital technologies have grown, so have the literacy sponsors that support and shape how these technologies are used. This project focuses on these growing sites of sponsorship in order to investigate how users come to understand themselves and their digital literacies through their use of one type of health-tracking technology: wearable Fitbit devices.

Since our identities are increasingly tied to perceptions of our health (Segal, 2005), a growing market has developed for wearable health tracking devices. Many users have embraced these technologies and are actively consuming, producing, and circulating a wide range of documentation about their trackers. As these users engage in the technological system of health tracking, they draw on a variety of digital literacies that impact what they do and how they understand their experiences.

In this chapter I will explore the contexts in which this project is situated. Specifically, I will explore the quantification of health and the formation of a technological system of health tracking (1.1). I will then review the digital turn in literacies studies, focusing on the development of terms like “multiliteracies” and the frameworks that support these literacies (1.2). Finally, I will propose “metistic literacy” as an addition to these frameworks for studying the digital literacies associated with wearable health-tracking technologies (1.3).

1.1 The Rhetoric of (Digital) Health

Building on the work of Kuhn (2012) and Winner (2010) who have highlighted the rhetorical and political nature of science and technology, scholars in the rhetoric of health and medicine have explored the ways that persuasion and meaning are created in health-related contexts. In *Health and the Rhetoric of Medicine*, Segal (2005) argues that rhetorical analysis can help illuminate some of the persuasive functions of medicine and healthcare. According to Segal, “medicine is not only rhetorical as it is reproduced in published texts; it is also rhetorical as a system of norms and values operating discursively in doctor-patient interviews, in conversations in hospital corridors, in public debate on health policy, and in the apparatus of disease classification” (Kindle Location 56). This project considers the rhetoric of health in this context, as it functions to establish norms and values, but focuses on the digital spaces where this rhetorical production is taking place.

1.1.1 Quantified Health

Looking to users as both producers and consumers in the rhetoric of health is especially important in this moment when users are increasingly quantifying their health through digital technologies. As Segal (2005) has observed, “we equip our homes with the technologies of home diagnostics” (Kindle Location 1615), and these systems rely heavily on translating our experiences into numbers. The widespread adoption of wearable health-tracking technologies like Fitbit has only made this phenomenon more common. Now, these monitoring technologies are not only focused on the diagnosis and management of chronic conditions, the way that blood glucose and blood pressure monitors have traditionally been used. Instead, these technologies are being used as a form of preventative healthcare. Health and representations of health have become the mark of productive citizenship, and health is increasingly being constructed as an individual responsibility (Owens & Cribb, 2017). This also means that guilt and shame have become powerful motivators for pressuring people to take control of their health.

Because our identities and sense of self-worth are often tied to our health or the appearance of health (Segal, 2005, p. 304), users have welcomed technology that promises them agency. As of 2016, users had purchased approximately 110 million wearable trackers (Neff & Nafus, 2016, p. 1). This means that in 2016, one in ten Americans owned at least one wearable health-tracking device (Rettberg, 2014, p. 62). Sales projections indicate that these numbers will continue to grow. Forbes predicts that by 2020, companies will have sold 274 million of these devices worldwide (Fereidooni et. al., 2017). And Fitbit is the global leader in these figures, beating the combined sales of its three main competitors—Apple, Garmin, and Samsung—in 2016 (Fereidooni et. al., 2017).

While the popularity of devices like Fitbit trackers has had a major impact on the self-tracking movement, it’s important to note that the movement toward quantifying the body did not begin with the proliferation of these wearable devices. The move toward quantification is part of what Crawford, Lingel, & Karppi (2015) describe as the “quantified self” movement. These scholars explain that the impulse to understand our health through numbers has been around for generations. For example, the home bathroom scale offered the same promise, that “data will bestow self-knowledge” (p. 480) and lead to happier, better lives. The increasing use of wearable health-trackers has only increased the cultural visibility of these promises. After all, the claim that “data leads to knowledge leads to change” (Neff & Nafus, 2016, p. 55) is seductive.

There has also recently been a push to ensure the “correctness and authenticity” (Fereidooni et. al., 2017, p. 2) of Fitbit metrics. Because the data collected by these trackers is now being used by third-party apps and organizations, there is increasing pressure on the companies to verify that their data collection is both valid and reliable. For example, certain health insurance companies, like Vitality and Optima Health, are now offering lower premiums to some customers who meet activity benchmarks as measured through a wearable tracker (Owens & Cribb, 2017). In fact, approximately 13

million of these trackers are being used in corporate wellness programs (Neff & Nafus, 2016, p. 129). In addition to insurance companies and corporations, a number of websites and apps, such as Achievemint, are offering financial compensation for activity, provided that users share their data.

This has led to what Lupton (2014) identifies as the expanded modes of self-tracking, which include personal, pushed, communal, imposed, and exploited self-tracking. Within this framework, personal self-tracking is the self-motivated collection of personal, private data. This is the primary type of data collection in the quantified self movement, and it shapes most marketing for wearable fitness trackers. Messages like “Fitbit motivates you to reach your health and fitness goals by tracking your activity, exercise, sleep, weight and more” (Fitbit, 2017) appear front and center on the websites for these trackers. The user, “you,” is at the center of most of these statements.

Lupton (2014) contrasts personal self tracking with pushed self-tracking, where the motivation to track personal information is external. This includes circumstances where users track their data to comply with a medical professional’s recommendation, because they feel pressure from family or friends, or because they want to earn financial incentives. For example, Neff & Nafus (2016) found that adults are 57 percent more likely to wear a health-tracking device if they are offered incentives from their insurance companies. It’s important to note in these cases that while the user may not have independently decided to purchase a tracker, they are free to discontinue use at any time.

Lupton presents a third, more social form of voluntary self tracking called communal self-tracking. This kind of behavior is common for groups like runners who posts their statistics on social media, or users in online support groups who help each other manage chronic conditions. This is becoming more common, as online patient communities are growing in number and visibility (Arduser, 2017, Kindle Location 225). In these cases, user goals may not be related to better understanding their health. Instead, the goal is often to form a sense of community through collecting and sharing data.

In contrast, imposed self-tracking practices are not self-motivated at all, and the user is often not presented with a choice. In these cases, the goals and benefits are not centered on the individual. Unfortunately, this is becoming more common. For example, some schools are now using heart rate monitors in physical education classes to determine student effort (Lupton, 2014). Students are not in a position to decline self-monitoring in these situations, and they do not directly benefit from their data collection. Instead, the tracking is being imposed on them.

Finally, Lupton identifies exploited self-tracking to explain how users’ data is frequently sold, circulated, and re-purposed without their knowledge or consent. Because HIPAA applies only the health-related data collected in traditional medical settings, there are few protections offered for health data collected through wearable technologies (Neff & Nafus, 2016, p. 133). This means that health-tracking companies frequently own users’ data and can freely distribute that information, especially in aggregated forms. There is a

significant market for this data, because "data is seen as a valuable general-purpose resource to stockpile—'the new oil' that might one day serve multiple, potential purposes" (Neff & Nafus, 2016, p. 114). At this point, there's not much users can do to prevent this exploited tracking, which raises important ethical concerns surrounding the use of these fitness trackers.

Each of these modes of self-tracking attempts to benefit from the wide range of data easily available through wearable health-tracking devices. However, the distinction between data and information is crucial in this context. This is critical when we start to think about ourselves as primarily defined by our data, a phenomenon Rettberg (2014) describes as "dataism" (p. 62). Data includes the raw numbers logged by these kinds of trackers.

For example, a simple pedometer will record the number of times a small, movable ball inside the casing hits an internal barrier. This is output as data, perhaps reading "6578" at the end of a day. The user then interprets that data and tries to turn it into actionable information about him- or herself. For example, they might read that number and infer that they had taken 6,578 steps that day, which is less than the 10,000 recommended by the American Heart Association. That same user might then decide they need to add a walk to their schedule for the next day to improve their activity measurements. This is a simple example, but most current health-trackers provide a wealth of this type of data, and we need appropriate frames for understanding the meaning of that data. Even when the validity of our explanatory frameworks is unclear (for example, the US is one of the only countries that uses 10,000 steps per day steps as the recommended measure of physical activity, while most others use minutes of cardiac activity as the recommendation measure), we are driven to turn this data into information that we can use.

In fact, that's one of Fitbit's major selling points. Users are willing to pay up to hundreds of dollars for these data-producing devices because they often believe trackers will help them improve their health. However, Owens and Cribb (2017) contend that "in isolation, these technologies do little to provide substantive opportunities to act and achieve better health. As a consequence, wearable technologies risk generating burdens of anxiety and stigma for their users and reproducing existing health inequalities" (p. 1). This might be why so many users purchase a tracker, then quit using it. According to Rettberg (2014), "once we have personal, quantified data about ourselves, we look at it and we interpret it. We use the data to adjust the stories we already tell ourselves about our lives, and we use our stories about our lives to adjust, excuse or understand our data" (p. 73). If these stories lead to more anxiety and few visible health benefits, users are more inclined to abandon their devices. This highlights the importance of understanding how users and institutions make meaning from this data, and how those meanings impact the use of these technologies.

In a recent collection of scholarship considering wearable technologies, Gouge & Jones (2016) argue that the increasing popularity of the quantified self movement through

wearables “provides an important and timely opportunity for rhetorical scholars to reexamine rhetorics of technology and the body as well as the impact on emergent rhetorical situations precipitated by wearable devices” (p. 201). One scholar contributing to that collection, Jordynn Jack (2016), argued in the context of her research on breast pumps that “a study of wearable technology should consider its actual use in practice and should not limit itself to the study of how technologies are developed and advertised” (p. 208). Meaning-making happens at least partly through use, so our analyses must look to those sites of use and incorporate the knowledge and experience of users. The following section highlights the importance of user experience by presenting these health-tracking technologies as part of a technological system, then arguing that this system needs to shift from system-centered to user-centered.

1.1.2 Technological Systems of Health Tracking

According to Johnson (1998), most of what we consider modern technology is system-centered, or created and maintained under a model of technology that focuses on “the artifact or system as primary, and on the notion that the inventors or developers of the technology know best its design, dissemination, and intended use” (p. 25). Within this system, a clear hierarchy is created between experts (the creators) and novices (the users). It also assumes that systems of technologies operate in rational, a-rhetorical, and a-political ways.

However, the very process of using practices, documentation, and technology to maintain that system is both rhetorical and political. For example, Seigel examines how the technological system of prenatal care is maintained through system-centered practices. Seigel (2013) argues that prenatal documentation frequently tries to accommodate users to the system, rather than creating a system that accommodates itself to the users. Seigel further identifies multiple ways that documentation can relate to a system: system constitutive, system maintaining, system disrupting, and system simulating.

System constitutive documentation is often developed early in a technological system’s lifespan, and its purpose is to “persuade users to help establish an emergent technological system” (Seigel, 2013, p. 32). This functions differently than system maintaining documentation, which is used once a system has been firmly established. This is what looks most like traditional technical writing, where “procedures are phrased as commands, instruction is task oriented, and the objective of instruction is to stay out of the way of users being able quickly and efficiently to complete the task at hand” (p. 71). The purpose of system maintaining documentation is to maintain the status quo and encourage user engagement with a system while discouraging any critique of that system.

System disrupting documents do exactly the opposite: they disrupt the status quo. These documents make features of the system visible and available for questioning. This type of documentation might “help a user to manipulate parts of the system, negotiate the system, or change the system even in a small, local way” (Seigel, 2013, p. 74). This often takes the form of questioning the implied “ideal” user and assumed goals of users.

The last type of documentation that Seigel identifies is system simulating, where “engagement with the documentation is more important than engagement with the system that it documents” (p. 33). In this case, getting clicks and views is the goal, rather than creating any specific impact on the technological system. Seigel notes that this type of documentation has the potential to be transformative, but often is not.

Based on her analysis of specific documentation, Seigel (2013) makes the following observation:

The technological system of prenatal care is system centered rather than user centered: it is to be modeled according to the needs and expectations of its designers (the obstetricians, in this case) rather than according to the needs and expectations of its users (the pregnant women). Its primary goal is not to improve the health or comfort of its users (although these are important secondary goals) but to improve national health and to provide system designers with information about the mechanisms and pathologies of pregnancy. In fact, we might better conceive of pregnant women as components of this system rather than users of it—their bodies are necessary for its proper functioning (p. 40).

As Seigel notes, much of the documentation surrounding pregnancy and prenatal care—along with other systems of health—assumes that users only want to learn how to engage on a functional level with those systems. This also means that users are not given much space to “cunningly negotiate, critique, or transform” (p. 19) those systems.

This highlights one of the dangers of a system-centered understanding of health-related technologies: certain choices made to support that system can be seen as inevitable, reducing choices about technology to an ethics of expediency (Fogg, 2002). Katz coined the phrase “ethics of expediency” to describe writing where the “focus is on expediency, on technical criteria as a means to an end” (Katz, 1992), and where the appearance of objectivity is valued over considerations of purpose, potential uses, and danger or harm. In other words, this ethic defined “good” design as not connected to the needs and goals of users, but instead to how effectively the choices will maintain and allow the system to continue functioning without disruption. Efficiency is the value that is driving this perspective, which compares costs to benefits (Tiles & Oberdiek, 2013).

Missing is the critical reflection on these costs and benefits: Who benefits? Who feels the costs? These are crucial questions because the ethics of expediency can be a powerful force, and technological systems can become more difficult to change once established. While technologies have some initial flexibility as they are implemented, systems and infrastructure become more rigid over time “because choices tend to become strongly fixed in material equipment, economic investment, and social habit” (Winner, 2010, Kindle Location 672). This makes reflection a key concern in the design and used of technological systems, including health-tracking systems.

User-centered technology is one approach to building this reflection into the process of technology creation and revision. User-centered technology is a framework that positions users as a central force in shaping technology. Johnson (1998) has argued that “users are producers of knowledge, but their modes of production have been rendered invisible by those modern cultural proclivities that subordinate the user to being a mere practitioner” (p. 57). By privileging the expertise of the creators of technology, we risk missing the potentials that come with the vast and varied “knowledge of the mundane” (p. 6) that users accumulate through everyday practice. Johnson argues that we need to build these knowledges into the production of technology itself.

This is especially important in studies of health, because the stakes are high for users in these systems, and it’s becoming more difficult to opt-out of health-tracking. For example, the proprietary Apple “Health” app comes preloaded on the iPhone 6s and newer. Data like steps and distance are automatically collected through a motion sensor and GPS for any iPhone running iOS 8 or newer (Apple, 2017). Users can turn off this automatic tracking, but the control is buried three pages deep in the settings menu, and not accessible directly through the Health app, where that data is displayed. Many users could be unaware that their data is even being collected, and most are probably not sure how this data is being used.

For users, navigating these health-tracking systems requires nuanced skills and critical awareness. While almost anyone could use a Fitbit by strapping it to their body, it’s not easy for those same users to understand what they could do with that device, the range of data that might be produced, how to make sense of that data, and the systems they are implicated in through the circulation of their data. Therefore, thinking about these technologies in the context of multiliteracies scholarship adds to these conversations about the technological system of health tracking.

1.2 Digital Literacies

Wearable health-tracking technologies are only one example of the rapid technological development we’ve seen since the rise of the personal computer. The use of digital communication technologies has been also rising, due in part to the availability of internet-connected devices like computers, tablets, and smartphones. This has resulted in the increasing visibility of a writing public, where everyday citizens are more likely to write (and make that writing public) outside of the context of work or school (Yancey, 2014). As new platforms for technology-mediated public discourse are being developed and embraced in popular culture, the ways that people are reading and writing are also changing. As Hull and Nelson (2014) have noted, “what counts as a text and what counts as reading and writing are changing—indeed, have already changed and radically so—in this age of digitally afforded multimodality” (p. 457). This echoes Hull’s (2003) claims elsewhere that our “most urgent need [is] to expand our conception of what it means to be fully literate in new times” (p. 230).

These digital literacies are important for Fitbit users, who frequently encounter, consume, produce, and share a variety of multimodal texts about their trackers and their health data. This project considers this digital turn in literacies studies—and the new frameworks of literacy development that have come with it—to understand how Fitbit users build the skills and knowledges they need to navigate this system and reach their goals.

1.2.1 The Digital Turn

The rapid development of digital technologies has created a compelling exigence for literacy scholars to look beyond the bounds of the strictly alphabetic. This sense of urgency in understanding the relationship between technology and literacy is part of what Mills (2010) has called the “digital turn” in literacies studies, which he characterizes as the “increased attention to new literacy practices in digital environments across a variety of social contexts” (p. 246).

While this shift in the focus of researchers and scholars has happened fairly recently, it is important to note that there is no single moment when literacies became multimodal; in fact, some have argued that literacy and communication have always been visual (Murray, 2014), aural (Selfe, 2009), and multimodal (Shipka, 2005). However, we can trace this shift in our thinking and our vocabulary surrounding literacy in the field of rhetoric and composition to the end of the 20th century. In 1996, the New London Group, a collaborative team of scholars, came together to “consider the state and future of literacy pedagogy” (Cope & Kalantzis, 2009, p. 1) in a manifesto titled “A Pedagogy of Multiliteracies: Designing Social Futures.” In this article, the New London Group argued that we need to conceive of and help students develop a broader kind of literacy that moves beyond print-based text.

According to Shipka (2005), this digital turn was brought into mainstream composition studies by Yancey’s CCCC Chair’s Address in 2004 titled “Made Not Only in Words: Composition in a New Key.” In this address, Yancey claims that “for compositionists, of this time and of this place, this moment—this moment right now—is like none other” (p. 62). With the increasing push for definitions of literacy to shift and include digital technologies and their role in writing, Yancey saw that “literacy today is in the midst of a tectonic change” (p. 63).

In the eight years between the New London Group’s manifesto and Yancey’s CCCC address, the Humanities’ interest in technology lagged somewhat behind national technology initiatives. There was disciplinary silence from the Humanities leading up to and directly following the Clinton administration’s push to bridge the digital divide in America (Selfe, 1999). In this campaign, a long-held literacy myth was being transferred to computer-based initiatives, bringing with it the “widely held belief that literacy and literacy education lead autonomously, automatically, and directly to liberation, personal success, or economic prosperity” (p. 420). In this national climate that favored the uncritical adoption of the newest technologies, writing scholars and teachers were forced

to either accept the technological literacy standards being handed to them from others, or they could develop their own theories and standards.

It is out of this disciplinary push for agency in the development of technology that the digital turn took hold, and a critical mass of writing scholars and teachers began to examine the relationship between literacy and technology. Without this step, the movement toward understanding what multiliteracies are and how they develop would not have been taken up by so many scholars in the decades following the New London Group's manifesto.

For example, a number of scholars have offered definitions and characteristics that aim to identify what counts as multimodal composition. While it is most simply the act of using more than one semiotic mode together (Kress and van Leeuwen, 2001), definitions and descriptions have been expanded to include additional characteristics. Multimodality has been described as “not simply an additive art” (Hull and Nelson, 2013, p. 457), but a process that is transcendent rather than additive, occurring through a process of “braiding” and “orchestration” (p. 457). The features of “new literacies” have been characterized as involving the hybrid mixing of different textual practices, production with digital media, and collaborative work within online communities (Mills, 2010). In addition, some have argued that “the term new media is typically reserved for practices that are purely digital, such as digital video, digital animation, web pages, virtual reality, etc.” (Sheridan, Ridolfo & Michel, 2012, p. 33), and multimodal composition has been defined as the “purposeful uptake, transformation, incorporation, combination, juxtaposition, and even three-dimensional layering of words and visuals—as well as textures, sounds, scents, and even tastes” (Shipka, 2005, p. 279).

Defining multiliteracies was just the beginning: scholars have been developing multiliteracies theories and pedagogies for decades. In the past 20 years, literacy and writing studies have embraced the idea that “design is just another word for composition” (Murray, 2014, p. 334) and writers in the 21st Century might be better understood as designers whose job will consist of “putting together with intent” (p. 334). Hull and Nelson (2014) emphasize the role of design in composition, writing that “it is obvious how useful the notion of design can become as a way to conceptualize the suddenly increased array of choices about semiotic features that an author confronts” (p. 460). In other words, as we shift from a primarily text-based understanding of authorship, design becomes a way to theorize and understand how to use not only text but other modes and media as well.

Design is also a way to think about how norms and standards have emerged within new media productions. Wysocki (2014) in particular has focused on ways of identifying potentials and constraints in media, and understanding what might be inherent to that media and what might be socially constructed around it. She writes, “we can see what beliefs and constraints are held within readily available, conventionalized design” (p. 307). Because creating within this design framework involves starting from “available designs,” Wysocki reminds us that what is available is only a portion of what might be

possible, and many of our constraints have been socially constructed through patterns of use and design. Further, Hull and Nelson (2014) argue that “it is through an informed, intentional process of design on the part of the individuals, making creative use of available preexisting designs and resources, that meanings, selves, and communities are powerfully made and remade” (p. 460). This makes multimodal composition a profoundly humanistic activity, and makes a case that new, subversive, creative potentials can be developed within a system even as conventional designs provide significant constraints.

Regardless of the different ways that administrators, programs, and teachers have built pedagogies that support design, one value remains consistent: that we must prepare students to engage critically and rhetorically with communication technologies, because functional skills are not enough. As Selfe (1999) has stated, if we “require students to use computers in completing a range of assignments—without also providing them the time and opportunity to explore the complex issues that surround technology and technological use in substantive ways—we may, without realizing it, be contributing to the education of citizens who are habituated to technology use but have little critical awareness about, or understanding of, the complex relationships between humans, machines, and the cultural contexts within which the two interact” (p. 432). If we want to help students become designers and not just users of technology, this reflective component must be built into our pedagogies from the start, or—as DeVoss, Cushman, and Grabill (2014) have argued—before the act of composing ever begins.

For DeVoss, Cushman, and Grabill (2014), infrastructures are the systems—technological, social, and otherwise—in which communication takes place, and we need to be especially attentive to the ways that our institutions shape our possibilities. One major concern raised by these scholars is the possibility that users can be seen as threats to a system. They argue that we must acknowledge and potentially resist systems where our ideas and goals must be accommodated to fit the infrastructural constraints. Instead, we need to consider multiliteracies in conjunction with the infrastructures meant to support them and look early and often to how these systems are supporting or constraining design.

Considering infrastructure in this way supports what Selfe (1999) proposed as “a situated knowledges approach to paying attention” (p. 430) that might allow us to intervene and shape conversations around technologies more thoughtfully and ethically. This approach means that we are obligated to pay attention to “how technology is now inextricably linked to literacy and literacy education in this country” (p. 414). Though Selfe made these claims at the very beginning of the digital turn, they resonate in the current context of health tracking technologies. These technological systems are complex, and they are inextricably connected to issues of access and ethics.

This digital turn taught literacy scholars that we should not unquestioningly adopt new and emergent technologies. Instead, we need to pay attention to how literacy is being enacted and understood in multiple locations and for multiple purposes; at the same time,

we must be critical of the social role of technology and literacy practices in reflecting and shaping the realities of their users. Technology is not simply a tool that we can either choose to use or ignore, and literacies studies needs to continue to adapt to the changing landscape of communication. One concrete way to address this complexity is with Selber's (2004) framework of functional, critical, and rhetorical literacies.

1.2.2 Functional, Critical, and Rhetorical Literacies

In his book *Multiliteracies for a Digital Age*, Stuart Selber (2004) argues that it is the responsibility of scholars in the humanities to foster critical thinking and support digital literacy development. He presents this argument in the context of computers and writing classrooms, developing a framework of functional, critical, and rhetorical literacies that are crucial for preparing students to engage meaningfully with technology. In this framework, functional literacy develops first, and involves primarily "the ability to do small, measurable things" (p. 34). This can develop into critical literacy, which requires that users are able to "recognize and question the politics of computers" (p. 75). Finally, rhetorical literacy involves a shift from consuming to producing. Selber argues that effective multiliteracies development allows users to move through these different roles and practices fluidly to best suite their immediate needs and goals. I would argue that the importance of this work has only grown with the increased acceptance of digital technologies into nearly every aspect of our lives, including our health.

In the context of this project, we can think about functional literacies as the ability to interact with technology in the ways required to create, produce, consume, and share with that technology. We also need to consider functional access, or the extent to which users are able to access and use a technology (Seigel, 2013). Access is only one of many conditions in the development of functional literacies. However, educational systems have worked hard to increase functional access and assess functional literacies, specifically for computers and the internet.

As Selber (2004) has noted, there is a problematic history of functional literacies being the focus in educational context because they were easy to assess. For example, it's easier to judge whether or not a student knows how to merge two images in Photoshop than it is to assess how well they understand how that activity fits into the social and political context of tools like Photoshop. In some ways, this is seen as the grammar instruction of technological literacies, which comes with understandable critique. There are important social consequences when functional, decontextualized, skills-based training is used to create a minimally-skilled, uncritical workforce for the growing technology market.

However, Selber (2004) rightly notes that we cannot ignore functional literacies in the pursuit of more critical engagements with technology. After all, "functional literacy is a necessary if not sufficient condition of all other forms of literacy" (p. 33). For example, Rettberg (2014) has noted in the context of wearable technology that users "don't need to be able to program to use an activity tracker or a lifelogging app, but certainly the most engaging examples of quantitative self-representation are produced by people who know

how to access and manipulate their data, and also have the graphic design skills to present it in an appealing and effective way” (p. 11). Without understanding the functionality of technology, users are severely limited in what they might do with their data. This demonstrates that we cannot avoid thinking about technologies as tools, to some extent. The key, however, is to draw connections between functional and critical literacies, which complicates our engagement with and understanding of these technologies.

Critical literacies are crucial for understanding technologies within their socio-political contexts. However, critical access to technological systems is more problematic than functional access. Critical access allows space for users to become conscious of if, how, and why they act in a technological system (Seigel, 2013). Users within these systems are often expected to use technology simply because it is available, regardless of that technology’s ability to meet their needs and goals. Addressing these challenges requires critical literacies, which Selber (2004) presents as the ability to question technologies and the political and ideological forces that are built into them. This positions technologies as “cultural artifacts” (p. 75) that are embedded with “biases, power moves, and human implications” (p. 86).

Critical questioning of technology is frequently taken up to consider how under-represented groups like women and racial minorities are excluded from the process technological development. For example, Brady (2003) argues that “gendered labor has often implicitly biased the design of machinery itself” (p. 214) and “the real danger is in the temptation to believe that decisions that determine machine characteristics, like size and weight, occur ‘naturally’” (p. 214). This perspective is developed partly from Winner’s (2010) explanation of the political nature of technology. He argues that we need to be more conscious of the technological systems in which we live because “technical things can have political qualities” (p. 666). We need to be reflective about the technologies and technological systems in which we live and work because, intentionally or not, our society has developed structures that create possibilities and constraints for how we can live. This means that technological structures are key areas to investigate when questions of social justice arise. Critical literacies present technologies in ways that make space for these investigations.

As the name implies, rhetorical literacies involve reflective meaning-making. Selber (2004) argues that “students who are rhetorically literate will recognize the persuasive dimensions of human-computer interfaces and the deliberative and reflective aspects of interface design, all of which is not a purely technical endeavor but a form of social action” (p. 139). Understanding the connected nature of users, producers, and texts through interfaces makes space for users to engage differently with technology. It requires the close integration of functional and critical literacies and is crucial for rhetorical design. Rhetorical literacies are also active, in the sense that they are used to both evaluate existing interfaces and produce new ones. Like the multiliteracies scholars in the midst of the digital turn, Selber argues that rhetorical scholars need to be involved in the teaching of technology. He extends this argument to contend that we need to also

be involved in the production of these technologies. This highlights the immediate need for integrating rhetorical literacies into our frameworks.

This model of interconnected functional, critical, and rhetorical literacies makes space for the rhetorical sovereignty of technology users, or “the rights and responsibilities that students have to identify their own communicative needs and to represent their own identities, to select the right tools for the communicative contexts within which they operate, and to think critically and carefully about the meaning that they and others compose” (Selfe, 2009, p. 618). This expansion of the multiliteracies framework that began in the mid-1990s is important because it begins to remove multiliteracies from being positioned strictly within writing classrooms. It reminds us that multiliteracies—like more traditional studies of literacy that came before this digital turn—are implicated within systems of power that support, maintain, hinder, or otherwise shape what those literacies could or should look like.

1.3 Literacy Sponsorship

Deborah Brandt’s (1998) model of sponsorship has been used by scholars of literacy to understand and explain some of the ways that literacy functions within communities. She explains that “sponsors, as I have come to think of them, are any agents, local or distant, concrete or abstract, who enable, support, teach, model, as well as recruit, regulate, suppress, or withhold literacy—and gain advantage by it in some way” (p. 166). She argues that these sponsors “set the terms for access to literacy and wield powerful incentives for compliance and loyalty” (p. 167).

However, individuals are sometimes in a position to “filch” literacy resources from their sponsors for projects of self-development. Brandt (1998) notes that “misappropriation is always possible at the scene of literacy transmission, a reason for the tight ideological control that usually surrounds reading and writing instruction” (p. 567). In her explanation, Brandt tells the stories of two working-class women who re-appropriate literacy practices originally sponsored for them by male colleagues. With their new communication and technological literacies, these women were able to pursue their own goals, beyond the workplace.

Much of the work on literacy sponsorship has followed Brandt’s lead and focused on the institutional sponsor as the agent, because they often shape who has access to literacy resources and define what counts as literacy. Some of the subsequent literacy research using sponsorship as a guiding metaphor has considered how commercial sponsors shape online spaces (Pavia, 2013) and how schools and families become sponsors for students (Webb-Sunderhaus, 2007).

While Brandt (1998) focused on corporate and institutional forces, Webb-Sunderhaus (2007) focuses on the role of communities in literacy sponsorship. She writes that “schools are not the only, or even necessarily the most influential, sponsors of literacy in American lives” (p. 6). Important also are families, friends, jobs, and other groups to

which someone belongs. Webb-Sunderhaus recognized that “some relatives emerge as both sponsors and inhibitors—or perhaps more accurately, sponsors of competing meanings of literacy—and illustrate the larger social forces surrounding literacy in students’ lives” (p. 5). This was particularly important for first-generation college students, when advancing literacies were sometimes constructed as dangerous or risky. This work highlights the complexity of sponsorship, and the importance of looking for the ways that sponsors create both opportunities and constraints for developing literacies.

Another extension of this model focused on the relationships between several sponsors of literacies within an online community, noting that users sometimes “adopted subject positions initially provided by commercial sponsors” (Pavia, 2013, 132). Pavia explains her extension of Brandt’s framework, writing that few scholars have applied the concept of literacy sponsorship to digital literacy in order to study the ways in which commercial sponsors of online spaces enable and constrain literacy use within online spaces” (p. 132). As Pavia indicates, we’re still in the process of understanding what literacy sponsorship might mean in digital spaces.

While these scholars have expanded Brandt’s metaphor to include multiple, layered sponsors acting in digital spaces, the focus is still on a top-down kind of sponsorship passed from experts and institutions to individual users. However, the picture becomes more complicated and interesting when we place our focus on how individuals—the sponsored—become agents in a system that may have marginalized, excluded, or used them. I argue that we can use the Greek concept of *metis* to reframe conversations about literacy sponsorship and focus on user agency within these systems.

1.3.1 Metistic Literacy

Pedagogically supporting functional, critical, and rhetorical literacies is one way to make space for change within technological systems, but it is not the only way. This matters, because not all users have access to the formal education that would help them become developers of technologies and interfaces. However, many of these users can, and do, work from within technological systems to instigate change. For example, some users can shift the ways we think about what the “functions” of a technology might include by using those technologies in unexpected ways.

I’d like to characterize this relationship with technology as a kind of “metistic” literacy. I am not arguing that metistic literacy is categorically different from rhetorical literacy. Instead, I propose that this is a specific form of rhetorical literacy practiced from a marginalized position, and the effects of these practices can be substantial when we consider their impacts on the sponsorship of literacies in digital spaces.

Metis is a concept that comes from the Greek tradition of philosophy and rhetoric, which numerous scholars in rhetoric and technical communication have been working to recover and re-enter into conversations about rhetorical agency (Detienne and Vernant, 1991; Johnson, 1998; Brady, 2003; Dolmage, 2009). *Metis* has been described as the

intellectual capacity associated with *techne*, technology, and rhetoric (Brady, 2003). *Metis* has also been explained as cunning, adaptive, wiley, wise, and embodied intelligence (Dolmage, 2009) which is enacted through flair, forethought, subtlety of mind, deception, resourcefulness, vigilance, opportunism, and experience (Detienne and Vernant, 1991). These scholars consider how metistic practices can create space for different and productive kinds of knowing and doing. Rather than transforming technology through brute force or violence, metistic practices help individuals work to navigate and subvert systems from the inside, by employing tactics to do what they can with what they have.

For Dolmage (2009), embracing *metis* also means “admitting that rhetoric has a body—that rhetoric is perhaps best metaphorized and dynamized not by the proportionate and perfect body but by a range of bodies fighting against imposed ideological limitations with true physical diversity, using cunning rather than brute force to defeat a Titanic tradition that has channeled oppressive strength to delimit rhetorical possibility” (p. 22). In other words, *metis* highlights embodiment, which supports claims made by Johnson, Levy, Manthey, and Novotny (2015) that “to think about rhetoric, we must think about bodies” (p. 39). While Dolmage (2009) focused on disability and the body, these scholars consider women in rhetorical scholarship, arguing that feminine bodies are often obscured. They argue that “by recognizing the inherent relationship between embodiment and rhetoric, we can make *all* bodies and the power dynamics invested in their (in)visibility visible, thereby strengthening the commitment to feminist rhetorical work” (Johnson, Levy, Manthey & Novotny, 2015, p. 39). I echo Dolmage (2009) in response, proposing that *metis* provides a conceptual frame for considering the various embodied positions that rhetors inhabit. This consideration of embodiment is especially important when rhetors are communicating about and with technologies intimately tied to their bodies and their health.

The concept of *metis* is closely connected to what Michel de Certeau (1984) described as tactics. Tactics are the everyday practices that people engage in to navigate or resist the strategies of formal systems. While strategies are calculated moves by subjects and entities with power such as businesses, armies, cities, or institutions like the scientific community or the government, tactics are the “subtle, stubborn, resistant activity” (Kindle Location 451) used by individuals or groups without a position of power to make do in a situation where the odds may be against them.

Strategies require a certain kind of power, one that acts as a normalizing force. According to de Certeau (1984), strategies are used as “an effort to delimit one's own place in a world bewitched by the invisible powers of the Other” (Kindle Location 691). However, this does not mean that these “others” are powerless. Instead, de Certeau explains that people can employ a series of tactics that are characterized by their “subtle, stubborn, resistant activity” (Kindle Location 451). This often consists of using available materials and spaces in unintended ways. This might take the form of *la perruque*, which de Certeau describes as “the worker's own work disguised as work for his employer” (Kindle Location 551). Similar to what Brandt (1998) described as “filching” literacy

resources from employers, *la perruque* involves using company time or tools, not to steal, but to work toward some personal ends other than company profit. Like *la perruque*, tactics are often metistic, given that they aim to “obtain the maximum number of effects from a minimum of force” (de Certeau, 1984, Kindle Location 82) and the “most knowledge in the least time” (Kindle Location 83).

If strategies set the rules of a game, tactics are players’ strategies for making it through that game. Kimball (2006) explains that “strategies depend on owning the text; tactics depend on propitious timing (*kairos*) and situational cunning (*metis*) in using and making the text” (p. 72). He further argues that these tactics can shift our understanding of documentation. While most technical writing is done by institutions and support corporate, governmental, and organizational agendas, Kimball highlights instances where users can become producers of documentation and become what he calls “tactical technical communicators.” When users begin to envision alternatives for technology and create and circulate their own guides or narratives, they can work in communities to “spontaneously create and mutate technical documentation, thus taking their technological destiny into their own hands” (p. 82). This complicates ideas about user agency in technological systems and raises questions about the role of technical writing within these systems.

This is not to say that every user in every technical system is consciously employing tactics in order to create change. However, this project will highlight the complicated ways in which official sponsors employ strategies and some groups of users respond with tactics in order to define and potentially transform the possibilities and constraints surrounding health-tracking technologies.

This focus on strategies and tactics also opens up space to understand how users can engage with technologies in unexpected, cunning, and metistic ways, even when technologies were not designed to accommodate all actions and all users. I argue that applying this framework for knowing highlights how individuals from different positions in the “differential economy” (Brandt, 1998) of literacy development can create space for their voices and practices in a sea of literacy sponsors with different interests. In other words, it can help illuminate how ecologies of sponsorship form around these technologies. In the next chapter I develop this framework for mapping ecologies of sponsorship and its impacts on the methodological approach of this research.

2 Methodology

The term “technology” is often used to refer to digital tools or artifacts developed by experts to solve problems or improve users’ lives. However, rhetorical and humanistic approaches to technology highlight the contextual, political nature of technology and technical systems. For example, Winner (2010) argues that to “take technical artifacts seriously” (p. 668), we need to look at individual technologies and contemplate the possibilities they allow, the effects they could bring, and the conditions that become more or less possible in the context of their use.

This research considers health-tracking technologies broadly, and Fitbit devices specifically, in this context—as value-laden socio-political artifacts that have the power to shape the realities of their users. To investigate the relationship between this technology and its users’ digital literacies, this project takes a rhetorical, qualitative approach. The result is a project that traces how various literacy sponsors create possibilities and constraints, how communities of users support and resist these frameworks, and how users themselves can become sponsors of digital literacies.

The following set of questions was used to guide this investigation:

1. How do users understand the potentials and constraints of their wearable health tracking devices?
 - 1a. How does the official, Fitbit-sponsored, documentation that surrounds health-related technologies construct grand narratives about the technology itself, the people who use it, and the purpose or goals that motivate those users?
 - 1b. How have users embraced or challenged these grand narratives through their consumption of Fitbit’s documentation or the production of their own documents?
2. What kinds of digital literacies do users enact through their interaction with these health-tracking technologies and their associated documentation? How and where are those literacies being sponsored?
 - 2a. What kinds of literacies is Fitbit sponsoring for its users? What are the implications of this sponsorship for users?
 - 2b. What kinds of literacies are users sponsoring for other users? What new possibilities or constraints emerge within this extended ecology of sponsorship?

To address these questions, this project uses a combination of mixed methods that were developed in the context of specific methodological commitments. This chapter will first

explain the methodologies that have shaped this project (2.1), then review the specific methods used to collect and interpret data (2.2).

2.1 Methodological Commitments

While methods provide researchers with sets of practices for deciding what information should be collected and how it might be interpreted, methodologies more broadly help answer questions about what counts as knowledge and what guiding beliefs and commitments will inform those research methods. This project was influenced by several methodological commitments that guided this project toward a nuanced, critical, and reflective investigation of wearable Fitbit technology. These include the belief that knowledge is situated, that technologies are ecological, and that digital literacies develop through ecologies of sponsorship.

2.1.1 Situated Knowledge

Feminist scholars frequently situate themselves within their projects and situate their projects within larger cultural contexts to highlight that all knowledge is partial, contingent, and part of larger cultural systems. As Haraway (1988) has argued, “feminists don't need a doctrine of objectivity that promises transcendence” (p. 579). Instead, we need situated knowledges, or ways of knowing that do not “pretend to disengagement: to be from everywhere and so nowhere, to be free from interpretation, from being represented, to be fully self-contained or fully formalizable” (p. 590). Everyone sees from somewhere and “it is impossible to take the subjectivity of the rhetor for granted, impossible not to locate that subjectivity within the larger context of personal, social, economic, cultural, and ideological forces” (Ede & Lunsford, 1995, p. 412). As scholars, each of us occupies a unique position, and these are the locations from which we develop our research stances and articulate the agendas that we hope our work will advance.

This matters because rhetorical research—whether the focus is on technology or not—often has a political or social agenda. For these projects to be most effective, a scholar's stance should be explicit and used to guide the research. Projects that aim to change existing systems need to have an “openly interested and critical stance” (Scott, 2003, p. 20). Part of this involves developing a clear research stance that recognizes “the importance of subjectivity, experiential knowledge, and ongoing reflection on experience and action” (Ryan, 2012, p. 90).

A research stance can serve two functions: to identify our intellectual and social commitments, and to help guide our research toward projects that matter to us. According to Royster and Kirsch (2012), “paramount in our professional obligations in research, teaching, and scholarship is recognizing the need to construct consciously a role and place for ourselves in the work and to understand our specific professional and personal relationships to it” (Kindle Location 1056). These agendas display “an awareness of the capacity for rhetorical agency, resistance, and change (Koerber, 2006, p. 87). Therefore, a clear agenda or stance can lead to stronger, more situated knowledge production. In this

spirit of transparency, I want to share my own research stance, explaining where I locate myself in this research and defining my motivations and goals for this project.

I am a Fitbit user, and I have been since 2013. I have also been teaching writing since 2012. This project is a collision of these two worlds for me. I originally purchased a wearable health-tracker because of its promise to track and help users understand their sleep. I was a graduate student at the time, working on an M.A. and dealing with chronic insomnia. While I was using my Fitbit in a fairly typical way, I was still struck by the amount of marketing from the company that assumed my goal was (if not only, then at least mostly) to lose weight. It wasn't long before I started to also think that this should be my goal, and I expanded my use to tracking food and exercise through their associated website, and later the Fitbit smartphone application. I soon linked my Fitbit to my other health-tracking applications, including a period-tracker and a GPS-enabled running app. The data available through the combination of these applications was overwhelming and impressive. However, my Fitbit never did help me sleep better, or even manage my sleep problems more effectively. It did change the way I thought about my sleep, though, and my health more generally. Reaching certain numerical goals, and often failing to meet them, changed my relationship to my body and the ways I cared for it.

For years, I didn't think about my Fitbit use in relation to my teaching. I didn't consider the ways that writing technologies acted on students as similar to the ways that health-tracking technologies acted on users. However, while I was completing my comprehensive exams and developing my dissertation proposal on digital literacy development, I started to notice more critique of the wearable health-tracking technologies in popular news outlets. I started seeking out information on the rhetoric of health, and I found the *Rhetoric Society Quarterly* collection on "Wearable Rhetoric: Bodies, Cities, Collectives." Then, I saw a colleague present on non-normative users of period tracking applications and how personas could be used to advocate for these users. I started to see my personal interest in health-tracking technology as available for scholarly investigation, and I shifted my focus from a range of digital technologies to specific health-tracking devices.

I also started seeing connections between learning to use Fitbit and learning to use other digital technologies in school. At the start of this project, I was teaching a Professional and Technical Communication class at Michigan Tech. This was a technology-rich classroom environment that asked students to produce things like career documents, recommendation reports, project pitches, websites, and usability reports. I thought about my course as student-centered, and I worked to integrate students' voices and perspectives into the content of the course. But I was still ultimately in charge of shaping our experiences within that classroom.

I began to worry that my student-centered classroom was only "student-centered" in the way that Fitbit devices might claim to be "user-centered." Were the experiences I curated for students throughout that semester telling students what they should want and how

they could achieve that narrow range of goals? Was I limiting what they saw as possible or preferable when it came to using certain technologies? I would like to say no. However, the answer is more complicated. I want students to build tools, skills, and knowledges that will help them achieve a wide range of goals that they have in their personal and professional lives. After all, we need to be able to communicate with and through technology in most contexts of our lives. I'm just not sure how well my classroom practices enacted these values. I'm also not sure how well it *can* enact these values, and still look like a recognizable college writing class.

I started to consider how my classroom could only support a very limited version of the complicated rhetorical work that was happening in digital communities, where I saw users advocating for themselves and their goals, creating new sets of materials, and sharing their stories in ways that changed the realities of other users. However, I could think about the ways that my classes could build connections to online spaces where knowledge production happens differently. That goal motivates my ecological approach to literacy development in this project, which I explain later in this chapter.

I wanted to share this story, because this series of experiences has led me to a particular relationship to this research. As a Fitbit user, I am invested in challenging the shift from self-motivated modes of tracking to the more imposed and exploited forms of self-tracking that are becoming increasingly common (Lupton, 2014). I am not a developer of self-tracking technology, so this challenge comes in the form of highlighting user experiences and the ways they push back in a system that might marginalize them and their goals, and at the same time might use their personal information for profit. I want to use this research to highlight the important work that users are doing from within the technological system of health tracking to challenge that system.

I am also invested in drawing connections between how users develop functional, critical, rhetorical, and metistic literacies in online spaces and the ways we ask students to develop these literacies within our classrooms. Too often, higher education imposes language, practices, and values on students as a condition for their success. Rhetoric and writing teachers are increasingly aware of students' right to rhetorical sovereignty, or "the rights and responsibilities that students have to identify their own communicative needs and to represent their own identities, to select the right tools for the communicative contexts within which they operate, and to think critically and carefully about the meaning that they and others compose" (Selfe, 2009, p. 618). I also believe that we can do more to translate our value of student agency to concrete pedagogical strategies. Therefore, I want to use this research to intentionally offer pedagogies that value rhetorical sovereignty and make space for students to draw meaningful connections between their curricular and extracurricular learning.

I recognize that I am situated and invested in this research in ways that exclude traditional notions of objectivity. For example, while this project is invested in the usability of digital health-tracking technologies, I have no interest in using this research to maintain the status quo in a smoothly-running system. Instead, my intention is to

highlight the potential in moments of disruption, both in health-tracking systems and in digital literacy pedagogy.

Instead of disinterested objectivity, this research relies on situated, embodied forms of knowledge. Johnson has drawn attention to the way that “user knowledge is always situated” (p. 9) and what “users know about technology and the experiences they have with it are always located in a certain time and place” (p. 9). Building a model of technologies around these situated perspectives is consistent with what Sandra Harding has called “standpoint theory.”

Harding (1991) argues that “not just opinions but also the culture’s best beliefs—what it calls knowledge—are socially situated” (p. 119), and that “each person can achieve only a partial view of reality from the perspective of his or her own position in the social hierarchy” (p. 59). She uses this stance to draw attention to the importance of women’s perspectives in the development of science and technology. Through explicitly paying attention to marginalized positions that see from somewhere other than the privileged or normalized perspective, Harding argues that research can allow us to re-think objectivity. When we recognize that technology and knowledge are never value-neutral, we also need to question what ideas we might call objective or valid. It is on this basis that Harding develops the concept of strong objectivity, which denies the fallacy that all research must either perform objectivism—neutral and value-free research—or become judgmental relativism—treating every person’s perspective on every topic as equally true. In contrast, strong objectivity recognizes cultural relativism and calls for scientific investigation of which social positions might produce the “best” objective knowledge in a given situation.

Like Harding, scholars who have embraced the framework of user-centered technology are committed to the idea that knowledge is located, and everyone sees from somewhere. Looking to the user as a source of knowledge is one way that scholars enacting user-centered research and technology development have made a move toward strong(er) objectivity. Listening to and learning from multiple perspectives, especially those from marginalized positions, can lead to stronger forms of knowledge. This means that we must “develop mechanisms by which listening deeply, reflexively, and multisensibly become standard practice not only in feminist rhetorical scholarship but also in rhetorical studies writ large” (Royster and Kirsch, 2012, Kindle Location 332).

Royster and Kirsch (2012) explain that the purpose of reflexive research is to look “beyond typical anointed assumptions in the field in anticipation of the possibility of seeing something not previously noticed or considered” (Kindle Location 954) and to be “aware, not only of what enters our field of vision—what we see and recognize—but attuned also to our blind spots in order to consider with critical intensity what may be more in shadow, muted, and not immediately obvious” (Kindle Location 1028). This research is informed by these perspectives and guided by a commitment to building strong, reflexive, situated knowledge.

This project uses layered forms of data collection, looking at a range of documentation that surround these fitness trackers, observing multiple online communities where users interact, and learning from users through interviews. This combination of mixed methods will allow me to look, and look again, at digital health tracking technologies while acknowledging the situated nature of this investigation.

2.1.2 Technological Ecologies

Another guiding belief that has shaped this research is the notion that technologies are ecological in nature. Increasingly, rhetoric and technology are being described in ecological terms. This is a shift from tool-based metaphors of technology, and this shift allows for more careful consideration of technologies within their varied social and cultural contexts (Nardi & O'Day, 1999). Edbauer (2005) has used ecologies as a metaphor to point our attention to the inter-related nature of contextual elements. She proposes a “revised strategy for theorizing public Rhetorics (and Rhetoric's publicness) as a circulating ecology of effects, enactments, and events by shifting the lines of focus from rhetorical situation to rhetorical ecologies” (p. 9). Thinking in terms of ecologies requires that our analyses of rhetorical situations extend beyond a combination of discrete elements. This method emphasizes circulation and how meanings move and change in relation to multiple, complicated exigencies.

The concept of rhetorical ecologies also provides a framework for thinking about how rhetorical flows diverge and change as they travel down different paths. Edbauer (2005) makes the following argument about the complexity of rhetorical ecologies:

Rhetoric emerges already infected by the viral intensities that are circulating in the social field. Moreover, this same rhetoric will go on to evolve in a parallel ways: between two ‘species’ that have absolutely nothing to do with each other. What is shared between them is not the situation, but certain contagions and energy. This does not mean the shared rhetoric reproduces copies or models of ‘original’ situations (any more than the shared C virus turns a cat into a baboon). Instead, the same rhetoric might manage to infect and connect various processes, events, and bodies (p. 14).

Though it might be unsettling to think of documentation as a virus that infects our understandings of our goals and agency, this metaphor allows us to consider how rhetorical artifacts can operate within different but connected contexts of use. For example, two Fitbit users might be exposed to the same messages about Fitbit through the packaging and user-manual. Their experiences are linked in some ways through this shared rhetorical exposure. Even when their experiences with this technology diverge on different paths, they still carry traces of that original, shared message, which can have lasting impacts on their experiences as users.

The rhetorical ecologies framework is closely related to the cultural-rhetorical methodology described by Scott (2003), who explains that this methodology uses

“specific texts as a way to elucidate shifting cultural entanglements” (p. 25) to tease apart the “web of cultural practices” (p. 25) that are connected to those texts. Like rhetorical ecologies, cultural-rhetorical approaches ask that we look at something deeper than just context. Contexts can seem flattened or static, while ecological approaches emphasize that ecologies are always emergent and in flux. Scott argues that this “does not mean that we also abandon any notion of rhetorical agency but that we temper and transform such a concept to recognize its contingency and interrelated sources” (p. 23). In other words, we might think of agency and rhetorical action as “emergent and enacted through a complex ecology of texts, writers, readers, institutions, objects, and history” (Rivers & Weber, 2011, p. 189).

While the distinction between technology as a system and an ecology may seem small, these differences are important. As Nardi and O’Day (1999) explain, these metaphors matter: “People who see technology as a tool see themselves controlling it” (Kindle Location 42) while “people who see technology as a system see themselves caught up inside it” (Kindle Location 42). They go on to provide an ecological metaphor with different potentials, writing that “we see technology as part of an ecology, surrounded by a dense network of relationships in local environments” (Kindle Location 42). Here, ecologies highlight potentials for user agency regarding technology, acknowledging that we are neither completely in control, nor completely powerless. We, along with specific technological artifacts, are engaged in a series of effects, enactments, and events that make up this rhetorical ecology.

This investigation honors this complexity partly through dedicated attention to the mundane artifacts that surround Fitbit technology. For example, this research focuses not only on the most visible documentation, but also on small rhetorical texts like digital stories, blog posts, and online forums. This is because the everyday and the mundane are important factors within technological ecologies, as several scholars have argued. For example, Rivers & Weber (2011) explain that “in expanding public rhetoric’s scope to include the mundane, we ultimately want to emphasize the ecological nature of public discourse and offer a pedagogy designed to help students recognize and engage public rhetorical ecologies” (p. 188). Because each piece of an ecology is tied to each of the other pieces, even small acts, texts, or events can have significant and lasting ripple effects. This means that there are “myriad and mundane ways we can, collectively, effect change” (p. 195). Within these ecologies, change becomes possible not just through massive shifts, but also through incremental shifts over time. Without looking to users and their contributions to the documentation surrounding these trackers, it would be easy to miss these small shifts that have the potential to create long-term change.

2.1.3 Ecologies of Sponsorship

In this project, I re-examine the metaphor of literacy sponsorship to account for the situated nature of knowledge and the ecological nature of technology. While it is true that “sponsors of digital literacy greatly affect individuals’ encounters with digital literacy, their incentives for pursuing digital literacy, their opportunities for doing so, and the

barriers that they face when writing in digital contexts” (Pavia, 2013, p. 133), the one-way model of literacy sponsorship does not account for all of the complexity of the communities in which people live, work, learn, and practice these literacies. Our current models of sponsorship are incomplete because “we miss a great deal of the more interesting and engaging self-sponsored reading and composition that students do on their own time” (Hawisher, Selfe, Moraski & Pearson, 2004, p. 676).

I propose that we complicate literacy sponsorship by thinking about ecologies of sponsorship rather than isolated, institutional sponsors. For example, instead of thinking about Fitbit as the sponsor for functional literacies surrounding its trackers (enacted through user manuals), we can consider how Fitbit and their resources are one point of articulation in an ecology that also includes user-generated tutorials, digital stories, news articles, how-to videos, and many other resources.

This is a shift from traditional notions of literacy sponsorship that often do not explicitly reference technology (i.e., Webb-Sunderhaus, 2007), or present technology as a system that users are caught up in (i.e., Pavia, 2013). If we conceptualize technology as an ecology rather than a system, we can also rethink literacy sponsorship as emerging through complicated interactions with many sponsors over extended periods of time. This means that the ecologies of sponsorship that shape digital literacy development are always in flux, and small actions can have significant rippling effects within the rest of the ecology.

This move toward studying ecologies of sponsorship would help account for what Hawisher et. al. (2004) has called the “cultural ecology of literacy” that is made up of “social contexts; educational practices, values and expectations; cultural and ideological formations like race, class, and gender; political and economic trends and events; family practices and experiences; and historical and material conditions—among many, many other factors” (p. 64). If we believe, like Hawisher et. al. (2005), that “literacies have lifespans” (p. 64), then we need to build models that help us account for these cultural ecologies.

One way to begin theorizing how ecologies of sponsorship operate is to draw on models of public rhetoric that foreground circulation. Ecologies of sponsorship develop and grow organically because resources are being developed to maximize rhetorical velocity. Sheridan, Ridolfo & Michel (2012) have described rhetorical velocity as the ability of a composition to be widely distributed, shared, and recomposed by other rhetors within a (usually digital) community. They argue that “rhetors need to see themselves as part of a larger web of considerations that include audience, exigency, modes, media of production and distribution, infrastructural resources, other collaborators, and other compositions” (p. xxvi)—in other words, as part of an ecology.

They argue “one risk of this ecological understanding of rhetoric is that rhetorical agency seems to evaporate” (p. xxvii). However, they urge us to think about rhetors as a point of articulation within this matrix where agency is not diminished, just distributed through

different parts of the ecology. Hawisher et. al. (2004) echoes this statement, arguing that “people can exert their own powerful agency in, around, and through digital literacies” (p. 64). This research focuses on several of these points of articulation. For example, the documentation including websites, manuals, blogs, videos, and stories can all be understood as points of articulation within a rhetorical ecology.

Agency within these ecologies involves being prepared to seize kairotic moments, where kairos is conceived of as both spatial and temporal, and creates opening or gaps for rhetors to engage with (Sheridan, Ridolfo & Michel, 2012). In other words, “the rhetor reads the situation to determine what opportunities are and are not available” (p. 8) and to negotiate affordances and constraints. This kairotic preparedness creates space for agency and social action within these technological ecologies. While, “new technologies potentially open up new forms of access to various and overlapping publics and counterpublics” (p. 29), the technologies alone are not sufficient. Instead, users need to be able to recognize and act in the kairotic gaps created by these emerging technologies. This requires a complicated combination of functional, critical, rhetorical, and perhaps even metistic literacies.

Considering the development of these literacies as ecological highlights the variety of sponsors that might be supporting these literacies, and how users’ literacies can be sponsored even as they simultaneously sponsor literacies for others. Because “emergent technologies are fundamentally altering the dynamics of access by providing non-specialists the resources necessary to produce, reproduce, and distribute rhetorically effective multimodal compositions” (p. 31), these technologies have the potential to help users move from the position of sponsored to a more active position as digital literacy sponsors.

For example, a Fitbit user might consume a range of documentation and resources as they learn to use that technology. That same user might begin to see their experiences as a valuable source of knowledge and decide to share those experiences as narratives in online spaces. They might go on to create how-to videos that address aspects of the technology that they value or want to promote. Developing digital technologies have made this process easier for users: it’s faster and requires less technical expertise to create materials like these, and it’s far easier for the average user to distribute their self-generated materials widely to an interested audience.

However, these potentials are contingent on a number of factors, including the connections between the user-generated texts and other resources. In other words, the visibility and rhetorical velocity of these user-produced documents is crucially important in determining the potential impact of these texts. In digital spaces, “rhetorical options are never merely present, but are made visible or invisible by a complex array of material and cultural forces that are themselves situated within larger discourses and ideologies” (Sheridan, Ridolfo & Michel, 2012, p. 47). While recognizing the expanded range of resources that surround these technologies provides some insight into digital literacy sponsorship, we must also consider the material and cultural forces that foster and/or

inhibit connections between points of articulation within that ecology. Taken together, these expanded points of sponsorship and the movement and connections between/among them constitute what I am calling an ecology of sponsorship.

Expanding the notion of sponsorship to account for these ecologies could allow us to see how small-scale user-produced and distributed content can have crucial shaping effects on the digital literacies of other users. For example, one story shared by a user might challenge the grand narrative of Fitbit use, and help other users see the technology in a new way. Arduser (2017) has noted the importance of narratives like these in the context of diabetes patients, writing that “agency manifests itself through the emergence of counter narratives to dominant narratives of progress and control and through the act of writing as a social action” (Kindle Location 698). These counter-narratives can engage users in critical questioning of technology, a key feature of critical and rhetorical literacies. Further, the act of producing that narrative might enact rhetorical or metistic literacies in ways that other users recognize and repeat in their own ways and with their own purposes.

This project takes this ecological approach to literacy research: it considers what happens when agency is distributed within an ecology of sponsorship and people become simultaneously sponsors and the sponsored. In other words, it explores what happens when literacy resources are no longer held under tight ideological control by institutional and corporate forces, but are widely distributed and crafted to maximize their rhetorical velocity.

Thinking about specific events within this ecology as a snapshot in an ever-moving system allows researchers to frame artifacts, interactions, and experiences as points of articulation in a dynamic ecology. By tracing the connections between various points of articulation, we can better understand the role of rhetorical velocity in the development of multiple, layered strands of sponsorship. This research focuses on these connections across time and space to investigate multiliteracies development in the context of health-tracking technologies.

2.2 Methods

Using a combination of mixed qualitative methods, this project traces the ecologies of sponsorship through which users encounter, consume, create, modify, and share resources that sponsor a range of literacies with various purposes. Over the course of this project, I collected and analyzed data through 1) rhetorical analysis of the documentation that surrounds Fitbit trackers and their use, 2) observation of the online spaces in which those documents are accessed and shared, and 3) interviews with individual users. Each of these methods constituted a separate, sequential phase of data collection. However, the analysis of this data looks across research phases to place the documentation, online environments, and users in conversation to address the research questions named at the beginning of this chapter.

In the remainder of this chapter, I explain each of these research methods in more detail. For each of these three phases, I indicate how and where data was collected and the analytic frameworks that were used to code and interpret that data.

2.2.1 Rhetorical Analysis

Rhetorical analysis was the first and most extensive component of this research project. This research phase involved the analysis of a wide range of documentation that surrounds Fitbit devices and their use. I define “documentation” broadly here, including both official, Fitbit-generated content and unofficial, user-generated texts. In some ways, I’m thinking about documentation as more of a verb than a noun in this research, including all kinds of text that “document” some aspect of this popular health-tracking technology. I am, of course, also using the term “documentation” and “document” as nouns, to refer to the digital artifacts that are doing this work.

As a result, it was not important to me that these documents looked or functioned in any particular way. Instead, the criteria for inclusion was that these artifacts were easily accessible to a range of Fitbit users and that they could function to support or reinforce users digital literacies in some way. In other words, these texts all had the potential to circulate and reach users who were looking for information or resources regarding their Fitbit devices.

2.2.1.1 Rhetorical Analysis: Data Collection

I started this project by collecting institutionally-sponsored, Fitbit-generated material like user manuals, web pages, screenshots of the application interface, packaging, and advertisements. I also included more mundane communications in my search, seeking out documents such as emails, social media posts, and Fitbit representatives’ responses in user discussion forums. Most of these documents, even the mundane, are pieces of technical communication about this technology.

I also expanded this search to include user-generated content, or what Kimball (2006) might identify as tactical technical communication. I used search-engines, social media, and third party news articles to identify online places where users were discussing Fitbit devices and their use. For example, I searched “Fitbit,” “Fitbit help,” “Fitbit health,” and “Fitbit tracker” in places like Google, YouTube, and Facebook to begin this search for user-generated texts. I then used snowball collection methods—a strategy that allows research materials to grow naturally by following leads and references to other sources, much like a snowball grows as it rolls down a hill. I used these methods by following links to additional resources within each of the online spaces I visited, which in turn helped me expand my collection of digital texts.

In total, I collected and analyzed approximately 80 documents, split evenly between official, Fitbit-sponsored content and unofficial, user-generated content. While I began analyzing this data right away, I continued to add documentation throughout the

subsequent phases of data collection. For example, if a user referenced any specific piece of documentation during an interview, I added this document to the body of artifacts included in this rhetorical analysis. I then analyzed each of the documents using a number of analytic frameworks.

2.2.1.2 Rhetorical Analysis: Data Analysis

In addition to basic information (who created it, where it was posted, etc.), each document collected was individually analyzed in terms of its ideological positioning, its relationship to the technological system of health-tracking, and the kinds of digital literacies it enacted and sponsored.

2.2.1.2.1 Ideological Positioning

In order to determine the ideological positioning that shaped each of these documents, I analyzed 1) the metaphors it used to describe Fitbit and/or health tracking technology; 2) how it positioned the purpose of the technology; and 3) how it characterized Fitbit users.

I began by identifying which metaphors or perspectives on technology each document invoked: These included the framework of technology as tool, technology as system, or technology as ecology, developed by Nardi and O'Day (1999) and described earlier in this chapter. I also noted if these metaphors were explicit or implicit, and if other, alternative metaphors were invoked.

I then identified the ways each document defined or explained the purpose of Fitbit technology. According to previous research on wearable health-tracking devices (explained further in Chapter 1), these are most often purchased and used because they appear to give users more agency over their own health. I therefore included the following categories of purposes to my coding scheme: Gain self-knowledge through quantification, improve physical health, improve mental health, and leverage data for self-advocacy. As with the metaphor coding, I included an indication of whether these purposes were explicitly named or implicitly referenced through other content. I also noted any other/alternative purposes that were named in any of the documentation.

Finally, I noted any identity markers each document stated or implied for Fitbit users, including characteristics such as gender, age, sexual orientation, and (dis)ability. I also noted what Seigel (2013)—drawing on concepts developed by Burke—describes as pieties, or the “orientations that determine what people can or cannot say and do” (p. 25). These are indications, often implied, of what an ideal or “good” user should say, do, or be. Because I was not sure what pieties might arise in this array of documentation, my notes in this category were more free-form than the coding schemes for technology metaphors and purposes.

Examining the ideological positioning of these documents allowed me to begin addressing my first set of guiding questions: How do users understand the potentials and

constraints of their wearable health tracking devices? How does the official, Fitbit-sponsored documentation that surrounds health-related technologies construct grand narratives about the technology itself, the people who use it, and the purpose or goals that motivate those users? How have users embraced or challenged these grand narratives through their consumption of Fitbit's documentation or the production of their own documents?

2.2.1.2.2 Relationship to the Technological System of Health Tracking

In addition to determining the ideological positioning of each document, I coded these documents according to their relationship with the technological system of health-tracking. As previously noted in Chapter 1, Seigel (2013) identifies multiple ways that documentation can relate to a system: system constitutive, system maintaining, system disrupting, or system simulating. Because I am not thinking about technology itself or literacy development as a system (but rather as an ecology), I am using this framework to think about what might be called the technological system of health-tracking (explained further in Chapter 1).

In this framework, system constitutive documentation acts to formalize or engage users in a new or emergent system. System maintaining documentation works to maintain the status quo while encouraging user engagement in a system. System disrupting documentation subverts or challenges the status quo and might work to instigate change within a system. Finally, system simulating documentation works to engage users in the documentation itself, rather than promoting any particular relationship to the system. Each kind of relationship between the text and system creates different possibilities and constraints when it comes to subverting or changing that system, which I have explored in more detail in Chapter 1.

Like my analysis of the ideological positioning of this documentation, this framework addresses my first set of research questions: How do users understand the potentials and constraints of their wearable health tracking devices? How does the official, Fitbit-sponsored, documentation that surrounds health-related technologies construct grand narratives about the technology itself, the people who use it, and the purpose or goals that motivate those users? How have users embraced or challenged these grand narratives through their consumption of Fitbit's documentation or the production of their own documents?

2.2.1.2.3 Digital Literacies Enacted and Sponsored

Finally, I coded each of these documents according to the kinds of literacies they enacted or sponsored. Selber (2004) has proposed a framework of connected functional, critical, and rhetorical digital literacies. In this framework, functional literacies position people as users of technology, emphasizing tool-based metaphors of technology use. Critical literacies position users as questioners of technology, emphasizing users' critical awareness of the socio-political contexts in which technologies are situated. Rhetorical

literacies involve the combination of functional and critical literacies to position users as producers of technologies, emphasizing the rhetorical nature of technological interfaces. Finally, metistic literacies involve subverting the technology or altering its intended purposes to make it serve some other ends. Each of these concepts was explored in more detail in Chapter 1 of this dissertation.

I coded each document using these concepts in two ways. I first identified which literacies the creator appeared to have utilized in the creation of the text itself. I then noted which literacies (if any) seemed to be sponsored for others through the creation or circulation of that text. Important to note here is that many of these documents enact and support multiple literacies at the same time.

Integrating these concepts as a major analytical frame allowed me to consider what kinds of literacy were being sponsored and what ends they might serve. Specifically, this analysis helped me address my second set of guiding questions: What kinds of digital literacies do users enact through their interaction with health-tracking technologies and their associated documentation? How and where are those literacies being sponsored? What kinds of literacies is Fitbit sponsoring for its users? What are the implications of this sponsorship for users? What kinds of literacies are users sponsoring for other users? What new possibilities or constraints emerge within this extended ecology of sponsorship?

2.2.2 Observations

In addition to collecting and analyzing documentation, I also observed the online spaces in which those documents were accessed and shared. Though this was the least intensive stage in this research process, I focused on observing user interactions within these online spaces in order to better understand the documents within their contexts of use.

2.2.2.1 Observations: Data Collection

While I made some initial observations about each of the online communities I encountered through this research, I chose to look more closely at the practices of three specific online communities: Fitbit forums (“Manage Weight,” “Be Inspired”); Reddit Forums (“/r/fitbit” and “/r/Insomnia”) and Twitter (@fitbit and @unfitbits).

I looked at Fitbit forums because these are some of the most active online communities surrounding Fitbit, and are often the first results linked from Google searches involving the word “Fitbit.” These forums get a lot of traffic, and users and Fitbit representatives regularly interact in these spaces. Within the range of Fitbit forums, I looked specifically at “Manage Weight” and “Be Inspired” because they are the most popular lifestyle discussion boards with 57201 and 37708 posts respectively (as of August 2, 2017).

I contrasted this official Fitbit community with the unofficial Reddit forums. These online spaces are created and managed by users, and they create space for content that

might otherwise be deleted by Fitbit forum moderators. For example, these online communities can be used to express dissatisfaction, offer advice related to hacking or modifying the technology, and/or recommend switching to different technologies all together. Although many of these user-managed spaces exist, I focused on the Fitbit sub-reddit and the insomnia sub-reddit, because users reference Fitbit trackers and share advice regularly in both of these digital communities.

Finally, I looked at Twitter because social media sites often function to connect users to content produced elsewhere. Twitter also makes it easy to follow users and hashtags, essentially creating a digital archive of content. I looked specifically at the official corporate account (@Fitbit) and the explicitly subversive Unfit-Bits organization (@unfitbits) because, while they both regularly share content, each offers very different resources and information to users.

2.2.2.2 Observations: Data Analysis

If the documents analyzed in the previous research phase highlight specific points of articulation, the observations of these online communities focus on the links and connections within this ecology of sponsorship. In order to trace these connections and movement of documentation across contexts, I use rhetorical velocity as my analytical framework.

2.2.2.2.1 Rhetorical Velocity

Sheridan, Ridolfo & Michel (2012) describe rhetorical velocity as the ability of a composition to be widely distributed, shared, and recomposed by other rhetors within a (usually digital) community. For each of these communities, I created written reflections, noting the kinds of materials being shared, the ways those materials were being contextualized, and if/how these materials were recomposed. More specifically, I noted instances of positive and negative appropriation. Sheridan, Ridolfo & Michel describe positive appropriation as the sharing of a document that reinforces its original message or intent, while negative appropriation challenges or subverts that initial message through some kind of re-contextualization or remixing. These reflections were open-ended and descriptive in nature.

These observations address primarily the first set of guiding research questions for this project. For example, the instances of positive and negative appropriation highlight how grand narratives are constructed and maintained, as well as the potentials for negative appropriation to counter and challenge these narratives.

2.2.3 Interviews

In the final stage of this project, I conducted interviews with users about their experiences with Fitbit devices. While the previous phases of this research investigated the points of articulation in the ecology of sponsorship that surrounds Fitbit trackers (Rhetorical

Analysis) and began to trace connections between those points (Observations), these interviews allowed me to integrate user experiences and perspectives into this research. In other words, these interviews highlight these ecologies of sponsorship from the user's perspective.

2.2.3.1 Interviews: Data Collection

I invited users to participate in this research by posting an initial screening survey to online forums, such as those I observed in the previous research phase—Reddit and Twitter. Fitbit's posting rules do not allow researchers to post surveys within their online forums, so I could not contact possible users through Fitbit-mediated online spaces.

Within this initial survey, I asked users to indicate some of their demographic information, how long they'd had a Fitbit device, the type of device they currently owned, the other health-tracking applications they used (in addition to the standard Fitbit app), where they went for help and support regarding their Fitbit use, their motivations and goals, and their interest in participating in a more extended interview.

Based on the responses from this initial survey, I contacted three users who indicated their interest in continued involvement, and I conducted asynchronous interviews via email with each of these users. In these interviews, I asked users to share their stories about how they use their Fitbits, where they go to find help and resources, and what goals and motivations were driving their use. Below is a complete list of my interview questions, excluding follow up questions and conversations, which developed on a case-by-case basis:

1. Why did you initially get a Fitbit? What were your goals?
2. How do you use your Fitbit now? Have your goals or motivations changed? Please explain.
3. Do you consider yourself a typical Fitbit user? Please explain.
4. Do you share your data with other people or groups? If yes, how and why do you share that information?
5. Do you link your Fitbit with other apps, websites, etc.? If yes, which ones, and why do share information across these apps?
6. Where do you go to find information, advice, help, or resources about Fitbit? Do you go to the same places over and over again, or different places depending on what you need? Please explain with an example or story if you have one.
7. Have you created any social media posts, blog posts, videos, stories, etc. based on your experiences with Fitbit? If yes, what did you make/write, and why did you decide to share it? Please explain with an example or story if you have one.
8. What do you like best about Fitbit and your experiences as a user?
9. What would you change about your Fitbit device or experience if you could?
10. What advice would you give to other Fitbit users?

11. What advice would you give to Fitbit developers (the people who make the technology)?
12. What advice would you give to Fitbit's marketing team (the people who create the ads, emails, etc)?

2.2.3.2 Interviews: Data Analysis

Together with my interviewees, I began to trace the ecologies of sponsorship from an individual user's perspective. While I did analyze these user responses in terms of their ideological positioning, their experiences with and relative valuing of digital literacies, and their reported modes of self-tracking, these interviews were mainly used as stories, anecdotes, and narratives to invite user voices and stories into this project.

2.2.3.2.1 Ideological Positioning

I used the same frameworks for analyzing the ideological position of users that I did in the rhetorical analysis phase of this project. I coded responses according to 1) the metaphors they used to describe Fitbit and/or health tracking technology; 2) how each user positioned/described the purpose of the technology in relation to their goals; and 3) how they described themselves as compared to the average Fitbit user.

2.2.3.2.2 Modes of Self Tracking

In addition, I noted the modes of self-tracking that motivated each user. Lupton (2014) identifies the modes of self-tracking as personal, pushed, communal, imposed, and exploited. Personal self-tracking is self-motivated and typically private, while pushed self-tracking is encouraged or motivated by someone other than the tracker. Communal self-tracking is done to build connections and a sense of community, and imposed self-tracking is required by someone other than the tracker. Finally, exploited self-tracking involves the selling or distribution of health-tracking data without the user's explicit consent. Users might be engaged in one or more of these modes of self-tracking, which could impact their goals and motivations, along with their sense of agency regarding their Fitbit devices. Where possible, I also noted the users' perceived level of agency regarding their Fitbit use.

2.2.3.2.3 Digital Literacies

Finally, I identified the same categories of digital literacy (functional, critical, rhetorical, and metistic) used in the analysis of documentation. I coded responses for the types of literacies each user described through their experiences and noted any value-judgements users made about the relative value of each of these literacies.

2.2.3.2.4 Narratives and Stories

While I did code these narratives to look for some connections between factors like self-tracking modes, goals, and digital literacies, I primarily considered these interviews as holistic narratives that offer a personal, human perspective to this research. They made their way into this project largely in that form—as stories. For example, the anecdote about Alex and the beginning of Chapter 1 was shared with me during this interview process.

2.3 Research Goals

This combination of mixed methods used throughout this project was guided by the foundational beliefs that knowledge is situated, technologies are ecological, and digital literacies develop through ecologies of sponsorship. Through this process of data collection and analysis, I am beginning to understand the ecologies of sponsorship that support Fitbit use. In the next two chapters, I discuss the results of this research, providing some preliminary answers to my questions about wearable Fitbit devices.

3 Fitbit Narratives

In her 2009 TED Global Talk, Chimamanda Ngozi Adichie stated that “the single story creates stereotypes, and the problem with stereotypes is not that they are untrue, but that they are incomplete. They make one story become the only story” (Adichie, 2009). Stories are powerful, and the stories we hear and tell shape our experiences in powerful ways. Therefore, this project takes stories about (and by) Fitbit—and stories about (and by) Fitbit users—seriously.

This chapter analyzes some of these narratives, specifically those that surround Fitbit technology and its use. While traditional notions of literacy sponsorship support a top-down framework that focuses on the institutional storying of technology as the most important factor, these stories are incomplete. In this research, I respond by asking literacy scholars and educators to pay attention to ecologies of sponsorship. Thinking about digital literacies as ecological can draw our attention both to 1) the grand narratives produced by Fitbit as an institutional sponsor and to 2) the ways these narratives are supported and/or subverted by stories from users.

In the context of this project, I use the term “storying” to refer to the process of creating meaning through producing and sharing narratives about people, experiences, events, or objects. In particular, this project investigates the ways that this storying of Fitbit works to create what we might call “grand narratives,” a term introduced by Jean-François Lyotard (1984). Sometimes referred to as meta-narratives, these grand narratives can be understood as the stable, shared understandings that develop about people, experiences, events, or objects. These shared understandings form partly through the accumulation of stories that inform and reinforce one another. And once formed, these grand narratives can be difficult to trouble, question, or change.

This project generally—and this chapter more specifically—explores several of these stories in relation to a set of guiding questions, first defined in Chapter 2:

1. How do users understand the potentials and constraints of their wearable health tracking devices?
 - 1a. How does the official, Fitbit-sponsored, documentation that surrounds health-related technologies construct grand narratives about the technology itself, the people who use it, and the purpose or goals that motivate those users?
 - 1b. How have users embraced or challenged these grand narratives through their consumption of Fitbit’s documentation or the production of their own documents?

I will address these questions by analyzing the grand narratives constructed explicitly and implicitly by Fitbit through their official documentation (i.e., user manuals, websites,

advertisements, emails, etc.). This analysis will show that Fitbit presents a very specific, narrow kind of narrative about its users, even as that narrative contains stable contradictions in user identities.

This grand narrative is complemented and challenged by the integration of user-generated materials and the multiple, divergent narratives they produce. By highlighting the ways groups and individual users story the technology, this analysis highlights multiple points of articulation in the ecology of sponsorship that has emerged surrounding these Fitbit devices.

3.1 Fitbit's Grand Narrative

Grand narratives about Fitbit technology and its users create persistent frames for the technology, and in some cases, dictate their use (and/or abandonment). These grand narratives are formed largely by official, Fitbit-generated resources. These kinds of resources are often highly self-referential and easy for users to find, since sponsored ads from Fitbit appear near the top of most Google searches with “Fitbit” in the title. As a result, users are exposed to this documentation early and often throughout their time as Fitbit users.

Reflected in these documents is the tendency that Fitbit trackers have to be marketed to and developed for specific target groups—those we might think about as ideal users. Whether these users exist in reality (or only in abstraction), this process of design and marketing has tangible effects for users and potential users of the technology.

As Neff & Nafus (2016) have noted, the “noise of personal context” (p. 111) is often ignored in technology development, which leads to user dissatisfaction and abandonment of the technology. However, it remains common for companies like Fitbit to focus on what they see as their ideal users and ignore the wants or needs of users who fall outside that “normal” spectrum of goals and identities. This creation and repetition of specific kinds of stories about the technology and its users creates a grand narrative, even if this grand narrative doesn't reflect the reality of all, or even most, actual users.

Still, these narratives have several distinct, consistent features. This analysis has identified the following assertions made by Fitbit as both persistent (appearing across a wide range of documents) and characteristic (working to define the technology and/or users):

- Fitbit technology leads to self-knowledge through quantification
 - Users' lives will improve if they purchase and use this technology
 - Users care about their health, and their primary goal is weight-related
- Users have specific privileges that will help them reach their goals

- Users (probably) have disposable income and free time
- Users are immersed in supportive communities, online and offline
- Users are able-bodied
- Users want their experience to be easy
 - Users prefer easy interfaces to customizability
 - Users want Fitbit to turn their data (information) into actionable knowledge (understanding)

If we think about traditional models of literacy sponsorship and look to Fitbit as the main (or only) source of resources and knowledge about their technology, this grand narrative becomes the truth about Fitbit and its users. This is the tendency Kimball (2006) acknowledges in his argument that “given our dependence on technology, technical documentation will inevitably happen in the shadows, its significance and role in culture yet to be exposed” (p. 84). The stories repeated in these Fitbit-created documents can appear natural to the extent that we might forget they are not neutral. However, like Kimball, I acknowledge that “extra-institutional documentation” (p. 84) can often hold more insight into the role technology plays in people’s lives, and it may also draw our attention to the constructed nature of grand narratives that surround technologies like Fitbit.

The democratization of technical communication (Kimball, 2006) and the rise of complex ecologies of sponsorship have created opportunities for users to re-story the technology through the sharing of their own, sometime counter-, narratives. The wide range of unofficial documentation created by Fitbit users acknowledges a range of truths about the technology: some of these assertions reinforce Fitbit’s grand narratives, and others passively or actively resist those narratives.

Through this analysis, I have noted the following common features of user-generated counter narratives:

- Users can have a wide variety of goals
 - Users can decide for themselves how to use their data
 - Users may or may not be ideal, and they may or may not *want* to be ideal users (as Fitbit has portrayed them)
 - Outlier and non-normative experiences matter
- Users do not always like the technology and sometimes abandon it

Throughout this chapter, I’ll focus mostly on user documentation that challenges or subverts the grand narratives produced by Fitbit. While not all of the documentation I encountered presented these alternative narratives, these documents do the most

interesting work in terms of re-storying the technology and providing users with something they could not gain access to through the official documentation alone.

In the following sections, I'll explain each of the grand narrative assertions one by one in order to show how, together, they create a persistent characterization of the technology that is impossible to completely separate from the many ways that it might be used. Some of these assertions are explicitly stated, but they are also frequently implied, which I'll highlight through the integration of specific examples. In each section, I'll also highlight user narratives that support or resist these assertions and work to re-story the technology, often in small, incremental ways.

3.1.1 Data as Self-Knowledge

Many of the official, Fitbit-generated resources work to support specific kinds of goals and identities for users, which are probably familiar to anyone who has seen wearable health trackers like Fitbit advertised. These products are being positioned as neutral tools for self-knowledge through quantification that can help users reach specific goals, like losing weight or increasing general fitness and heart-health. What's more, Fitbit is positioning these results as an automatic consequence of having Fitbit-generated data available.

The following image (Figure 3.1) demonstrates this strategy in its text: "See how Fitbit can help you exercise, eat, sleep, and live better." This image appears on Fitbit's homepage, or the first contact many users have with Fitbits' online presence.

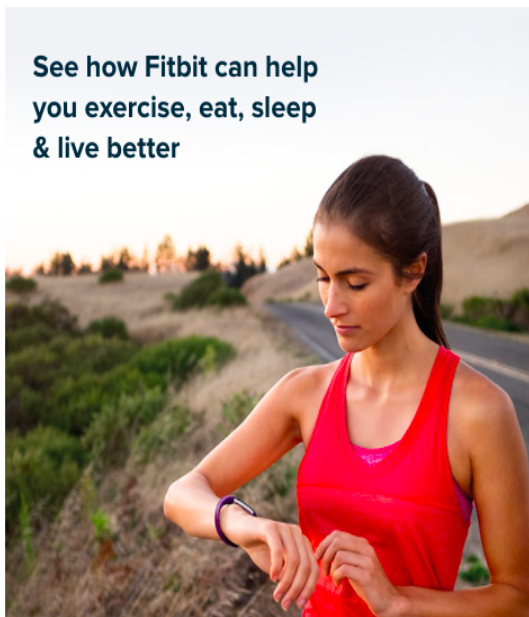


Figure 3.1. Fitbit home page. Woman standing by trail, looking at wrist. Text reads: "See how Fitbit can help you exercise, eat, sleep, and live better." Image source: Screenshot from fitbit.com.

By clicking the link contained within that image, users are directed to a subpage, part of which is captured in the image below (Figure 3.2). The text reads “Meet fitbit/When it comes to reaching your fitness goals, steps are just the beginning. Fitbit tracks every part of your day—including activity, exercise, food, weight, and sleep—to help you find your fit, stay motivated, and see how small steps make a big impact.” On the surface, this text and the icons that match each of these tracked items, seem to create a broad, nuanced picture of health.

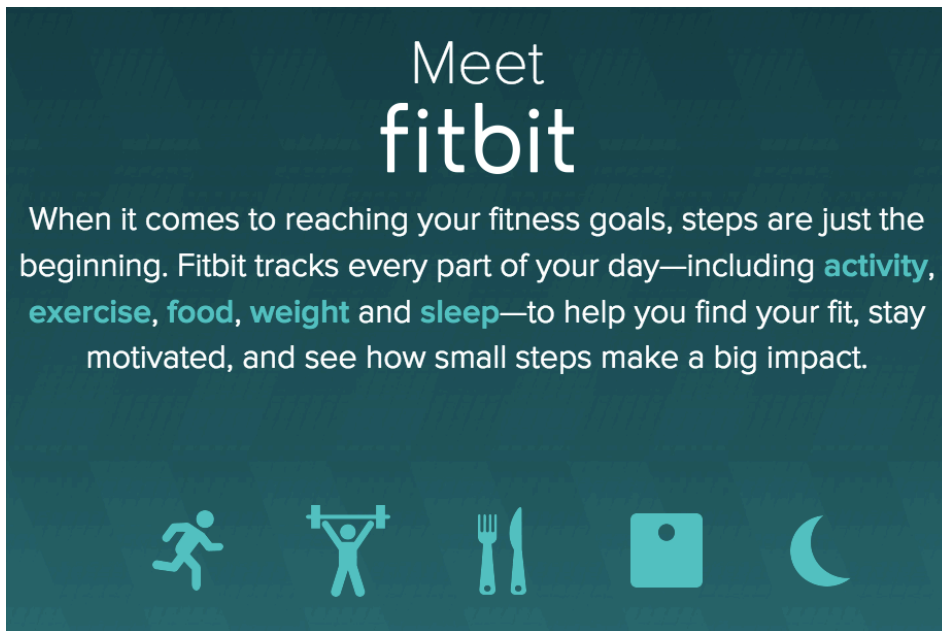


Figure 3.2. Fitbit Advertisement. Text and icons over colored background. Text reads: “Meet fitbit/When it comes to reaching your fitness goals, steps are just the beginning. Fitbit tracks every part of your day—including activity, exercise, food, weight, and sleep—to help you find your fit, stay motivated, and see how small steps make a big impact.” Image source: Screenshot from <https://www.fitbit.com/whyfitbit>.

However, it’s important to question what is *not* represented in Fitbit’s version of “every part of your day” (Figure 3.2). Because the technology relies on quantifiable data, any qualitative information about the user is left out: how they felt that day; what their mood was like; if they experienced chronic or unusual pain; their mental state; their stress level; etc. Instead, the goal is on what can be measured, most of which could be used by Fitbit to track progress toward weight-related goals.

The explanation of these seemingly comprehensive and infallible sources of data paired with images of users like the woman in Figure 3.1, can (and seemingly aim to) lead users to believe that Fitbit can solve their problems, and help them feel and look as fit as the models that represent Fitbit products. If only they buy this \$100+ piece of technology, maybe they will be able to run or hike on a scenic country road like the woman pictured in Figure 3.1.

These kinds of messages are effective, and research has found that “half of surveyed Americans claimed to believe that wearable technology could improve life expectancy by ten years (56 percent), assist in reducing obesity (46 percent), or increase athletic capacity (42 percent)” (Neff & Nafus, 2016, p. 24). These beliefs persist despite the lack of comprehensive medical studies to corroborate any of these potential benefits. Yet we believe in the power of these wearable technologies, and the knowledge they seem able to provide about our bodies and our health.

The assumption that Fitbit could solve all of a user’s problems might seem like an absurd conclusion based on simple advertisements like those presented in Figure 3.1 and Figure 3.2, but Fitbit bombards users with text, images, and videos that explain—both implicitly and explicitly—how Fitbit will improve their lives. These messages repeat over and over again that if people care about themselves, they should invest in their health and well-being by purchasing a piece of technology that can help them “exercise, eat, sleep, and live better” (Figure 3.1).

In addition, Fitbit presents a very narrow view of what “healthy” might look like in their assertions that they can help users improve their health. While some attention has been paid in the most recent Fitbit software updates to the connection between physical and mental health (there’s now a guided breathing function in some of the devices), the focus is still largely on weight with the addition of Fitbit’s new cardiac health score: this is unique to Fitbit, and is based on BMI, resting heart rate, and heart rate while running (Fitbit, 2018a).

While Fitbit acknowledges that some users might care about their health in different ways, the focus is still on weight loss, with little attention to users who do not share this goal, at least to some extent. This means that users with alternative goals who do not see themselves represented in this Fitbit marketing may need to turn to user-generated content to provide alternative kinds of stories. And if they are still unable to find stories that sound like theirs in user-maintained online spaces, they may choose to fill these gaps by authoring and sharing their own narratives.

3.1.1.1 Counter Narratives: Data as Proof

While most users still view Fitbit as a tool for self-knowledge, user-generated materials are more likely to explicitly note that users can decide for themselves what to do with their information. For example, a user with chronic insomnia might use their Fitbit to log their sleep. They then might choose to use that data in consultation with a health-care professional to advocate for themselves and their experiences, or as evidence that current treatments aren’t working.

When they have success (or sometimes failure) in using their data in these ways, they often choose to share their experiences with other users or potential users in online communities like the insomnia sub-reddit. Some of these users are no longer treating

Fitbit as a tool for self-knowledge through quantification. Instead, they're using it to create a seemingly objective witness to their subjective experiences. An example of this kind of re-storying can be seen in Figure 3.3.

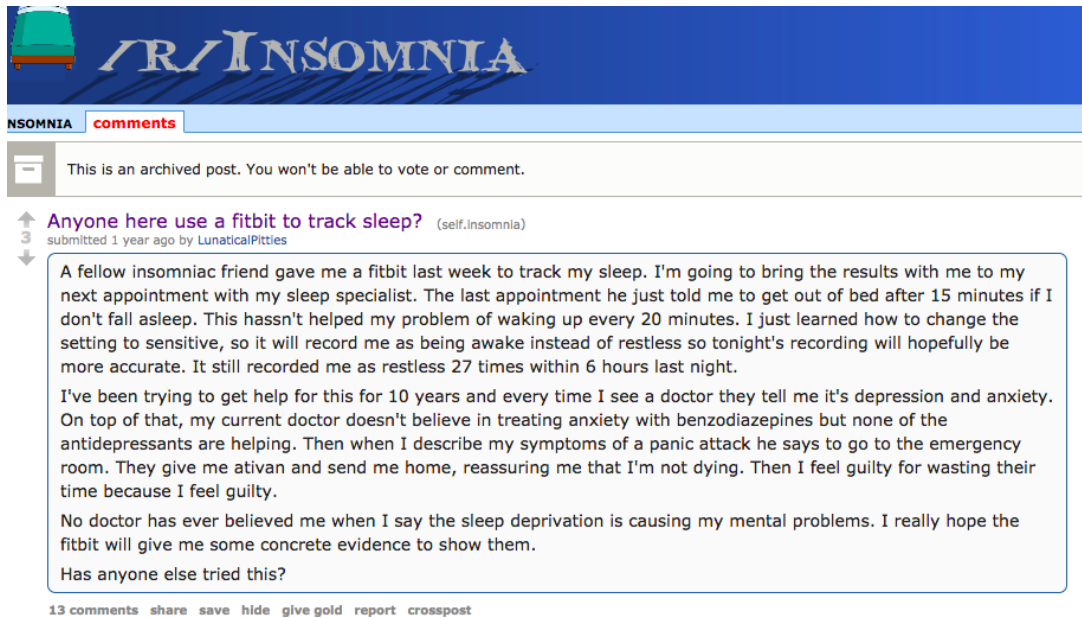


Figure 3.3. /R/ Insomnia Post. User post asking “Anyone here use fitbit to track sleep?” Text reads: “A fellow insomniac friend gave me a fitbit last week to track my sleep...”

Image source: Screenshot from

https://www.reddit.com/r/insomnia/comments/4eazu3/anyone_here_use_a_fitbit_to_track_sleep/?st=jf4suqbg&sh=4f8fbeat

This post is not hosted by Fitbit, but it was posted to an online community that is made up partly of Fitbit users, and a conversation developed among Fitbit users in this space. In the initial post, the author writes “a fellow insomniac friend gave me a fitbit last week to track my sleep. I’m going to bring the results with me to my appointment with my sleep specialist...No doctor has ever believed me when I say the sleep deprivation is causing my mental problems. I really hope the fitbit will give me some concrete evidence to show them” (Figure 3.3). In this passage, a user is sharing an experience where her multiple identities of insomniac and Fitbit user intersect, and she is presenting an alternative goal to other users: Fitbits can be purchased and used as a tool to advocate with health-care providers.

Other users responded in this space in a number of ways: validating the original posters’ experiences, offering advice based on their experiences, and offering support for the poster moving forward. One user replied: “I'm going to take a shot in the dark and guess you're female? If not, don't panic, it's just very common for women to have their problems dismissed by doctors as inconsequential” (Reddit, 2016). To this, the original poster replied, “Thank you so much. Yes I am female, and it does feel like my problems are dismissed. Thank you for listening. Thank you for making me feel like I'm not crazy” (Reddit, 2016). Here we can see counter-narratives forming around the interaction

between these users. Many identities are intersecting (Fitbit user, female, mental health patient, insomniac), and there is an acknowledgement that the users' experiences and needs are specific to her particular identities and contexts.

There is also an acknowledgment that Fitbit devices alone are probably not enough for this user to solve her problems. Another user replies with this advice: "Next, keep a log of [your experiences] (you don't have to write it down when you wake in the night) and also record how you feel in the morning along with any residual pains in the morning, any dry mouth, that sort of thing" (Reddit, 2016). This post recognizes that quantitative data alone (like that produced by a Fitbit device) is likely not enough. Instead, the community states repeatedly in this post and the discussion that follows how data from a tracker like Fitbit could be used in conjunction with other information to "verify" personal experiences or subjective feelings when interacting with a doctor. As a result, the Fitbit device is being repositioned in this space as an evidence-producer rather than a knowledge-producer.

Near the conclusion of this discussion, the original poster checks back in with the group to share that "so far the fitbit has just proved to me what I knew to be true. It feels so good to have that justification. It gives me the energy to make my doctor pay attention to me and stop dismissing me as just depressed. I'll make another appointment soon and let you know what happens" (Reddit, 2016). Through this discussion and community interaction, this user shared her narrative of Fitbit as a means to gain traction with her doctor and was offered stories from other community members who had used Fitbit for similar goals.

Often, data from self-trackers like Fitbit is viewed as a means to control or manage a health condition. Rettberg (2014) explains that "this intertwines with the deeply-rooted cultural notion that 'seeing' makes knowledge reliable and trustworthy" (p. 71). However, some of these users are imagining the data differently. This might be especially true for those dealing with a chronic condition like insomnia, who want to understand their experience. These same users might also feel like they need external verification in order for people like health professionals or loved ones to take them seriously.

This Reddit thread presents a story that imagines the data not as a direct way to manage a condition or solve a health-related problem. Instead, the data is positioned as proof or evidence of a user's subjective experience that might not otherwise be taken seriously. These kinds of stories may *not* be presented or shared in most Fitbit-generated documentation, but they *do* characterize the reality of Fitbit use for this group. Therefore, these user narratives do important work to challenge and extend the grand narrative produced by Fitbit.

3.1.2 Privileged Users

In its documentation, Fitbit has created an idealized user that carries an immense amount of privilege. Not only are these users in financially stable situations with free time and

money, but they are also represented as able-bodied and enmeshed in supportive communities.

3.1.2.1 Users with Disposable Incomes and Cross Selling

Despite the possible air of altruism that surrounds health-promoting companies, Fitbit is primarily in the business of making money, and much of its documentation focuses on selling its products. Pictured below in Figure 3.4 is a small selection of the products Fitbit sells. In addition to accessories like extra wearable bands in a variety of colors, Fitbit offers track jackets, hats, shirts, and more. Fitbit has also recently started offering online training services, which require an annual subscription fee on top of a one-time technology purchase. Fitbit also frequently releases new models of their trackers with additional features and encourages people to become repeat customers, or users that will continue to buy Fitbit products.

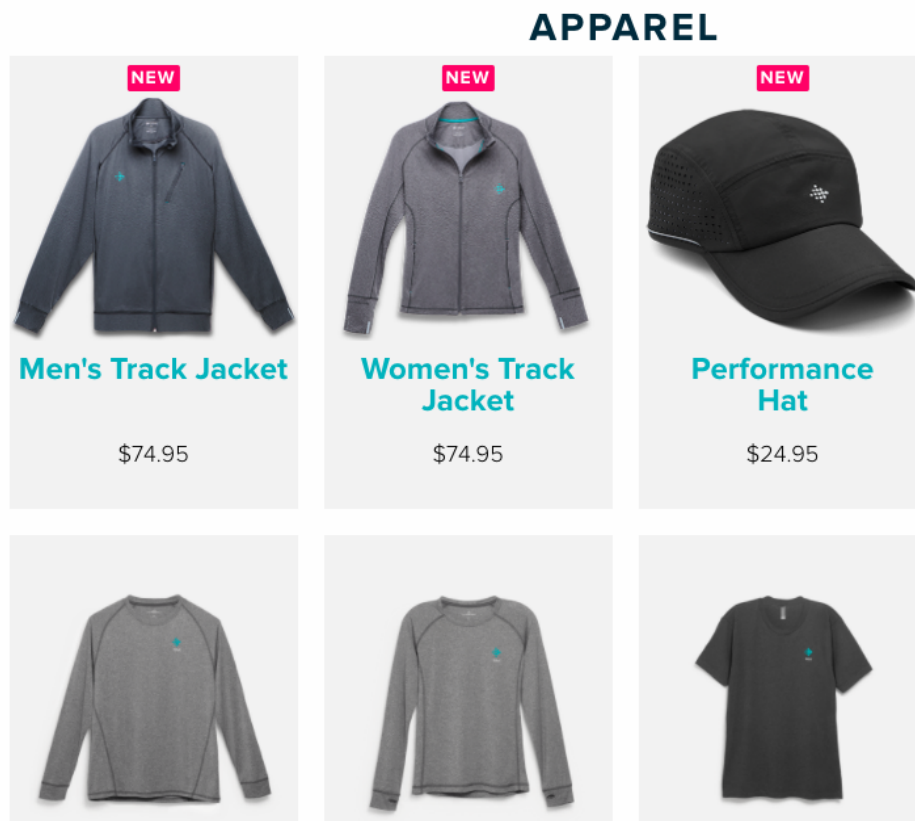


Figure 3.4. Fitbit Apparel. Images of Fitbit apparel with prices. Example merchandise: “Men’s Track Jacket/\$74.95” Image source: Screenshot from <https://www.fitbit.com/store#apparel>

The initial cost to become a Fitbit user currently ranges from the Zip model (\$59.95) to the Ionic model (\$329.95). However, Fitbit frequently advertises and aims to cross-sell other relatively expensive products like a Bluetooth scale (\$129.95), interchangeable

watch bands (\$29.95-\$295), wireless headphones (\$129.95), clothing and accessories (\$19.95-\$79.95), and the new Fitbit Coach (\$39.99 for an annual subscription). While it's possible to purchase a tracking device second hand and avoid spending additional money on Fitbit products, Fitbit's ideal user has the disposable income necessary to continue buying new models as they come out (about once per year); can afford to buy accessories like bands, scales, and headphones; and would be willing to pay a subscription fee to access digital content like videos and audio workout prompts.

Although not as expensive on average as some other wearable options like the Apple Watch (\$329-\$749), Fitbit still focuses on consumption, with the implication that "good" users can and should buy multiple products. And failure to see the results Fitbit promises (including better health and weight loss) is often met with the suggestion that users purchase or use additional Fitbit goods and services.

For example, Fitbit is linking more of its products to its Fitbit Coach services, and they recently published the article excerpted below, titled "Hit Your Goals Faster With Recommended Workouts from Fitbit Coach." In this article, Fitbit asserts the following:

Picture this: you ran five miles yesterday wearing your Fitbit device. That was a good workout, right? Today, when you open your Fitbit app, you'll see some workout suggestions from Fitbit Coach in the "Guidance" tab...

Fitbit Coach focuses on your feedback from each of your workouts—whether your goal is to Get Strong, Get Lean, Get Moving, or get a Daily Dose of fitness. And based on your input, as well as tracking what other Fitbit Coach enthusiasts like you are working on, you'll receive suggested workouts to complement your journey.

Make the most of your customized exercise experience; the more you wear your Fitbit tracker and complete Fitbit Coach workouts, giving feedback as you normally do, the smarter the workout recommendations become. And thanks to a deep connection between the Fitbit app and the Fitbit Coach app:

- Fitbit Coach workouts will be logged in the Fitbit app giving you credit toward your weekly exercise goal.
- Fitbit Coach users who wear a Fitbit device equipped with PurePulse continuous heart rate tracking, such as Fitbit Blaze, Charge 2, and Ionic, during a Fitbit Coach-logged workout will see their tracked heart rate trends in the exercise summary within the Fitbit app.
- This bigger picture, or holistic view, of your activity is exciting, and it's just the beginning; you can expect to see even more relevant guidance woven throughout your fitness journey as more features are added to Fitbit Coach.

Ready to take your health and fitness journey to the next level? Go Premium to get the best of everything Fitbit Coach has to offer (Fitbit Staff, 2017).

In this blog post, we can see Fitbit not only marketing their newest service (the Fitbit Coach subscription), but also trying to cross-sell other products. For example, users are encouraged to upgrade to higher-end Fitbit trackers that have PurePulse heart rate monitoring, in order to get all the benefits available from this service. They also are implicitly reminding users of the benefits of brand loyalty and becoming a repeat Fitbit customer with their reference to the “deep connection” between Fitbit products. Users without the disposable income necessary to purchase or use these connected families of products are left out of these conversations, and Fitbit is not designing and marketing for these users.

3.1.2.1.1 Counter Narrative: Tracking on a Budget

Despite Fitbit’s focus on consumption, users frequently find ways to engage with these technologies even when they are unable or unwilling to spend hundreds of dollars per year on Fitbit products. While Fitbit’s product advice often focuses on getting the most features and most compatibility to pair multiple Fitbit products, other resources are available to help users compare and consider health tracking devices.

For example, Figure 3.5 offers advice from iMore.com, in an online article titled “Which Fitbit is Best for Seniors?” Among other considerations, the author suggests affordability as a key factor for users who are just starting to decide if wearable health tracking technologies are something they are interested in. Specifically, they write “If you’re not sure if a fitness track[er] is right for you...it’s probably a good idea to start with the least expensive model” (Figure 3.5).

Which Fitbit is the cheapest? Zip

If you're not sure if a fitness track is right for you, but you want to give it a while, then it's probably a good idea to start with the least expensive model.

The Fitbit Zip retails for \$59.95 and is a small, clip-on tracker you can attach to your waistband, belt, or pocket (or wear it as a bangle). It tracks how many steps you take and how long you've been active so you can monitor your daily progress. If you have a smartphone, the Fitbit Zip will sync to it and show you your fitness history in more detail in the Fitbit app.



The Zip is lightweight and very simple to use. It's perfect for both leisurely afternoon strolls or more intense exercise. And you really can't beat the price or durable when it comes to Fitbit trackers.

Figure 3.5. iMore Article. Title: “Which Fitbit is Best for Seniors?” Text reads: “Which Fitbit is the cheapest? Zip/ If you’re not sure if a fitness track is right for you, but you want to give it a while, then it’s probably a good idea to start with the least expensive model...” Image source: Screenshot from <https://www.imore.com/which-fitbit-best-seniors>

This article also acknowledges that more connections are not always better (or possible) in this phrasing: “If you have a smartphone...” (Figure 3.5). While Fitbit itself does not often acknowledge issues of access in their advertisements, blogs, website, or other materials, access to networks of technology is an important factor in deciding if or how to use Fitbit devices.

In addition to more formal articles, users are also sharing cost concerns in online spaces like Twitter. Below are three tweets, all using #fitbit, that express concern over cost or strategies for making Fitbit use more affordable.

Eunice @elm57 1/23/13

I’m considering #fitbit. Any thoughts? Does the less expensive one work as well?

Cookie @Cooking_Radio 2/11/18

I #bought a #cheap #Japanese #knockoff of a #fitbit, it #arrived #today. I’m #impressed...

Emma @_emmaward 3/12/18

For anyone else that has nothing but trouble with #FitBit charge 2 straps the cheap ones from ebay for \$4 are absolutely brilliant cheers for nothing #fitbit

Here, users are asking for advice in choosing the least expensive options that “work,” explaining their choice to use Fitbit knockoffs rather than Fitbit branded technology, and advising others to pair 3rd party (and less expensive) accessories with genuine Fitbit devices. Each of these users challenges the idea that Fitbit users should be able or willing to buy additional Fitbit branded products to “properly” support their tracking or health-related goals.

3.1.2.2 Community Support and Sharing

In addition to disposable income, Fitbit also assumes that users have supportive networks in both digital and physical contexts. We can see an example of this in Figure 3.6, which tells users to “stay inspired on your fitness journey by sharing stats and challenging friends and family.” This assumes that sharing personal, sensitive, and potentially medically relevant data, is something that users *should* and *do* want. It also implies that this sharing is necessary for the technology to work well. This could lead users to feel pressured to share this information, or entitled to the personal information of their friends, family, or even acquaintances.

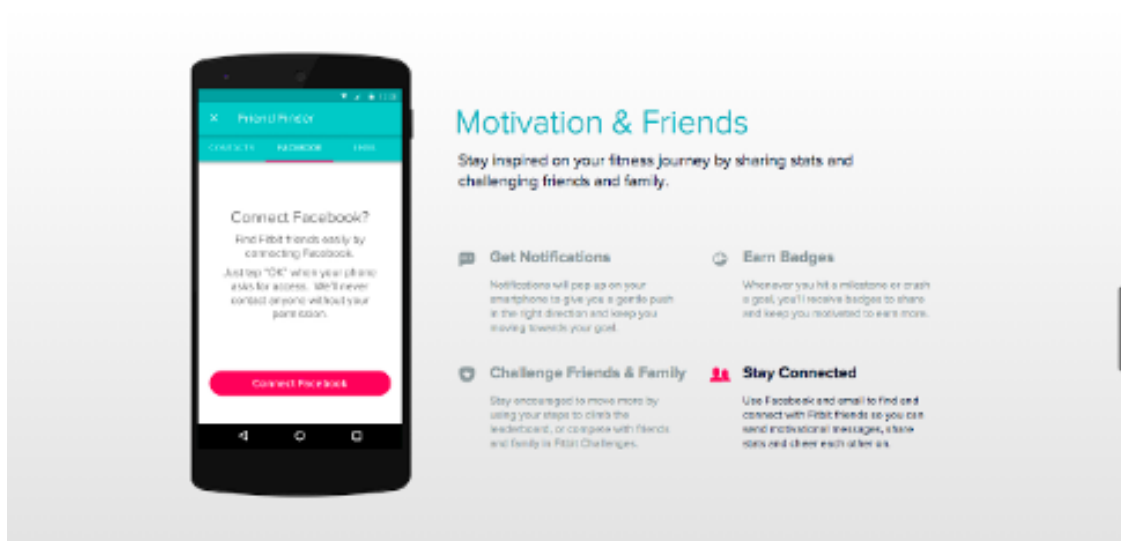


Figure 3.6. Fitbit App Promotion. Images of a phones using the Fitbit app to connect to Facebook. Several icons and features available in the app are listed to the right of that main image. Main Header Text: “Motivation & Friends: Stay inspired on your fitness journey by sharing stats and challenging friends and family.” Image source: Screenshot from <https://www.fitbit.com/app>

Like the lack of consumption noted earlier, this pressure to connect can also be used to place blame on users, rather than the technology, if users do not see their desired outcomes. By placing the focus on sharing information and tracking within a community to stay motivated and find success, Fitbit is encouraging and normalizing modes of self

tracking other than the personal. They even imply that motivation depends on these external forms of validation.

For example, in Figure 3.5, Fitbit encourages users to “use Facebook and email to find and connect with Fitbit friends so you can send motivational messages, share stats and cheer each other on.” This positions Fitbit as a social space, like Facebook, where users should connect with friends and build supportive and/or competitive networks. Left unstated is the assumption that the loss of privacy is worth the benefits these communities will offer.

This promotional material demonstrates one of the ways that Fitbit is explicitly encouraging communal self tracking by creating online spaces for communities and telling users that they should “stay connected” and “challenge friends & family” (Figure 3.6). Through these same online groups and challenges, Fitbit is also making space for pushed and imposed tracking. If communities and in-groups form within these Fitbit spaces, users can feel pressured to participate as well, or risk being excluded from sub-communities within their workplaces, schools, families, or other social groups.

This ease of comparative tracking has also inspired some workplace and wellness programs to purchase trackers for their employees and impose tracking on groups, often sponsoring competitions or offering rewards for meeting specific activity benchmarks. User responses to these forms of imposed tracking will be discussed further in Chapter 4. Notable here is that Fitbit does not offer critique of these communal, pushed, or imposed forms of tracking. Instead, they offer them as tools for user success in reaching their goals.

3.1.2.2.1 Counter Narrative: Privacy Concerns

Like all health-tracking technology, Fitbit’s ability to track information has sometimes outpaced its ability to protect the privacy of that information. And there have been numerous data breaches in the last decade since Fitbit was founded in 2007, ranging from embarrassing to potentially dangerous.

For example, in 2011, Fitbit came under scrutiny for making users’ profiles publicly searchable in places like Google by default (Rao, 2011). This meant that any user who did not proactively change their settings was making private information publicly available. This caused a stir when users realized others could Google them and find their personal logs, including those for sexual activity, that were not anonymized or hidden. Fitbit quickly moved to make user profiles less public by default, but many users were understandably upset, and news sources like *TechCrunch*, *Forbes*, and *CNET* cautioned users to be careful about buying these devices and tracking sensitive information with these relatively new forms of wearable technology.

Despite early incidents like this in Fitbit’s history, these trackers are still extremely popular. However, Fitbit is still dealing with information privacy concerns. One of the

most recent examples included the inadvertent leaking of military troop locations in areas like Iraq and Syria in 2018 (Perez-Pena & Rosenberg, 2018). Wearable trackers, including Fitbit, were being paired with a run application called Strava, a social networking application for runners, which creates public maps by sharing information about users' routes with the larger Strava community. By using Fitbit or other connected GPS, Strava users were able to see "hot spots" on maps in these countries where multiple military personnel were tracking runs, and some security analysts have warned that individuals could also be identified and tracked based on this publicly available information.

While the fallout and implications of events like this is not yet fully understood, it's becoming clear that Fitbit, Strava, and other tracking technology that rely on social networking and sharing of information have the potential to leak sensitive and dangerous information.

Despite incidents like these, Fitbit rarely discusses the potential security concerns of using their products. Instead, Fitbit provides steps users can take to make their accounts more private. In the Fitbit help forum, users are told "With the Fitbit app you can personalize your profile and control the information you share with your friends" (Fitbit, 2018b). Users' potential privacy concerns and needs are condensed into the list of questions presented below:

With the Fitbit app you can personalize your profile and control the information you share with your friends. Choose a shortcut to see the answer below:

- What is my display name?
- How do I change my name or user name?
- How do I update my email address?
- How do I share information about me?
- How do I add or change my profile photo?
- How do I add or change my cover photo?
- Who can see my average daily step count?
- Can I share my location?
- Who can see my personal stats?
- Who can see my badges and trophies?
- Who can see my list of friends?
- How do I remove friends?
- How do I block friends?

(Fitbit, 2018b)

While Fitbit allows users to ask things like "Who can see my personal stats?" it leaves out discussions about when and why those users might want or need to restrict access to their data.

Instead of being hosted by Fitbit, many of these critical conversations happen in other places, including news articles, discussion boards, and YouTube videos. Detailed below is a question posted on Quora, an online question and answer forum that frequently focuses on technology. A user posted “What are the privacy concerns about Fitbit?” (Quora, 2015) and the following answer was produced by the community:

It's the fact that the Fit-bit device is an "Internet of Things" device. These types of devices have sensors that record physical elements such as sweat, fat burn, and many other elements and transfer them into data that we can understand. The fact that Fit-bit has data that is linked to your bio-metric history can be a dilemma if in the wrong hands.

For example, if the Fit-bit captures irregular patterns of your body functions within its data and it fall in the wrong hands of a corporation potentially considering you for hire. The corporation can falsely interpret the results as a risk to their organization and deny you instantly without considering you for an interview.

The Corporation (Recruiter) would discriminate off of your bio-metric data rather than consider your actual work experience. But this is an extreme example of a privacy concern for Fit-bit. However, Companies (Recruiters) have been using these same methods for considering and potential employees for hire using social networks like Facebook (Quora, 2015).

While this answer responds to only one of the many potential privacy concerns users might raise, Quora has made space for this conversation to begin in ways that Fitbit might not. While Fitbit likely does not want to highlight the ways that a user’s data could be used against them if it were leaked, lost, sold, or unknowingly shared through default privacy settings, these are real concerns for many users.

3.1.2.3 *Young, Healthy, Fit Users*

Finally, the privileges Fitbit assumes of its users extend to users’ physical health and fitness. In almost all depictions, Fitbit represents users as physically active, with no visible health or mobility issues. The array of pictures below in Figure 3.7 all came from Fitbit blog posts, and they were the first Fitbit-owned images to appear with a Google image search of “Fitbit user.”



Figure 3.7. Promotional images of Fitbit users. Image sources: blog.fitbit.com

These images are typical of those presented throughout Fitbit’s online presence. Users are shown as young (20-30 years old), often white or relatively light skinned, mostly women, all thin and fit-looking, and frequently engaged in active outdoor activities. It is notable that none of these user representations are overweight, middle-aged or older, or living with any kind of visible disability or physical impairment.

The consistency of this narrow visual representation of users is interesting because it seems to leave out more groups than it includes. In reality, many Fitbit users struggle with chronic conditions, pain, mobility issues, or other physical concerns that motivate them to start tracking their steps in the first place. However, these users are not likely to see themselves represented in Fitbit’s visual characterizations of their users.

3.1.2.4 Counter Narrative: Real, Complex Users

Users who do not fit the ideal user mold might not abandon the technology, but they are more likely to feel isolated, marginalized, or atypical. Because Fitbit frequently designs and markets their technology for young, fit and healthy users, groups that are dealing with disabilities or chronic conditions often seek out support elsewhere, like the insomnia sub-reddit community discussed previously in this chapter.

These real, complex users are often interested in features that would allow them to more effectively use the technology to suit their individual needs. For example, in Figure 3.8, a user explains his desire to pair his Fitbit device with a Dexcom G5, which he uses to monitor his blood sugar levels.

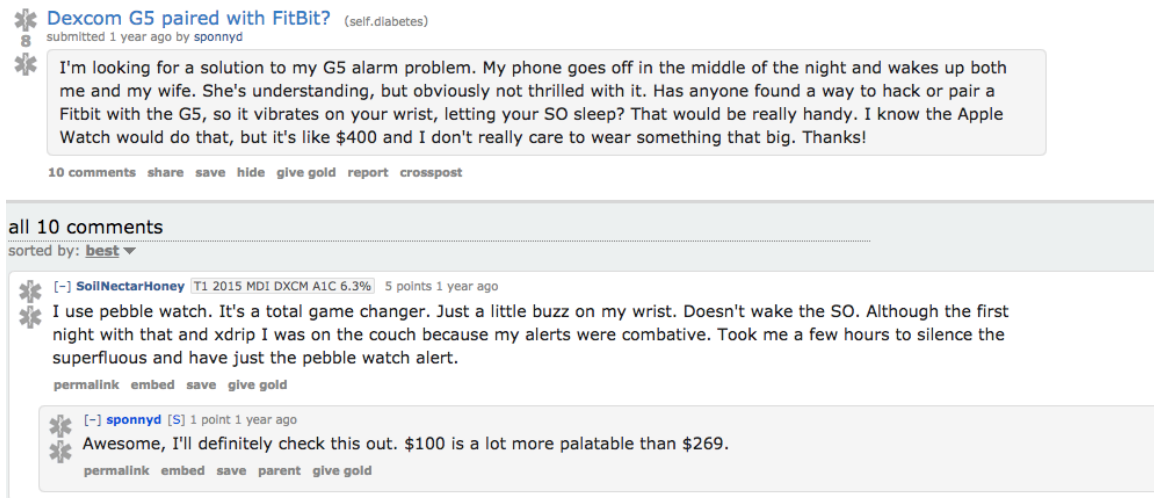


Figure 3.8. /R/ Diabetes Post. User post asking, “Dexcom G5 paired with Fitbit?” Text reads: “I’m looking for a solution to my G5 alarm problem. My phone goes off in the middle of the night and wakes up both me and my wife...Image source: Screenshot from https://www.reddit.com/r/diabetes/comments/5dtqns/dexcom_g5_paired_with_fitbit/?st=jfa2bf8y&sh=00724999

As a diabetic, this user is interested in pushing blood sugar alerts from the Dexcom to his wrist-based Fitbit. He asks the online diabetic sub-reddit community, “has anyone found a way to hack or pair a Fitbit with the G5, so it vibrates on your wrist, letting your SO [significant other] sleep?” (Figure 3.8). Since this user was unable to find a built-in solution from Fitbit, he reached out to another community to ask for “hack” solutions that could force the technology to function in the ways he wanted, even though it had not been designed to function in that way.

In this same discussion, another user responds based on his or her own experience, explaining that, “I use pebble watch. It's a total game changer. Just a little buzz on my wrist. Doesn't wake the SO” (Figure 3.8). The original poster responded, “Awesome, I'll definitely check this out. \$100 is a lot more palatable than \$269” (Figure 3.8), simultaneously resisting Fitbit’s messages that Fitbit products always offer the best solutions, and that cost is not a major concern for most users.

Continuing the conversation, another user reiterates similar advice, warning that the poster “won't have any luck with the Fitbit as it's closed source. I recommend Pebble watch!” (Figure 3.8) and following up by offering to help the user if they decided to switch to Pebble, writing “don't hesitate to reach out for help” (Figure 3.8). Users in this community are noting the limits of Fitbit devices, and offering alternatives for users who may have been overlooked in the development of Fitbit tracking technology. While Fitbit proudly states that they partner with a wide array of wearables and apps, they did not support pairing with specialized blood sugar monitoring technology. And they do not offer interfaces and services that can easily be customized to reach each users’ specific needs, due partly to their commitment to creating “easy” technology.

3.1.3 Ease of Use

As the previous example demonstrated, Fitbit is not as customizable as some other wearable health tracking technologies. This is partly because Fitbit sees and represents their ideal users as people who want their technology to be easy. These ideal users value a shallow learning curve, even if that ease of use comes with a loss in functionality or customizability of the technology itself. This places value on a surface level usability, or appearance of usability, rather than the ability of users to engage meaningfully with technology to best suit their needs.

For example, the Fitbit dashboard interface offers some level of customizability. Figure 3.9 shows a portion of my dashboard for a single day. Within this interface, I am able to rearrange these boxes, potentially moving the sleep data to closer to the top of the page. I could also set the “goal” numbers for the categories shown such as steps, calories burned, miles, active minutes, floors, sleep, or calories taken in. I could also remove boxes that I was not using, like the calorie in/out box on the bottom right.



Figure 3.9. Fitbit Dashboard Interface, Google Chrome from February 22, 2018. A series of data is displayed in boxes, including “steps,” “cals,” “miles,” “active mins,” “floors,” “heart rate,” “sleep,” and “left to eat.” Image source: Screenshot from my Fitbit dashboard (logged in to my account).

This limited array of choices creates the appearance of customizability. These limited choices are easy to set, and the interface functions mostly through drag-and-drop (to rearrange) and a set of text boxes (to enter goal numbers). Also, it is very easy for Fitbit to allow users to share or pair other apps and transfer data from one platform to another. I was able to share data between Fitbit and other apps through the “Discover Compatible Apps” page in the menu. I was then redirected to a login page for the apps I wanted to pair, and a pop-up window to confirm which data I wanted shared between platforms.

However, it is exceedingly difficult for users to access or manipulate their raw data from Fitbit. Instead, default Fitbit settings project data into visual forms that are easier to parse on first inspection, but also do the interpretive work for users (instead of letting users make sense of their own data). Closed circles and timeline graphs imply values on the data, often based on arbitrary standards like the American Heart Association’s recommendation of 10,000 steps per day. This generalizes user experience in ways that encourage users to compare themselves to Fitbit’s imagined, ideal user, rather than allowing them to choose how the interpret and use their data.

This paint-by-number tracking with the idealized user as the end goal creates problems for users who do not fit this mold, or would just like more options. As Neff & Nafus

(2016) argue, “the problem as we see it is that many off-the-shelf tracking options, sold through appeals to ‘empowerment,’ do not actually help people figure out which questions they should be asking, much less how to ask the next question, test ideas, or make discoveries. As a result, few people are getting out of their self-tracking devices what they hoped they would, but they are also incurring some of the societal costs” (Neff & Nafus, 2016, p. 11). By presenting suggested goals, a limited array of choices, and simple visual displays of certain data points, Fitbit is limiting what users can imagine or hope to achieve through their interactions with the technology.

For example, Fitbit currently allows users to customize their daily goals (steps, active minutes, flights of stairs, calories burned, etc.). However, Fitbit does not allow users to customize weekly goals, or to have different goals for different days of the week. This is a function that might be helpful to a variety of users who are trying to be more active on weekends, or on training days, or some other time frame. However, this functionality could cause Fitbit to look more complicated or harder to use on a surface level, and it has not been developed by the company, even in the face of user requests.

One such request is displayed in Figure 3.10, where a user posted, “Since activity levels vary on different days of the week, it would be helpful to be able to set different step goals for each day of the week. Is that a feature in the works for the Alta HR?” The user is expressing an interest in new functions that would allow them to set more nuanced goals that fit the constraints of their life. A response was posted later the same day, which read: “You can go vote for them here” (Figure 3.10) with a link to a Fitbit suggestion page. The discussion has been marked as “solved,” even though the initial request of the poster was never fully addressed.

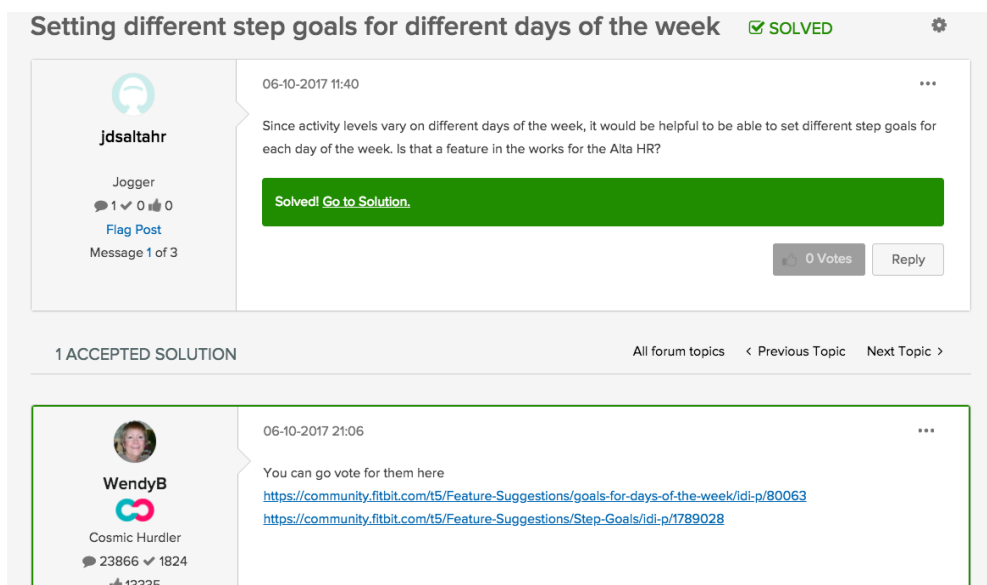


Figure 3.10. Fitbit Forum Post. Title: “Setting different step goals for different days of the week.” Post is marked as solved, with a green check mark. Image source: Screenshot from <https://community.fitbit.com/t5/Alta-HR/Setting-different-step-goals-for-different-days-of-the-week/td-p/2038154>

On the page that was linked in that accepted solution, there are 1,430 votes as of April 10, 2018 for Fitbit to integrate this suggestion (making customizable daily and weekly goals), and there are comments from users going back to 2014 with feedback such as this:

Some of us incorporate resting days into our routine on which our step goals are likely lower than on training days. Also, some nutritional plans include intermittent fasting or other types of caloric cycling. These are just a couple of examples for why the ability to vary our goal settings would be useful. Planned levels of activity and/or consumption are not always identical from day to day (Fitbit Community, 2014).

Despite the continued and expressed interest on the part of users, this kind of feature has never been added. Because more complex features have been developed over the last four years (i.e., heart rate monitoring, cardiac health scores, increased app partnerships, etc.), it is likely that these suggestions are not too technologically advanced for Fitbit programmers. It's more likely that changes such as these would make the interface more complex, which Fitbit seems to avoid in its design and programming choices.

3.2 Power and Contradictions

This grand narrative of Fitbit and its users is important because it shapes how many of us think about this technology most of the time. It creates a powerful narrative, even when it is not entirely consistent. For example, in Figure 3.11, Fitbit is invoking two separate messages that somehow paradoxically co-exist within their narrative: 1) that Fitbit is for everyone (no matter where they are on their fitness journey), and 2) that Fitbit users are already fit and healthy.

We can see the first stance represented in the text: “Make 2018 Your Year of Body Confidence” and “Skinny, strong, curvy, or not: all bodies are beautiful” (Figure 3.11). This invokes the body positivity movement that encourages (mostly women) to love themselves and their bodies, regardless of their match/mismatch with normalized beauty standards. Messages like this allow Fitbit to target the largest possible audience of potential users.

At the same time, this blog entry is paired with an image of Gabby Reece, a professional athlete, model, and actress. It is not paired with women (or people) with a range of body types. It is not celebrating non-traditional beauty or health and fitness that might look different than expected. It's celebrating a level of fitness that may be unattainable to the vast majority of Fitbit users, while seeming to promise a transformation to those same users.

BE INSPIRED

Make 2018 Your Year of Body Confidence: Here's How



Skinny, strong, curvy, or not: all bodies are beautiful. Here's how Gabby Reece made peace with her body and how you can make 2018 your most confident year yet.

Figure 3.11. Fitbit Blog Post. Image of Gabby Reece running on the beach, with water in the background. Article Title: "Make 2018 Your Year of Body Confidence: Here's How" Image caption reads: "Skinny, strong, curvy, or not: all bodies are beautiful. Here's how Gabby Reece made peace with her body and how you can make 2018 your most confident year yet." Image source: Screenshot from <https://blog.fitbit.com/goal-strong-not-skinny/>

Fitbit's verbal/textual and visual messages contradict each other. In text, Fitbit often explicitly invokes images of users who want to get fit and may have limited obstacles (such as not understanding their fitness or their bodies). These textual representations aim to support users who believe unquestioningly in the data produced through this technology, and feel that Fitbit will help them reach their (probably weight-related) goals.

However, their visual representations of users almost exclusively imply that users are already fit. These users are almost always represented as young, healthy, and able-bodied. These users also appear to be in a position only to maintain health or fitness, rather than make major lifestyle changes.

Actual users may not identify with any of the textual or visual representations produced by Fitbit. Yet many continue to use Fitbit products. Furthermore, these contradictory messages persist without sacrificing Fitbit's reputation or credibility, partly because Fitbit encourages functional engagement from users rather than making space for critical or rhetorical engagement. In other words, the roles users play is limited in the official development and marketing of Fitbit. However, this does not stop users from engaging with the technology in more complex ways in other digital spaces. Chapter 4 will take up these ideas, focusing on the various literacies that are enacted and sponsored by Fitbit itself and by Fitbit users.

4 Literacy Sponsorship of Fitbit Technology

Narratives are one important way that we learn about technology, what it can do, how it might fit into our lives, and the ways it can support our goals. The grand and counter narratives detailed in Chapter 3 do more than share experiences and isolated accounts of Fitbit use. Individually and collectively, these stories also work to sponsor literacies for Fitbit users.

In this project, I'm drawing on Brandt's explanation of sponsors as agents who "enable, support, teach, model, as well as recruit, regulate, suppress, or withhold literacy—and gain advantage by it in some way" (Brandt, 1998, p. 166). From this definition, I want to highlight both positive and negative forms of sponsorship. Sponsorship can involve providing access to or modeling practices, resources, and knowledges; but, it can also involve keeping these same practices, resources, and knowledges from users or making these things more difficult to access or imagine. A visual representation of this sponsoring process is displayed below in Figure 4.1.

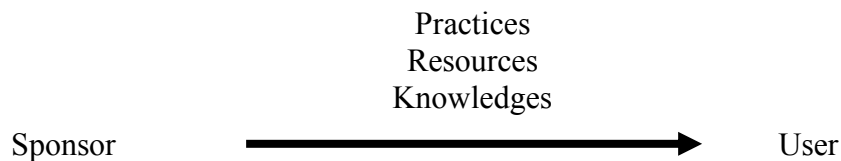


Figure 4.1. Traditional Sponsorship Model. Based on Deborah Brandt's 1998 model.

Within this chapter, I will focus mostly on the positive attributions of sponsorship, to note what possibilities these various sponsors make visible. However, I'd also like to note the absences of certain literacy resources and mark these silences as significant. These vacuums create space for other sponsors to fill these gaps and help users see a wider array of possibilities for how they might engage with technology.

I also want to highlight Brandt's note that sponsors gain advantages through their actions. While these advantages may look different when we reimagine sponsorship as an ecology that involves not only institutions, but also individuals and communities of users, we can still think about advantages here in terms of motives. Specifically, these advantages, goals, or agendas can be understood as the sponsor's position in relation to the technological system of health tracking. These potential motives, first enumerated by Seigel (2013), are defined in Table 4.1.

Table 4.1. Potential Sponsorship Motives

Relationship	Motivation
System Constitutive	Establish an emerging system
System Maintaining	Maintain the status quo in existing system and maintain user engagement with the system
System Simulating	Engage users with the documentation, regardless of impact on larger system
System Disrupting	Disrupt, critique, or challenge the status quo in an existing system

Because the technological system of health-tracking is already well established, current Fitbit sponsors are typically not working to constitute a new system. However, sponsors might use their actions or texts to maintain the existing health tracking system, to simulate it, or disrupt it. Additionally, many of these users are working to maintain the system or engage with the system to gain personal profit or benefits. Still others are working to trouble, disrupt, or subvert that system.

Using this understanding of literacy sponsors, this chapter focuses on the literacy sponsorship that surrounds Fitbit, and the ecologies of sponsorship that are constituted by these divergent and connected sponsors. Specifically, I will address the following set of guiding questions, first defined in Chapter 2:

2. What kinds of digital literacies do users enact through their interaction with these health-tracking technologies and their associated documentation? How and where are those literacies being sponsored?
 - 2a. What kinds of literacies is Fitbit sponsoring for its users? What are the implications of this sponsorship for users?
 - 2b. What kinds of literacies are users sponsoring for other users? What new possibilities or constraints emerge within this extended ecology of sponsorship?

I will address these questions by first working through the various types of literacies that might be sponsored for users—functional, critical, rhetorical, and metistic (explained further in Chapter 1)—and questioning how different kinds of resources support each of these potential literacies for users. I will also note the potential motives of these users by explaining their relationship to the technological system of health tracking, specifically noting whether they are supporting, simulating, or resisting that system. Finally, I will

conclude this analysis with a discussion of how users discover and share resources, how these resources are positively and negatively appropriated or shared to accelerate or impair their rhetorical velocity, and how users' experiences with Fitbit are expanded and constrained within this ecology of sponsorship.

4.1 Functional Literacies

Functional literacies involve the ability to engage at a basic level with technology, usually to complete small, measurable tasks. Most of the Fitbit-generated documentation I analyzed supports functional literacies, at least to some extent. Many these texts are hosted in Fitbit-run online spaces and take a “how to” approach. The consistency of this approach highlights Fitbit’s assumption that users want functional support when they enter online “help” spaces. For example, when navigating to Fitbit’s help page, a user is presented with the array of options pictured in Figure 4.2.

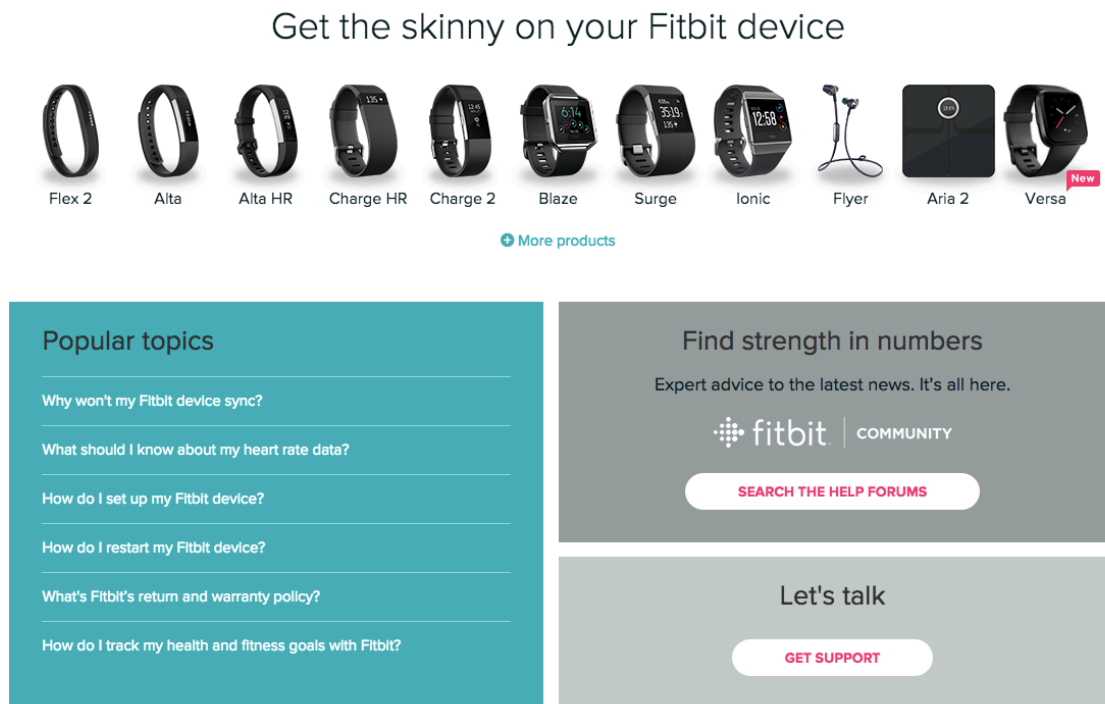


Figure 4.2. Fitbit Help Page. Title Reads: “Get the skinny on your Fitbit device.” Page also includes images of the tracker, a list of popular topics, and links to Fitbit forums and a “Get Support” button. Image source: Screenshot from help.fitbit.com

On this main help page, users can find a list of “popular topics” that take the form of questions, including the following:

- Why won't my Fitbit device sync?
- What should I know about my heart rate data?
- How do I set up my Fitbit device?

How do I restart my Fitbit device?
What's Fitbit's return policy and warranty policy?
How do I track my health and fitness goals with Fitbit?
(Figure 4.2).

Even though only three of these topics begin with the phrase “how do I...”, many of the sub-pages linked from this list include step-by-step instructions that direct users to complete specific tasks in a specific order. For example, excerpted below are the instructions presented to users after selecting “why won't my Fitbit device sync?” The page is divided into two main sections, beginning with the following list of potential problems:

Syncing difficulty is usually caused by a missing requirement. Verify each requirement before moving on to the troubleshooting steps.

- The Fitbit app is installed on a supported iPhone or iPad. To check, see <http://www.fitbit.com/devices>.
- The latest version of the Fitbit app is installed on your phone or tablet.
- The software on your iPhone or iPad is up to date. To check, tap Settings > General > Software Update.
- The Bluetooth setting on your iPhone or iPad is on. To check, tap Settings > Bluetooth.
- Your iPhone or iPad isn't managing other Bluetooth connections. For more information, see [Is the Fitbit app for iOS interfering with other Bluetooth devices?](#)
- If you use more than one device to sync, make sure the other device isn't nearby. If the device is nearby, turn off Bluetooth on it. For more information, see [Why won't my Fitbit device sync to another phone or computer?](#)
- Your Fitbit device's battery isn't critically low.
- The firmware on your Fitbit device is up to date as described in [How do I update my Fitbit device?](#)

(Fitbit, 2018c).

If the user makes it through this list, and is still experiencing problems, the page provides a second set of instructions for the user:

If your device still won't sync, try these steps:

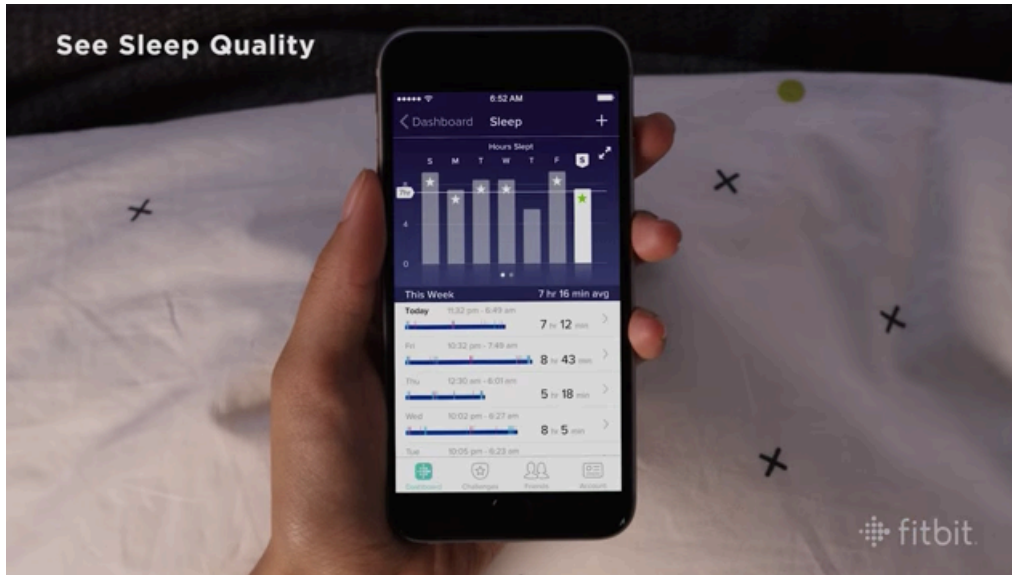
1. Force quit the Fitbit app. For instructions see the [Apple help article](#).
2. Go to Settings > Bluetooth and turn Bluetooth off and back on.
3. Open the Fitbit app.
4. If your Fitbit device didn't sync, restart your iPhone or iPad. For instructions see the [Apple help article](#).
5. Open the Fitbit app.

6. If your Fitbit device didn't sync, restart it. For more information, see [How do I restart my Fitbit device?](#)
7. If your Fitbit device won't sync after the restart, log in to your Fitbit account on a different phone, tablet, or computer and try to sync.
8. If your Fitbit device still doesn't sync, remove all other Fitbit devices from your account and from the list of connected Bluetooth devices on your iPhone or iPad and try to sync.
(Fitbit, 2018c).

As both sets of these instructions demonstrate, many Fitbit resources ask users to complete a series of trouble-shooting steps that might help them to fix a specific technological problem. In other words, the main goal seems largely technical: these resources help users engage at a basic level with the technology and help them learn to carry out basic functions like restarting their Fitbit devices. Through resources like the example provided above, Fitbit is providing series of resources that can help users develop functional literacies over time.

These instructions are also highly self-referential, often linking the reader to other Fitbit-generated resources. For example, if the user doesn't know how to "force quit" the application, the instructions above re-direct that user to another Fitbit-authored article that explains this process in more detail. These nested resources and instructions are highly effective at sponsoring functional literacies that allow users to engage with the technology and address minor technological difficulties or problems.

Many Fitbit resources function in a similar way, even outside of these help forums. For example, Figure 4.3 shows a screenshot from a Fitbit video called "How To Use Sleep Tools." This video is captioned with the statement "Quickly learn how to create a sleep goal in the Fitbit App, set a silent alarm for your Fitbit tracker, and how to view your sleep stats after you wake up" (Figure 4.3). Like the previous example, this resource supports technical engagement with the technology and its preferred interface (the Fitbit App).



Fitbit: How To Use Sleep Tools

Quickly learn how to create a sleep goal in the Fitbit app, set a silent alarm for your Fitbit tracker, and how to view your sleep stats after you wake up. See more at www.fitbit.com/how-to

01:41

Figure 4.3. Fitbit Video. Title Reads: “Fitbit: How To Use Sleep Tools.” Image displays sleep data in the Fitbit App. Caption reads “Quickly learn how to create a sleep goal in the Fitbit App, set a silent alarm for your Fitbit tracker, and how to view your sleep stats after you wake up.” Image source: Screenshot from fitbit.com/how-to

This video helps users engage in small, measurable tasks with their trackers and teaches them how to work the basic functions of the device. In other words, it teaches viewers to use the Fitbit device in the ways the designers intended. For example, these resources are not meant to help users determine what their ideal sleep goal might be, how individuals might have different sleep goals or needs, how the technology might impact users’ sense of health related to sleep, or even what is captured and what is left out in the data.

Instead, this video walks users through the process of inputting a numerical sleep goal (in hours and minutes) that they’d like to meet each calendar day. This resource focuses only on how to engage with the technology and the interface, specifying which icons to touch in which order. While this actively creates possibilities for users to engage with the tracker and app on a functional level and become more comfortable with the technology in that sense, it does not work to create space for users to critically engage.

Part of this limited focus is likely due to the motivations that drive Fitbit’s production and distribution of resources like these. These Fitbit-created materials are working to maintain the technological system of health tracking. Fitbit as a company is highly

invested in getting users to 1) buy in to this system and maintain a consistently active level of engagement and 2) not question, change, or disrupt that system. They profit from maintaining the status quo in the larger wearable self-tracking system, and their documents support functional literacies to the exclusion of others. These silences and withheld literacy resources are notable, because they result in an exclusively system-maintaining structure.

While users also produce materials that support functional literacies and make similar possibilities visible for other users, the advantages gained are different. Instead of working to maintain the health-tracking system, many of these texts seem to simulate the system in order to gain views, engagement, and interaction from other users rather than directly supporting or resisting the larger system.

For example, the video captured in Figure 4.4 titled “Fitbit flex-How to Charge” was posted by Jim Cyr, an individual user who creates videos for his YouTube channel “Avoiding Chores.” In this video, Cyr walks viewers through the process of removing the flex unit from the band, connecting it to the charger, and replacing the unit in its band when charging is complete. Like the Fitbit materials discussed previously, this video covers the step-by-step process that demonstrates to users how to engage with Fitbit on a functional level.

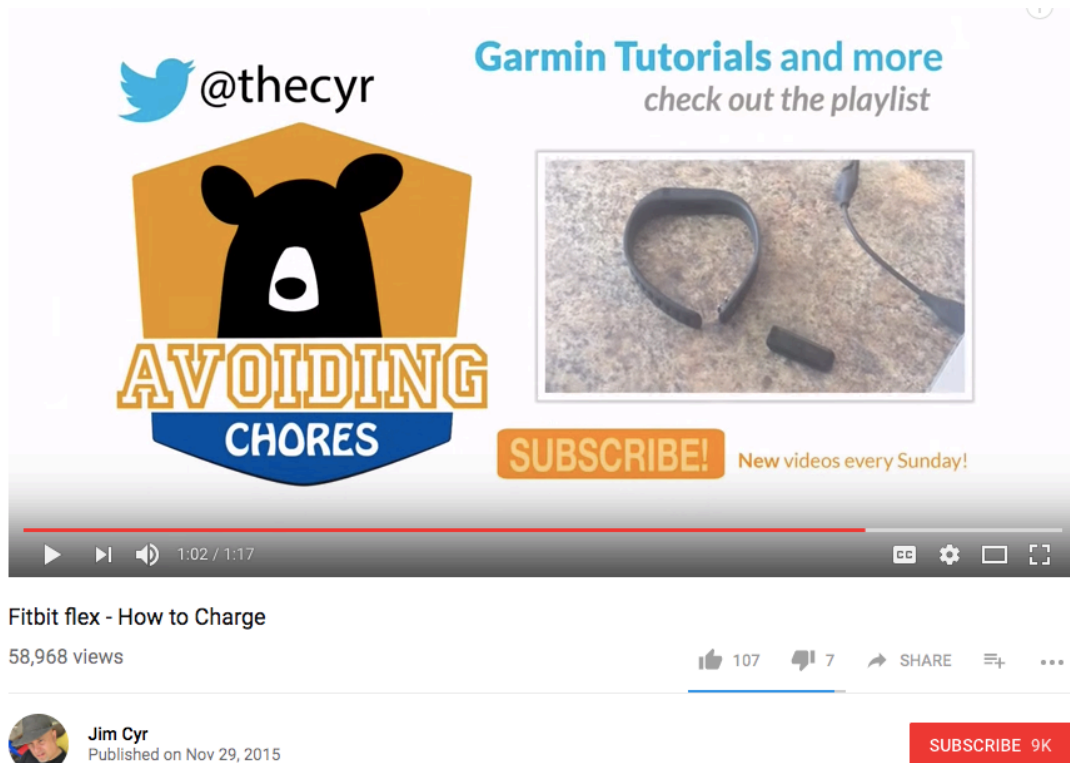


Figure 4.4. YouTube Tutorial. Title Reads: “Fitbit flex – How to Charge.” Image displays logo for YouTube channel Avoiding Chores, subscribe button, and picture-in-picture shot of a Fitbit flex and charging cord. Image source: Screenshot from Jim Cyr’s YouTube channel at <https://www.youtube.com/watch?v=9X6KY7XinkU>

While the actions that are enabled, supported, taught, and modeled (Brandt) are very similar for Fitbit and Cyr's user created materials, their relationship to the technological system of health tracking is different. This makes it especially interesting to note that, while it is easier in most cases to find Fitbit materials through a cursory Google or YouTube search, some users still seek out or prefer these user-created resources. For example, the video in Figure 4.4 has 58,968 views as of April 22, 2018. One viewer even commented with the following post: "I have looked all over YouTube for a video like this and this is the most helpful" (Cyr, 2015). As this commenter shows, there is clearly an audience for Fitbit resources like the video described above.

And while Cyr's video is similar in many ways to Fitbit's "help" videos, it's driven by different motives. Unlike Fitbit, this user is not invested in maintaining the technological system of health tracking. Instead, the relationship is system simulating, which focuses primarily on user engagement with the resource (opposed to the larger system). This video is part of the larger YouTube channel "Avoiding Chores," which had 9,091 subscribers and 10,385,874 views across videos as of April 22, 2018 (Cyr, 2018).

While this channel does not focus exclusively on Fitbit or health tracking technology, Cyr creates a variety of videos about his hobbies and interests. On his YouTube profile page, Cyr describes his content in the following way:

Welcome to AVOIDING CHORES! You will find mostly GPS tutorials and Outdoor topics such as trail guides, basic skills, cast iron outdoor cooking and product reviews. Based out of HALIFAX, Nova Scotia CANADA, Jim aims to provide quality content on a weekly basis (new uploads usually appear on Sunday). Got any feedback? Leave a comment or visit the website to check out merch, eBooks and iPhone apps. (Cyr, 2018).

For Cyr, the engagement with this video is more important than its impact on the larger health-tracking system or the Fitbit corporation. This engagement is important, because it's a source of income for Cyr. At the beginning of this video, a short ad plays, which generates revenue for the channel. And at the end of the short 1:17 video, Cyr promotes his brand with the channel logo, his Twitter handle, and a description of other, similar videos that are available on the channel. There is also a reminder for viewers to subscribe to the channel if they enjoy the content, and a note that new content is available every Sunday. In the video description, there is also a link to the products Cyr reviews on Amazon, and he makes a commission for any purchases made by a redirected user who follows his referral link.

Like many YouTubers and news sites, the goal of channels like "Avoiding Chores" is often to increase user engagement, gain views, and support the brand of the creators. Because the interests of the creator and the impact on the system are different, these examples demonstrate why it is important to note not only which literacies are being sponsored for users, but also where and how those materials are being created and

accessed. Each of the previous examples works to sponsor functional literacies, but they occupy unique positions in the ecologies of sponsorship that surround Fitbit technology. As a result, the ripple effects of these documents are likely different, and users may find or use these resources in different ways.

This is partly because the connections between each of these sources and other points of articulation in the ecology are unique. Because Fitbit resources are so self-referential, finding user generated material to support functional literacy development is more likely to connect users to other resources that support critical or rhetorical literacies.

4.2 Critical Literacies

Critical literacies involve the ability not only to engage with technology, but to understand it in its unique socio-cultural position, to consider the effects technology has on users, the possibilities and constraints that are built into technological systems, and the willingness to question if and how technology might be used.

As mentioned previously, Fitbit-generated materials are much less likely to model or support critical literacies for users than they are to support functional literacies. However, some resources that support critical engagement can be found in Fitbit-maintained spaces like Fitbit's online user communities and discussion boards.

For example, Figure 4.5 shows a question posted by a user about how to engage in the technology when breastfeeding or nursing. This user writes, "I'm trying to add breastfeeding/pumping to my activities but the activity log isn't giving me an option to either select nursing/breastfeeding or create a new activity. I've read before you can go into settings and select that you're nursing. Anyone have any experiences with this?? Thanks!!"

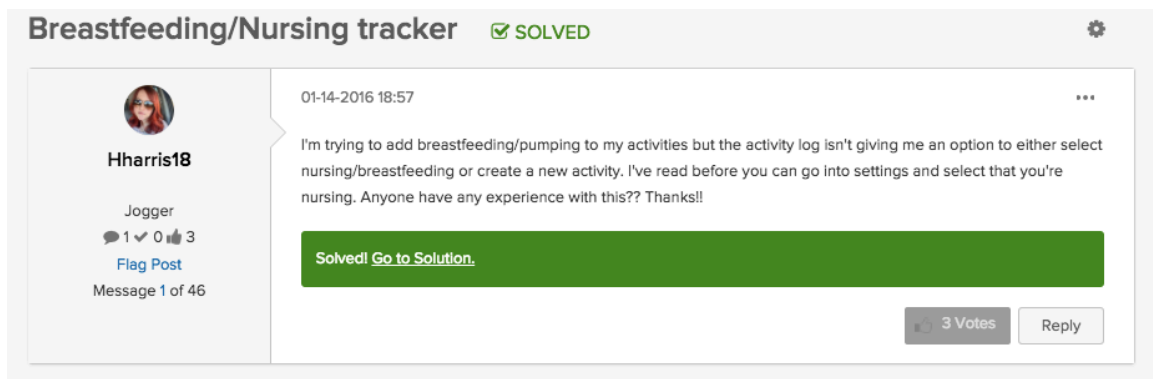


Figure 4.5. Fitbit Forum Post. Title Reads: "Breastfeeding/Nursing tracker." Post reads "I'm trying to add breastfeeding/pumping to my activities but the activity log isn't giving me an option to either select nursing/breastfeeding or create a new activity..." Image source: Screenshot from <https://community.fitbit.com/t5/iOS-App/Breastfeeding-Nursing-tracker/td-p/1124118>

The first chronological post in response was posted by a Fitbit moderator for the page, and is pictured in Figure 4.6. This moderator writes. “A warm welcome to the Community @Hharris18. If you are breastfeeding, in [Our Article](#) you will find some tips about this. You need to change your settings (see attached image) and if you want to manually log this activity, you need to do the following from a computer...” (Figure 4.6). This is followed by a series of instructions that the user can follow.

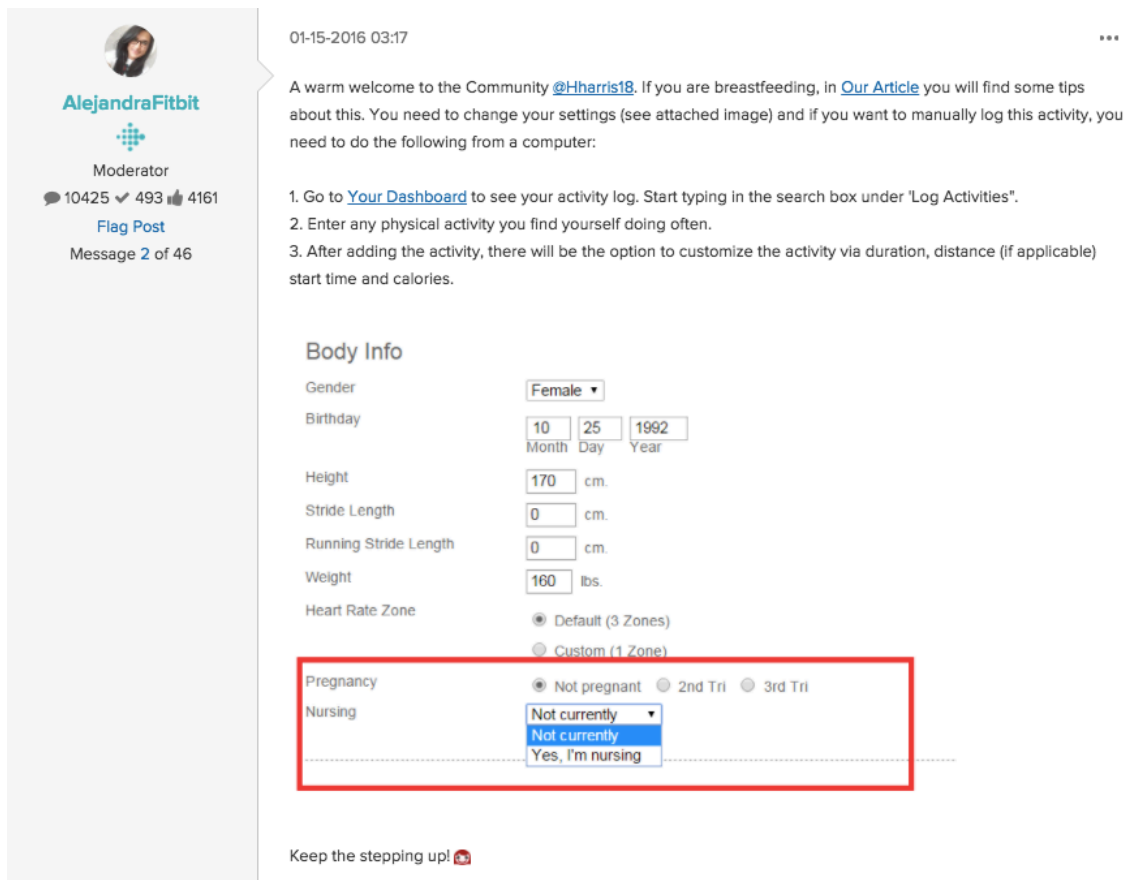


Figure 4.6. Fitbit Forum: Moderator Response. Text Reads: “A warm welcome to the Community @Hharris18. If you are breastfeeding, in [Our Article](#) you will find some tips about this. You need to change your settings (see attached image) and if you want to manually log this activity, you need to do the following from a computer...” Image includes screenshot from “Body Info” section of the Fitbit App. Image source: Screenshot from <https://community.fitbit.com/t5/iOS-App/Breastfeeding-Nursing-tracker/td-p/1124118>

The link embedded in this post (Our Article) is currently a dead link, so it’s hard to say what advice might have been presented there. However, the rest of the information provided is functional in nature. The moderator is providing the user with a series of steps to follow, but there is no discussion of how Fitbit treats pregnancy or breastfeeding differently (or the same) once these settings are changed.

Interestingly, this solution was not selected by the user as the answer to her question. Instead, the original poster marked the accepted solution as a post that came 25 days later from another individual user. He writes, “@Noey03 @Amydgdg @katenotkatie The nursing/breastfeeding options are no longer available. Since they had no effect on any data, they were removed to prevent any potential confusion. Hope this provides some clarification” (Fitbit Community, 2016).

While this post does not engage, model, or support critical literacies in an obvious way, it does begin to note the possibilities and constraints of the technology. There is an acknowledgement that these features do not always work to support users’ goals in the statement that “they had no effect on data” (Fitbit Community, 2016). Implied here is the advice that the original poster *can* follow the steps provided by the moderator, but that *won’t* address her concerns. He points out that the technology is currently unable to support her specific needs.

This short interaction hosted in a Fitbit Community forum highlights small ways that critical literacies can be supported or withheld in online resources. The absence and invisibility of these resources by Fitbit creates literacy obstacles for users, which makes it easier for Fitbit to maintain the status quo and discourage critical questioning of the technology or the larger system in which it operates.

Individual users and groups of users are more likely to model critical literacies for other users, but their motives are not always clear. Some may aim to disrupt the system in small ways, or encourage others to dis-engage with the technology or find other entry points (alternative trackers or technology). Many of these users are also simulating the system in order to personally benefit from their relationship to the system. It is worth noting, the user who responded to this question about nursing settings does not appear to be motivated by any of these goals. However, the text he creates seems to hold more potential to disrupt than the “official” response posted by the Fitbit moderator within this community.

These moments of critical engagement, where critical literacies are enabled, supported, or modeled for users are less likely to maintain the system than functional literacy resources. However, the façade of critical literacies created by an oversimplified critique can sometimes be used to suggest change. Often, though, this change focuses on users’ activities, rather than requiring any major shifts in the systems themselves.

An example of this tempered, surface level engagement with critique of a system can be seen below in the Fitbit blog post titled “Ask Fitbit: How Can I Keep My Stats Private?” by Fitbit’s senior health and fitness editor, Danielle Kosecki. It is not clear if this post was created in response to a specific user asking how to keep their data private, to address a series or pattern of questions they faced from users, or to mitigate critique from outside sources, such as news outlets. Whatever the case, a Fitbit editor authored and shared the following article on October 10, 2017:

ANSWER: With all of the scary headlines about data leaks these days, it's comforting to know **you're in control** of who can see your Fitbit data. All of your privacy settings can be adjusted right from the app. To go completely incognito, take the following steps:

1. **Edit your profile.** From the Fitbit app dashboard, tap the Account icon and then the tile with your name and then the gear icon. From here, tap each row to delete or adjust each component of your profile.
2. **Make all your personal stats private.** After you finish editing your profile, tap Done and you'll be taken back to your profile page. Tap Personal Stats and then, again, go row by row to select "Private" for each one. When you're finished, tap Back.
3. **Hide Badges and Trophies.** Beneath Personal Stats, you'll see Badges and Trophies. Windows and iOS users can tap this tile and then choose Privacy Setting and "Private" to opt out of sharing their Badges and Trophies. If you're an Android users, you'll have to choose the gear icon after tapping "Badges and Trophies." Hit Save and then Back.
4. **Leave Community Groups.** If you'd also like to make it harder for people to find you, select Groups, and then swipe left on each group to leave it. When you're finished, tap Back.
5. **Stop Sharing Your Friends List.** Under "Friends" on your profile page, select Privacy Setting and then Private. Hit Save and you'll be taken back to your profile page. From here, you can also remove or block friends. Just tap their name, and then the three dots at the top right of the screen and select Remove or Block.

If you ever change your mind, you can adjust these settings by following these same steps. Just be aware that you can only change your Display Name once every 60 days (Kosecki, 2017a).

In this article, Kosecki references "scary" data breaches, but in the same sentence assures readers that they're in control of their data with Fitbit. That phrase, "you're in control" is even emphasized with red text, and users can click those words to follow a link to Fitbit's privacy policy (available here: <https://www.fitbit.com/legal/privacy-policy>). Although users are most certainly not in control of all the privacy concerns that might arise—consider for example, issues of hacking or unlawful data breaches—within this blog post, Fitbit offers only problems to which they have easy solutions within this blog post, even as they minimize the potential impact of those problems. Instead, they offer users an easy set of steps to "go completely incognito" (Kosecki, 2017a), many of which involve changing default settings to private.

Implied here is the issue that many of these personal data sets are not private by default. Instead, users must first become concerned about the privacy of their information, then seek out resources that show them how to manage their privacy settings, and finally follow through the process of making those changes. While the tone of this article is meant to comfort users, the content is less than comforting.

This blog post addresses serious critiques of Fitbit and health tracking technology more generally, but only on a very superficial level. While this and similar blog posts might be understood as a resource for users hoping to develop critical literacies, the treatment of the subject seems to suppress the development of nuanced and complex critical literacies, at least in relation to this specific technology.

4.3 Rhetorical Literacies

In the context of this project, rhetorical literacies involve the ability to create and make meaning with or through technology. The Fitbit platform is designed under the assumption that this meaning-making should happen for the user, rather than by individual users (explained further in Chapter 3). In this sense, they are modeling rhetorical literacies for users, but the models are limited because they focus on the needs of the average or idealized user as perceived by Fitbit (see Chapter 3 for details). This focus can leave out the needs of specific users, especially anyone who might be seen as an outlier or non-normative user. However, Fitbit does provide a consistent model for one type of meaning-making with their data.

For example, a Fitbit blog post was published on March 6, 2017 by Danielle Kosecki titled “New Fitbit Features Deliver Data Previously Only Available Through a Sleep Lab.” In this article, Kosecki introduces new data outputs related to sleep that will now be collected and displayed in the Fitbit interface. Included in this article are some images of what this new data output will look like, as seen in Figure 4.7. This graph displays the number of minutes a user spent in each sleep phase, as measured by their Fitbit device.

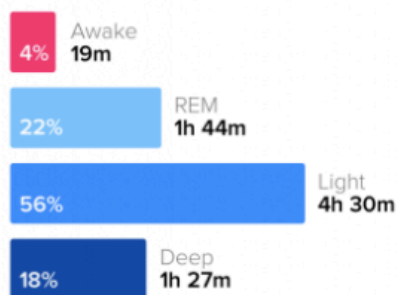


Figure 4.7. Sleep Data Display. Image displays four bar graphs representing time spent in various sleep stages. Image source: Screenshot from <https://blog.fitbit.com/sleep-stages-and-sleep-insights-announcement/>

Along with this image is a verbal description of what each of these stages represent, and the data that is collected and interpreted to determine the visual output. It also begins to interpret for the users why this information matters, and what “ideal” sleep patterns might look like, represented in these specific stages. These verbal descriptions include the following:

Sleep Stages uses accelerometer data, heart rate variability (the time between beats), and proven algorithms to estimate how long you spend in light, deep, and REM sleep stages (as well as time awake) each night. Each stage is important, but for different reasons.

- Light Sleep (including sleep stages 1 and 2) occurs throughout the night and is important for memory, learning, and letting your body recover from the day; for most people it is 50-60 percent of your night.
- Deep Sleep (sleep stage 3) promotes a healthy immune system and muscle growth and repair; for most people it is 10-25 percent of your night (depending on age).
- Rapid Eye Movement (REM) Sleep is when most dreaming occurs and is important for mental recovery and memory formation; for most people it is 20-25 percent of your night. Most REM sleep comes at the end of the night, and is often the stage that's cut short when your sleep duration decreases.
- Awake minutes (between 10-30 times per night) are a normal part of your sleep cycle each night, and is typically when your heart rate is more elevated during sleep (Kosecki, 2017b).

In contextualizing this new data, Fitbit also provides a detailed explanation of their process in an effort to show users how reliable and useful this data might be. Kosecki writes the following:

Over the past two years, Fitbit sleep scientists and product teams worked with industry-leading sleep experts from Johns Hopkins University, Stanford University, and the University of Arizona on everything from the design to the development of these features.

For Sleep Stages specifically, the Fitbit team conducted extensive internal testing by observing and analyzing several hundred nights of heart rate and movement data from volunteer sleepers while simultaneously comparing that to information gleaned from gold-standard lab equipment. They then used existing research on the connection between [heart rate, movement, and sleep stages](#) to develop an automated algorithm that could recognize and track each sleep stage.

Sleep Insights was developed by combining the current scientific understanding of sleep with Fitbit data gained from over 3 billion nights of logged sleep. Fitbit's panel of sleep experts personally validated every insight that will be communicated to you, making sure the information is both applicable and scientifically valid (Kosecki, 2017b).

Because this data is based on qualitative information collected from a large sample, it focuses on generalizable trends in sleep data. However, it is unclear how this research would deal with individuals who might have been under- or unrepresented in the sample, and there are fewer resources presented for individuals who fall outside of "normal" sleep trends and patterns.

Fitbit does much of the rhetorical production for users in their drive to make access as easy as possible. This can be limiting for users with alternative needs or goals, so some of these users are contributing models and resources that support rhetorical literacies for others. User generated materials are creating more space for users to make their own meaning with or from their trackers, even if they need to manipulate the technology, the data, or both to get what they need. This supports what Neff & Nafus (2016) argue: “to get something out of data, many people find that they have to tinker to make data suit their own contexts and purposes” (p. 70).

One way that users can engage in rhetorical production and sponsor potential rhetorical literacies for others is by providing alternative interpretive, meaning-making frames for raw Fitbit data. One user took on this task on R-bloggers, an online news blogging site. This user specifically was concerned that Fitbit claimed that users’ data belonged to them, but did not provide practical ways for users to access all of their raw data.

In response, they adapted existing code to compile their heart rate data that was being lost in Fitbit’s data output. This user explains,

Below, you will see the code I cooked up showing how I used [Corey Nissen’s] package to start a running dataset, spanning as many days as I want, on what my heart rate is doing throughout each day. If you want to adapt this code to download the other available categories of data, note that any references to heart rate will have to be changed accordingly 😊 (inkhorn82, 2015).

This user then went on to share that coding scheme he used to “scrape” their data from Fitbit, part of which is displayed in Figure 4.8. They went on to explain how the code works and how users could adapt or modify the code.

Initializing the dataframe

```
1 library(lubridate)
2 library(plyr)
3 library(dplyr)
4 library(fitbitScraper)
5
6 hr_data = list(time = c(), hrate = c())
7
8 cookie = login("my@email.com", "mypassword", rem
9 startdate = as.Date('2015-08-07', format = "%Y-%
10 enddate = today()
11 s = seq(startdate, enddate, by="days")
12
13 for (i in 1:length(s)) {
14   df = get_intraday_data(cookie, "heart-rate", da
15   names(df) = c("time", "hrate")
16   hr_data = rbind(hr_data, df)
17   rm(df)}
```

Figure 4.8. Data Scraping Code. Image displays 17 lines of code with title “Initializing the dataframe.” Image source: Screenshot from <https://www.r-bloggers.com/hey-fitbit-my-data-belong-to-me/>

Blended in this blog post are a combination of functional, critical, and rhetorical resources. It provides functional support (how to modify and adapt code) and rhetorical resources (frames for making meaning from the technology and data). The narrative structure of the post makes space to support critical engagement with the technology, by noting the limitations of Fitbit's platform and the ways possibilities are shaped for users through their interactions with those technologies. For example, the author writes,

It would be nice to be able to easily/automatically get the physical activities that I have logged through the website (rowing machine, stationary bike, treadmill, etc.) so that I could correlate them with my heart rate at the time, but I guess I have to do that manually for now. Eventually, I'm interested in a somewhat deeper analysis of my heart rate at different times of the day.

At least now I feel more like my data belong to me, even though I had to resort to making use of someone else's very smart coding (thank you, Corey!) to do it! (inkhorn82, 2015).

Although this user-created resource works to support a variety of literacies, its relationship to the larger technological system of health-tracking is less clear than that of Fitbit's resources, which actively work to maintain the system. Although this resource encourages others to make small adaptations or changes to Fitbit's platform, it still enhances the message that self-tracking data has value because it can lead to self-knowledge through quantification. If anything, this user is amplifying Fitbit's messages about the system, even as they critique the specific Fitbit interface that limits access to raw data.

Rhetorical literacies seem to be the most difficult both for users to enact and to sponsor for others. Since meaning-making through Fitbit often seems to involve coding and data processing skills that the average user might not possess or even be interested in, it is easy to dismiss the role of rhetorical literacies in Fitbit learning and in the larger ecology of sponsorship.

However, some user-generated materials work more actively to resist and subvert the larger system of health tracking, also through creating individualized frames for finding meaning in the data produced by Fitbit. And when we think about rhetorical literacies as also including the subversive practices of users, then we can begin to see a more complicated and interesting story of rhetorical literacy sponsorship.

When it comes to hacking and manipulating their data, users are not only creating meaning with their technology, but they are also mobilizing different forms of rhetorical literacies in order to do it. The creation of materials like online videos requires engagement with various rhetorical literacies for users with additional technologies, like cameras, video editors, and online sharing platforms. Many of these users are able to transfer rhetorical literacies they developed in one context (creating videos) to another

(making meaning of their data and helping others find the means to make their own meanings). This research identifies this process of users mobilizing rhetorical literacies to craft their own documentation in order to subvert or challenge health tracking systems as the enactment and sponsoring of metistic literacies.

4.4 Metistic Literacies

In Chapter 1, I proposed metistic literacies as a specific form of rhetorical literacy that are practiced from a marginalized position. While ideal Fitbit users are constructed as privileged in many ways (See Chapter 3), actual users are increasingly engaging with these technologies through pushed, imposed, and/or exploited tracking. This means that large groups of users are not choosing Fitbit or other health trackers based on intrinsic motivation. Instead, they're frequently encouraged or coerced into the technological system by others. And this shift in their motivation for use has the potential to shift their relationship to Fitbit and the technological system of health tracking.

Because imposed tracking is becoming more widely accepted, Fitbit is now marketing not only to individual users, but also to groups like employers, health insurance providers, and medical professionals who are in the position to incentivize or impose fitness tracking for larger groups of people. A sub-division of the Fitbit company called "Health Solutions" provides information, resources, and options for groups that are interested in starting a health initiative grounded in wearable technology, specifically in Fitbit devices and programs. On the main page of this Health Solutions site, pictured in Figure 4.9, Fitbit provides several links with information specifically targeted to three different groups.



Figure 4.9. Fitbit Health Solutions Home Page. Title reads “Member Engagement is All in the Wrist: With Fitbit, providers can help drive healthy behavior change for members.” Image displays two women in business attire. Image source: Screenshot from <https://healthsolutions.fitbit.com/>

The first group includes employers who are interested in integrating or expanding corporate wellness programs and purchasing Fitbit devices in bulk for their employees. The second group includes health insurance providers who are interested in partnering with Fitbit to incentivize preventive healthcare and specific customer behaviors. Finally, the third group include health providers themselves.

Pharmaceutical companies will frequently advertise directly to physicians and sometimes offer incentives for referring patients to (or prescribing) their products, and Fitbit has adopted a similar marketing strategy. Fitbit is actively encouraging partnerships with doctors and medical practices in order to leverage those doctors' authority to convince groups to purchase and use Fitbit products.

Some users likely appreciate Fitbit technology becoming available through their jobs, insurance companies, or doctors' offices. These groups will frequently subsidize health tracking devices (if they don't provide them for free), which might alleviate at least one barrier for potential users: that of cost. However, it is important to note that an individual's response or willingness to buy into the health tracking system may not determine whether or not they will have to comply with the requirements of the incentive program. Because the incentives offered by some of these groups are enticing, and many offer financial savings, some users may feel that they have no choice but to participate. While individuals might technically be able to opt out of health programs that require wearable trackers like Fitbit, some of these users may not see it as a realistic or practical option, depending on their specific circumstances.

For example, if an individual is facing a choice between 1) participating in a Fitbit-partnered wellness program that would allow them to earn additional days of paid vacation based on their activity, or 2) opting out of the program without an alternative means to receive those same benefits, they might feel like they have no choice at all. This might be especially true for individuals who are facing additional obstacles like financial hardships, raising children in a single-parent household, or living with a chronic illness that regularly requires time away from work. For these groups, it might be almost impossible to turn down opportunities for additional pay, financial savings, or extended vacation time.

Further, many individuals in these programs are not explicitly involved in the process of selecting Fitbit technology or weighing potential benefits (i.e., long-term company savings or increased productivity) and risks (i.e., individual data sharing and privacy concerns). Yet, these individuals may still feel obligated to use these Fitbit devices, and are not typically in a position to make sweeping policy changes within their corporation or other organization that has made this decision for them.

However, some users who are facing pushed and imposed tracking have found ways to resist the wearable health tracking system and Fitbit technology, even while actively

participating in that system. The actions and the documents produced as a part of that resistance display metistic, or cunning adaptive, forms of rhetorical literacies.

Some users are adapting Fitbit technology for alternative purposes of goals. Rather than using this technology to understand their activity or health, or to represent their health accurately and objectively to others, some users are engaging with Fitbit devices to create an image of themselves as healthy and fit, even if they need to hack or manipulate their data to do it. Small group of subversive Fitbit users are not only finding ways to manipulate their data, but they're sharing their tactics with other users in online spaces.

One example of these subversive tactics and their online representation can be seen in Figure 4.10. This screenshot is from a YouTube video titled “How To Cheat A Fitbit Fitness Tracker - Part 3 - Electric Drill + Tape = Steps :)” published by user Paul79UF on his untitled YouTube channel.



Figure 4.10. YouTube Fitbit Hacking Video. Image a cordless drill attached to a Fitbit flex. Image source: Screenshot from <https://www.youtube.com/watch?v=31dg0lgaGb8>

This video is accompanied by a written description, which explains “for this method of cheating a Fitbit fitness tracker, I taped the Fitbit to an electric drill and had it lightly hit a fire extinguisher to simulate a step” (Paul79UF, 2016). There is no voice over, so the video relies on this text to explain and provide context for the short 37 second clip. In the video itself, viewers can see the attached tracker, the speed of the rotating drill, and the force with which it hits the fire extinguisher during each rotation.

This specific video is part of a series of four videos by this user, each demonstrating a differing method for “cheating” the Fitbit tracker, along with a longer compiled video showing all four of the methods. The video pictured above had 3,788 views as of April

23, 2018, but no comments. While other users seem to be finding and using this resource, they are not discussing the video, thanking the producer, or explaining their interest in the same way that users did for the charging tutorial described earlier in this chapter.

This is possibly because hacking, cheating, and manipulating technology could be described as unethical in many circumstances. In fact, metis is often described as ethically troublesome, since metistic practices often involve bending or breaking rules. However, this ethical stance becomes less black and white when we think about what some Fitbit users are responding to: a forced tracking situation where they are not in a position of power, or pressure from imposed tracking makes them feel that they cannot play by the rules. Metis and cunning are complicated issues, but often crucial for non-normative users who feel forced to engage with technologies that are not well suited to meet their needs.

In these cases, some users are developing metistic literacies that allow them to do what they can with what they have. By sharing these tactics in spaces like the video described above, these same users are modeling these literacies for others. In this case, the user Paul79UF is teaching others how to manipulate their data, or how to win the game of health-tracking when self-knowledge is no longer the goal.

Although these subversive documents were limited in number, I found them the most interesting, because of the work they're doing the challenge the health tracking system. Instead of just questioning or critiquing the system, users like Paul79UF are displaying a wide range of literacies and creating materials vastly different than those produced by Fitbit.

These subversive groups of users in many ways display the widest range of literacies surrounding these technologies, and they are actively sponsoring potential literacies in other users. They need functional literacies to understand how the technology works, but they complicate this idea by fundamentally questioning what the function of these trackers should even be. They also display critical literacies by questioning the value and limits of these trackers. And they need rhetorical literacies to actively construct resources that support alternative uses of the technology.

For example, subversive users can shift the ways we think about what the "functions" of a technology might include by using those technologies in unexpected ways. In this case, instead of using the Fitbit to capture his activity levels or accurately quantify some aspect of his experience, Paul79UF is imagining the primary function of this technology as creating a record of activity, whether or not that record matched his "true" activity level.

This user does not explain his motivation, and it's unclear if he is personally driven to win a competition, to meet activity benchmarks for a wellness program, or just interested in discovering ways to manipulate the technology. However, the result is a resource that actively works to disrupt the technological system of health tracking. It calls into question what the technology is for, how it can be used, and how good it is at accurately reflecting

reality. This is especially interesting in this moment when companies like Fitbit are actively working to convince corporations, insurance providers, and doctors that Fitbit devices are accurate and reliable measures of health-related behavior.

The impact of system-disruptive texts like the video in Figure 4.10 can be seen in online forums where other users complain about Fitbit cheating. Actions like attaching a Fitbit device to a rotating drill have received some push-back from other Fitbit users, as seen in the post and thread from a user in a Fitbit forum displayed in Figures 4.11 and 4.12. The original post states, “I know that a real culprit isn't going to reply to this but maybe someone has some insight? I've been in challenges with people who have been ahead of me by a quarter of a million steps, obviously I know they've cheated somehow. I just want to know why” (Figure 4.11). This user is complaining about cheating in the stepping community, due to what he or she sees as others gaining rewards they did not earn.

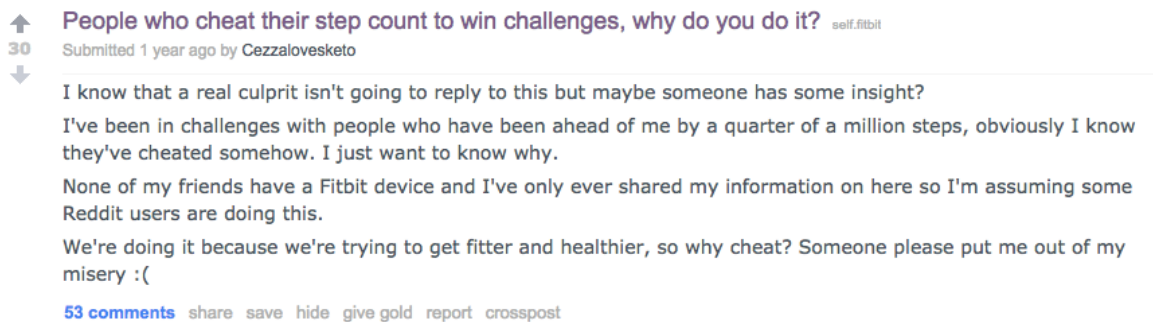


Figure 4.11. Reddit Post. Post Reads: “People who cheat their step count to win challenges, why do you do it?” Image source: Screenshot from https://www.reddit.com/r/fitbit/comments/5m2gc4/people_who_cheat_their_step_count_to_win/?st=jfyketnx&sh=6c1d2b7d

Many of the 53 comments to this initial post are reiterating similar views. Many users are frustrated by what they see as unnecessary manipulation of the technology that makes the experience worse for other users. However, a small group of replies focused on the pushed or imposed forms of tracking that might be motivating some of these cheaters. One user explains, “I don't cheat but my company gives me money for my steps through Virgin pulse. People may cheat because of cash incentives” (Figure 4.12), to which someone quickly replies, “And these are the people that will ruin it for the rest of us” (Figure 4.12).



Figure 4.12. Reddit Replies. Selected replies read: “I don’t cheat but my company gives me money for my steps through Virgin pulse. People may cheat because of cash incentives” and “And these are the people that will ruin it for the rest of us.” Image source: Screenshot from https://www.reddit.com/r/fitbit/comments/5m2gc4/people_who_cheat_their_step_count_to_win/?st=jfyketnx&sh=6c1d2b7d

In this Fitbit sub-Reddit conversation, users are expressing both understanding for system-disruptive behavior and worry over the possible implications of those actions. Although it’s not directly stated, some of these users may be worried that pushed and imposed tracking might no longer be incentivized if widespread cheating draws the legitimacy of tracking data into question. If this were to happen, it would seem that, collectively, these metistic practices and resources might actually work to disrupt and change the system, in a small but meaningful way. Although changes like these have not materialized, the potential for disruption and change is creating productive conversations around these technologies and their uses.

4.5 Engaging in the Ecology

While this chapter describes several of the literacy resources produced by users and the Fitbit corporation, none of these examples exist in isolation. Many of these resources are connected, often linked to one another, or shared in multiple online spaces. And the saliency and impact of these resources depends on their ability to be found, consumed, shared, appropriated, or modified by users. And, without an audience, these resources cannot sponsor or support literacies for anyone. Therefore, I’d like to briefly consider the ways that these resources are connected and referenced in online spaces that might inform the ways a typical user could engage in the ecology of sponsorship that surrounds Fitbit technology. To do this, I’ll address three kinds of gateways that users might

encounter in their digital literacy development as Fitbit users: the Fitbit institution, online user communities, and third party organizations.

One reason I'm using these categories of resources to characterize user engagement in this ecology is because these resources are highly visible through standard search functions. Google is the first place many users go when they have a question or are looking for online content, so I'd like to use a sample search to briefly demonstrate the visibility of selected Fitbit resources. Pictured below in Figures 4.13 and 4.14 are the top 10 Google search results for the phrase "fitbit insomnia."

Figure 4.13. "fitbit insomnia" Google search results, part 1. Image source: Screenshot from

The image shows a Google search for "fitbit insomnia" with the following results:

- Fitbit Institution (blue bracket):**
 - A little about insomnia from an insomniac - Fitbit Community** (https://community.fitbit.com/t5/Sleep-Better/A...insomnia...an-insomniac/.../1907178) - Mar 30, 2017 - 4 posts
 - Fitbit Induced Insomnia - Fitbit Community** (https://community.fitbit.com/t5/Charge-2/Fitbit-Induced-Insomnia/td-p/2056821) - Jun 21, 2017 - 8 posts
 - Has the sleep tracker driven anyone to insomnia? - Fitbit Community** (https://community.fitbit.com/t5/Sleep-Better/Has-the-sleep...insomnia/td.../118473) - Jan 27, 2014 - 16 posts
 - insomnia Archives - Fitbit Blog** (https://blog.fitbit.com/tag/insomnia/) - Follow the Fitbit blog for individual success stories, expert fitness tips, health and nutrition advice, product announcements, motivation and more.
- User Communities (purple bracket):**
 - Are Fitbit sleep trackers worth it? : insomnia - Reddit** (https://www.reddit.com/r/insomnia/comments/.../are_fitbit_sleep_trackers_worth_it/) - Jun 8, 2017 - 7 posts - 6 authors
 - Fitbit sleep tracker really doesn't make me feel better** - 3 posts - Jun 2, 2017
 - Anyone here use a fitbit to track sleep?** - 6 posts - Apr 11, 2016

<https://www.google.com/search?q=fitbit+insomnia>

The first four results are all official, Fitbit generated resources. Three of these resources are posts and questions from Fitbit Community forums, in which users can ask questions that could be answered by forum moderators (Fitbit employees) and/or other users. There is also one link to the Fitbit blog archive for any post tagged with "insomnia." The focus

here on user-posted content in the Fitbit forums is perhaps unsurprising, given that Fitbit focuses most of its content on users who are fit, healthy, and free of chronic health conditions (See Chapter 3). Users have worked to fill some of these gaps by posting questions in Fitbit’s online spaces and beginning to generate conversations about this topic. However, the question and answer format of these pages and the fact that they mark posts as “solved” when one person directly addresses the question creates minimal space for conversation to develop.

The image shows a screenshot of Google search results for "fitbit insomnia". The results are annotated with brackets to categorize them:

- Third Party Organization:**
 - How I Finally Got to the Bottom of My Insomnia - The Daily Beast**
<https://www.thedailybeast.com/how-i-finally-got-to-the-bottom-of-my-insomnia>
 Jun 26, 2014 - The Fitbit, Nike Fuelband, and Misfit Shine are its closest competitors. o The Sleeprate: A new heart rate chest strap device that purports to be the cutting edge of consumer sleep devices. The Sleeprate scientists are the ones who hooked me up to the PSG. (Note: They did not have access to my sleep rate ...
 - Why a Fitbit Harms More Than Helps Your Health and Fitness Goals**
<https://www.thehealthyhomeeconomist.com/fitbit-health-concerns/>
 Jan 25, 2018 - Health concerns about Fitbit and related products that are serious enough to keep smart consumers from buying and using one.
- User Community:**
 - Fitbit interfere with sleep? | SparkPeople**
https://www.sparkpeople.com/myspark/team_messageboard_thread.asp?board...
 Dec 22, 2016 - 18 posts - 14 authors
 I never really thought about it, but I have gotten into a terrible sleep cycle of not being able to go to sleep until 1am or later, which causes me to sleep late, which causes me to go to be late...I don't pay any attention to what the FITBit app says about my sleep, so I think I'll try taking it off around 10pm and see if ...
- Third Party Organization:**
 - How I used a Fitbit to stop my poor sleep habits from killing me ...**
<https://www.policygenius.com/.../how-i-stopped-my-poor-sleep-habits-from-killing-m...>
 Mar 25, 2015 - I bought a FITbit Charge last December for one main reason, which was to start tracking my sleep more carefully. Although I've always loved sleep and prefer it to the company of others, I've grown aware over the past few years that I'm sort of terrible at it. Last summer, after a surprise bout of insomnia that ...
- User Community:**
 - Fitbit insomnia? – MyFitnessPal.com**
<community.myfitnesspal.com> › Message Boards › Fitness and Exercise
 Dec 17, 2015 - 9 posts - 8 authors
 I bought my Fitbit Charge HR back in August, and started wearing it 24/7 immediately.
- Searches related to fitbit insomnia:**
 - does fitbit interfere with sleep
 - fitbit sleep disturbances
 - fitbit side effects
 - can fitbit disturb sleep
 - fitbit sleep problems
 - wearing a fitbit
 - fitbit disadvantages
 - fitbit emf

Figure 4.14. “fitbit insomnia” Google search results, part 2. Image source: Screenshot from <https://www.google.com/search?q=fitbit+insomnia>

In addition to Fitbit resources, three of the top ten search results provide links to online user communities, including Reddit, Spark People, and My Fitness Pal. Like the Fitbit Forums, these user communities focus on user-generated posts or questions that others can respond to in publically-available discussion boards. Unlike Fitbit, many of these user communities are focused on discussion and conversation, and threads can develop between many users over extended periods of time.

Finally, three of these top ten results link users to third party organizations. In this case, online news sites, including *The Daily Beast*, *The Healthy Home Economist*, and *Policy Genius*. While some of these news sources provide a place for comments at the end of each article, these resources are more informational in nature. And often, these resources focus on current events surrounding the technology, such as the release of new devices or features, controversies related to policies or practices, and/or provide links and commentary on online content that might have gone viral (content that has been shared and circulated extensively).

In the remainder of this chapter, I'll briefly explore the ways that information is shared, linked, appropriated, and contextualized in each of these three categories of Fitbit resources to inform how individuals and groups might encounter or engage with these kinds of resources throughout their time as Fitbit users.

4.5.1 The Fitbit Institution

Fitbit creates highly self-referential networks of resources. As discussed previously in this chapter, once a user enters this family of resources, they are quickly presented with additional Fitbit-generated materials that reinforce and support one another. Fitbit extends this reach by actively engaging in social network platforms like Twitter to connect with users and distribute content available in their other online spaces, like the main website, blog, and news articles.

For example, pictured in Figure 4.15 is a recent Tweet from @fitbit that advertises a new Fitbit product (the Versa), introduces a hashtag to promote conversation about the newest tracker added to the Fitbit family, and links to the Fitbit page that covers the technology features and allows users to make a purchase. The Tweet reads "Squad's all here! Meet #FitbitVersa: A coach, a cheerleader, and an all-day companion with your goals in mind: fitbit.com/versa #FitbitForAll" (Figure 4.15) and is paired with a promotional image of the soon-to-be-released tracker with five different colored bands.



Fitbit  @fitbit · Apr 2

Squad's all here! Meet #FitbitVersa: A coach, a cheerleader and an all-day companion designed with your goals in mind: fitbit.com/versa #FitbitForAll



 12  13  136 

Figure 4.15. Fitbit Tweet. Text reads: “Squad’s all here! Meet #FitbitVersa: A coach, a cheerleader, and an all-day companion with your goals in mind: fitbit.com/versa #FitbitForAll” and image displays five Versa trackers with various colored bands and screen displays. Image source: Screenshot from twitter.com/fitbit

Like many of Fitbit’s Tweets, this post acts as a teaser that connects users to the Fitbit’s main platform—their website. The materials posted here also focus closely on Fitbit’s products and services, and pull users more closely into the gravitational force produced by these kinds of self-referential and professionally produced texts. In fact, eight of the most recent ten Tweets at the time of this writing were links to additional Fitbit content like stories and product pages. By translating their content into bite-size pieces and sharing those in places like Twitter, Fitbit is building rhetorical velocity into their documentation. These links and teasers are easier to circulate, and drive traffic back to their main online platform. The same is true for Fitbit’s online presence in other social media spaces like YouTube and Facebook. These platforms provide additional contact with users and often provide links to additional Fitbit-created materials.

4.5.2 Online User Communities

Another important entry point within the ecology is online spaces like Reddit, YouTube, and Twitter. Users within these spaces are more likely to start conversations with each other and develop dialogue over time, rather than create formal resources like advertisements, blogs, or lengthy videos. The exception here is YouTube, where users are more likely to create stand-alone resources than in other online user communities.

However, discussion-based communities like Reddit provide a valuable space for users to share narratives and stories about their experiences and offer advice for other users. This is important, because it creates representations for users that they might not be able to get in other places, especially when some groups of users do not have their experiences represented within the grand narrative produced by Fitbit. As a result, they may need to seek out other resources to supplement their understanding of what the technology is and what it might be able to do (discussed further in Chapter 3).

For example, the following post was made in the Fitbit sub-reddit community by a user who had previously shared his wife's heart rate data. Her data appeared to be above normal, even when resting, and this user thought the Fitbit's sensor was faulty or needed to be re-calibrated. As a result, he was seeking help with that process from other Reddit users. However, another user posted other potential reasons for increased heart rate (stress and pregnancy), and eventually helped this user discover that his wife was pregnant. This story was covered in multiple news outlets, and shared by Fitbit. However, the original story of this user's experience started in Reddit, and the story has continued in that space with this subsequent post:

https://soundcloud.com/abc_rn/how-david-fixed-his-wifes-fitness-tracker

Hey guys, I'm not sure how many people are still active in this thread who remember me, but I'm the guy who found out his wife was pregnant because of unusual fitbit readings.

I just wanted to say hello, and update anyone who is interested in an update. If you're still reading this, I'm guessing you are.

Mom and baby are doing great! We are now a little over the 12 week mark, and so far so good. We will be finding out the gender of our little one this month. Yesterday was a crazy day for me, as I saw the little guy/gal moving around and clenching hands. So many emotions! I keep watching the video over and over again!

<https://www.instagram.com/p/BD4ZyDGB-k4/?taken-by=babyfitbit>

We were lucky enough to speak to some really cool people over the last few months who showed interest in our story. Thanks again to anyone who commented, shared congrats and well wishes and are following the journey with us. Looking forward to telling the little one all about it one day (YoungPTone, 2016).

In this post, the user links to a soundcloud interview from *ABC Interview National* that describes the initial story, along with a link to an Instagram video that shows the ultrasound that confirmed the pregnancy. While many of the 31 replies focused on congratulatory messages, this forum also created space for other users to share their

stories and experiences that resonated with the original poster's. For example, one user replied with the following;

I got my HR during my first trimester and noticed how high my heart rate was. I was convinced there was something wrong because it was always so high. I asked the doctor and he said it was normal but I didn't believe him. Fitbit didn't tell me I was pregnant but it did make me think something was wrong. :P
(Princesspopcorn, 2016).

This user had a different experience than the original poster. Heart-rate data provided by a wearable Fitbit was also unusually high for this user, and she shared a narrative of this data causing concern and anxiety. This provides a contradictory experience to the joyful narrative that circulated about Fitbit data helping the original user learn he was expecting a child. While the story shared in this reply did not go viral or receive news coverage or recognition from the Fitbit company, it is likely a more typical user experience. And unlike most news outlets, Reddit provides users with space to share stories about both the sensational and the mundane.

The conversational threads that develop in this space make connections between these varied stories and experiences, in addition to any external links included in posts and replies. However, many of these stories may not circulate much beyond the Reddit community unless they are unusual enough to warrant additional news attention. Therefore, some of these online communities make valuable connections between stories and narratives, but those connections might not travel with the same velocity as those crafted by the Fitbit institution to drive traffic back to their multiple online platforms.

4.5.3 Third Party Organizations

Another common way that users might discover Fitbit resources is through third-party organizations. As mentioned previously, news organizations are a common resource that frequently re-package content from other sources and focus on current events. It is important to note that third party organizations are not necessarily disinterested in the Fitbit corporation or the larger technological system of health tracking. These resources could be critical, congratulatory, or somewhere in between.

Since I've included some examples of news coverage elsewhere in this project, I'd like to focus now on an alternative third party organization: Un-Fitbits. The Twitter presence of this organization, algorithmic disobedience (@unfitbits), provides an interesting and productive model of online curation and discussion of Fitbit and other health-tracking technology. Un-Fitbits uses the same online platform (Twitter) as Fitbit, and often includes the same hashtags (i.e., #fitbit) to reach Fitbit's Twitter audience. Un-Fitbits uses their Twitter account to curate materials from users, news organizations, academic project, events, and other sources to create complicated and layered conversations about the health tracking systems that include Fitbit.

Many of these conversations go beyond Fitbit-specific products or services to engage in critical questioning of issues like data security that inform Fitbit policy and use. For example, @UnFitbits Retweeted the post pictured in Figure 4.16 about Facebook political advertising, which has recently become a hot topic of conversation following the discovery that Cambridge Analytica had been using Facebook to gather user data, profile users, and distribute inflammatory political advertisements. This post includes a link with more information for other users to explore.



Figure 4.16. Tweet from Madeleine Varner. Text reads: “Still on Facebook? Help us hold Facebook (and politicians!) accountable!” Includes link to to additional tweet by Tyler Dukes. Image source: Screenshot from Twitter.

Un-Fitbit works to explicitly make connections between different stories and examples that could inform users’ views of health tracking and Fitbit. For example, Un-Fitbits also recently shared a link to the following article titled “New bill would let companies force workers to get genetic tests, share results: Under guise of ‘voluntary’ wellness programs, employees’ genetics could be exposed.” This article stated, in part, the following:

It’s hard to imagine a more sensitive type of personal information than your own genetic blueprints. With varying degrees of accuracy, the four-base code can reveal bits of your family’s past, explain some of your current traits and health, and may provide a glimpse into your future with possible conditions and health problems you could face. And that information doesn’t just apply to you but potentially your blood relatives, too.

Most people would likely want to keep the results of genetic tests highly guarded—if they want their genetic code deciphered at all. But, as STAT reports, a new bill that is quietly moving through the House would allow companies to strong-arm their employees into taking genetic tests and then sharing that data with unregulated third parties as well as the employer. Employees that resist could face penalties of thousands of dollars.

In the past, such personal information has been protected by a law called GINA, the Genetic Information Nondiscrimination Act, which shields people from DNA-based discrimination. But the new bill, HR 1313, gets around this by allowing genetic testing to be part of company wellness programs.

Company wellness programs, which often involve filling out health surveys and undergoing screenings, are pitched as a way to improve employee health and reduce overall health costs. But, research has shown that they have little effect on employee health and may actually end up costing companies. Still, they may survive as a way to push healthcare costs onto employees. As Ars has reported before, companies use financial incentives to get employees to participate in these wellness programs. Under the ACA, these incentives can include all sorts of rewards and compensations. For instance, people who don't want to participate can pay up to 60 percent more on employer-sponsored insurance premiums. That can easily amount to thousands of dollars each year (Mole, 2017).

By juxtaposing stories like this with news releases about Fitbit being used in corporate wellness programs, Un-Fitbits encourages users to think critically about the implications of our own Fitbit use, and the systems we are engaged in through that use. And by drawing connections between technologies like Fitbit and Facebook, and talking about these technologies in the context of relevant current events like teacher strikes and data breaches, Un-Fitbits works to make an argument about health tracking and Fitbit through curation and re-contextualization. Rather than generating new content, this resource works to compile other resource for users interested in gaining a critical perspective on health tracking technology, and they find their audience partly by negatively appropriating Fitbit's own hashtags and social media presence.

While it's useful to think about each of these types of resources in isolation to explore trends and patterns for how they work to reach and influence users' perspectives and digital literacy development, I want to reiterate that none of these resources function in isolation. Users might engage with many of these resources simultaneously, and material can move between and among these categories as content gets appropriated and re-contextualized.

4.6 Modeling Ecologies of Sponsorship

Based on this exploration of Fitbit and the ways that literacies are sponsored and supported in online spaces by multiple groups with various interests and goals, I propose an alternate model of literacy sponsorship that expands Brandt's model of institutions as the sole or most important sponsors in the process of literacy development.

At the beginning of this chapter, I presented a traditional model of literacy sponsorship through figure 4.1.

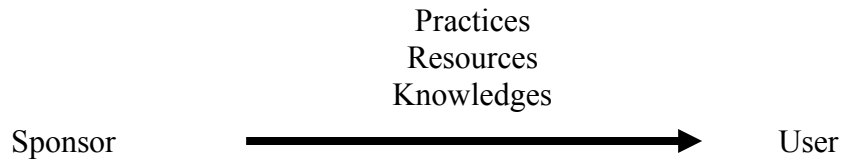


Figure 4.1. Traditional Sponsorship Model. Based on Deborah Brandt’s 1998 model.

In this model, literacy sponsorship is largely a one-way process that focuses on institutional power and its influence over the practices, knowledges, and resources that are (or are not) available for users. However, the increased democratization of technical communication (Kimball, 2006) and increasing online spaces where literacy sponsorship can take place has complicated this model.

Based on the literacy practices of Fitbit users, I propose that digital literacy sponsorship looks more like the model in Figure 4.17.

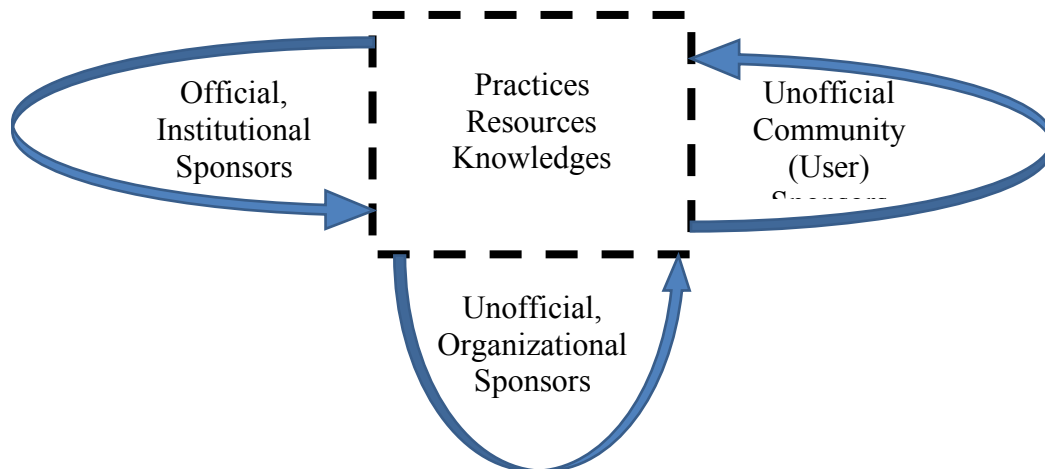


Figure 4.17. Ecological Sponsorship Model. Based on literacy sponsorship practices of Fitbit users.

In this revised model of literacy sponsorship, multiple categories of sponsors become visible, including the official, institutional sponsors highlighted in Brandt’s model. However, the exploration of Fitbit’s literacy resources has highlighted the importance of at least two more groups that we might consider “unofficial” sponsors: Non-institutionally supported communities (in Fitbit’s case, online user communities), and additional organizations unaffiliated with the official, institutional sponsor.

Also important is the relationship between each of these sponsors and the practices, knowledges, and resources to which they contribute. Each of these groups can both take

from and contribute to these resources, and the possibilities and constraints of digital literacies for users is constantly changing and shifting as this ecology evolves.

It is important to note here that I don't want to argue that these groups of sponsors are exhaustive. Instead, I'd like to suggest that thinking about literacy sponsorship as functioning in and through this kind of ecology can lead to more productive conversations about how we can understand and support digital literacy development. These are the issues I'll take up in the next, and final, chapter of this project.

5 Implications and Future Directions

This project has brought together scholarship from literacy studies, technical communication, and the rhetoric of health and medicine to consider how we can best support digital literacy development in our current moment. This research has implications both for how we theorize and understand digital literacy development and for how we pedagogically support digital literacies within writing classrooms and curricula.

In this chapter, I will outline the implications of this work and explain how I intend to expand this project in the future. I will focus first on the theoretical implications, and suggest that this project might allow us to meaningfully expand traditional models of literacy sponsorship to account for the complex, layered, and iterative ways that users access, share, contextualize, modify, and create resources in online spaces in order to make multiple kinds of knowledges and enact varied technology-mediated practices. I also propose that this expansion can draw attention to the importance of metastic literacies, which we might productively add to Selber's (2004) digital literacies framework that currently includes functional, critical, and rhetorical literacies.

I will then explore the classroom-based implications of this project and suggest concrete pedagogical strategies for supporting digital literacy development in ways that contribute to our field's ongoing goal of providing students with a rhetorical education that helps prepare them to be productive and engaged citizens. Exploring extracurricular digital literacy development is crucial for literacy scholars who want to account for the ways that digital technologies are used and the literacy sponsorship that supports that use in online spaces. This call to look outside of the classroom to inform literacy research is not new, and continuing to look to sites of learning that support emerging digital technologies is an ongoing project. This project contributes to this body of scholarship by asking what Fitbit users can teach us about digital literacy, and applying that knowledge to suggest pedagogical strategies that we can enact when supporting digital literacies within our classrooms.

Finally, I will conclude this chapter with a discussion of the future directions of this work. Specifically, I will outline my plan to continue tracing the ecology of sponsorship that surrounds Fitbit technology and its impact on users' perception of and relationship to their own health, as well as extending this line of inquiry beyond Fitbit technology.

5.1 Theoretical Implications

Literacy sponsorship is a powerful model in literacy scholarship first developed by Deborah Brandt (1998) that focuses on institutional sponsors as the intellectual center of knowledge and resources. This metaphor can help explain how certain kinds of literacies and certain practices are valued in places like corporations, schools, and governments, and how particular sets of skills and knowledges are valued and supported to the exclusion of others.

However, when I applied this model of literacy sponsorship to the practices, resources, and knowledges that surround Fitbit and its users, I quickly found that traditional notions of literacy sponsorship shift attention to certain kinds of learning surrounding digital technologies, but make it more difficult to notice or articulate other kinds of learning that characterized users' engagement with emergent digital technologies. For example, the traditional model of literacy sponsorship runs the risk of making Fitbit's grand narrative of the technology and its users the only story about that technology.

By expanding this model to account for the ecological nature of digital literacy learning, I have tried to make visible the multiple ways that Fitbit users could develop digital literacies surrounding this specific technology and the technological system of health tracking in which Fitbit participates. Throughout this process, I have tried to fairly represent and value user narratives that work to re-story Fitbit technology and make meaning within those users' specific contexts of use.

One productive effect of considering digital literacy development through the lens of ecologies of sponsorship is that it shifts attention to literacies that are being modeled and supported from marginalized positions within the technological system of health tracking. In other words, this perspective can make practices visible that might otherwise have been hidden: metistic literacy practices.

Therefore, this project also works to extend the digital literacy framework developed by Stuart Selber (2005) that includes functional, critical, and rhetorical literacies. By thinking about digital literacy development as an ecology of sponsorship that develops over time and across spaces from a variety of positions, this project proposes that metistic literacies can meaningfully be added to this framework as a specific form of rhetorical literacy that is practiced from a marginalized position.

In the case of Fitbit users, my research highlights the productive ways that users can create materials that shift our perspective about what the function of Fitbit technology can or should be. These users' actions work to subvert the technological system of health tracking from within that system by resisting external pressure to track and share their health-related data through Fitbit technology. In some cases, subversive users have found ways to hack the technology, falsify their data, and shift the role of the technology into a tool for creating a sharable image of themselves as healthy and fit, rather than a tool for becoming healthier by learning more about their bodies and activity levels. And the growing prevalence of this "cheating" has the potential to temper the increasing urge to impose health tracking, as it calls the validity of imposed tracking data into question. This demonstrates the ways metistic practices, taken together, can work to change or disrupt technological systems. And, I argue, these practices and potentials become easier to recognize, identify, and support when we name them as metistic literacies.

While I have worked to define and explain these theoretical contributions throughout this project, I'd like to note here the potential of these concepts for informing research

practices and methodologies in the field of literacy studies. While many rhetoric and literacy scholars have urged us to pay attention, to look closely, and to consider what might be hidden or out of view (examined further in Chapter 1 and Chapter 2), thinking about digital literacy development as occurring within and through an ecology of sponsorship provides clues about where and how we might look for literacy development in action. An ecological perspective also draws attention to the importance of being attuned to changes and shifts that happen across both time and space. In effect, this project creates a call for further research that spans multiple research sites, and makes a case for the importance of longitudinal research that can examine the evolution of such ecologies over time.

5.2 Pedagogical Implications

If we believe, as this project suggests, that digital literacy development happens within and through ecologies of sponsorship, then we need to begin thinking about our classrooms as one point of articulation among many that are important for real learning to happen across our students' (and our) lifespans. Additionally, I argue that building these connections into our classroom-based teaching can support our field's ongoing mission to support activism and social justice in our research and teaching.

While social justice and activism are ongoing commitments in the field of rhetoric and composition, there has been increased visibility surrounding these goals in the last year. Drawing increased attention to social justice concerns was the NACCP travel advisory for Missouri, issued in 2017, that recommended people of color proceed with extreme caution when traveling to Missouri, following discriminatory legislation that made it more difficult for people to identify as a protected class. The travel advisory can be read in full here: <http://www.naacp.org/latest/travel-advisory-state-missouri/>.

This, among other discriminatory practices in the state, led the NAACP to issue the travel advisory for the same state which was set to host two of the flagship conferences in the rhetoric and composition field in 2018: the Conference on College Composition and Communication (CCCC) and the Association for Teachers of Technical Writing (ATTW).

In the face of this travel advisory and the location of these conferences, both the 2018 CCCC and ATTW conferences included social engagement and activism as key issues that deserve increased focus in the current socio-political climate of the US. Speaking to these issues, the President's Statement by ATTW President Michelle F. Eble, states the following:

Given the social justice turn in technical communication, along with the current political and cultural climate, we feel strongly that our organization must continue to promote increased participation by members from underrepresented groups as their perspectives and contributions are essential to the future of our field.

Maintaining and sustaining this vision and mission means that we must prioritize the voices and safety of our most vulnerable members.

This year's program chairs, Natasha Jones and J. Blake Scott, have provided us with a theme that is timely and important for technical communication research, theory, and pedagogy. They asked us to explicitly acknowledge the "inherently ideological dimension" of technical and professional communication and invited us to orient our actions and imagination toward "inclusivity and social justice" (Eble, 2018).

This perspective is reinforced by the CCCC Program Chair, Asao B. Inoue, who included the following in his statement of greeting:

I'm excited about the opportunity for change that the travel advisory offers us this year. It gives more of us reason to labor and transform CCCC for socially just reasons, for reasons that can make our organization and annual convention more equitable and less cloaked in its historical whiteness. This is a social justice move that I urge us all to be a part of, even if we disagree about what changes are needed or how we might make them. What we all can agree upon is our unified commitment to the health, prosperity, and success of each other and our students.

But CCCC is not new to such social justice work. Recent themes suggest this: 2017's "Cultivating Capacity, Creating Change," 2016's "Writing Strategies for Action," 2013's "The Public Work of Composition," and 2004's "Making Composition Matter: Students, Citizens, Institutions, Advocacy." The difference this year is that the structures of our annual convention are different, and we have an exigency created by the NAACP's travel advisory. Perhaps the biggest difference this year is that there are more of us who are coming to Kansas City with the explicit intention to labor for transformation, to do social justice work together at our convention (Inoue, 2018).

Each of these statements emphasizes the importance of social justice work at this moment in our shared vision for the fields of rhetoric, composition, and technical communication. This project suggests one specific way that we might, as educators, engage in social justice work and prepare students to engage in this work. Specifically, I argue that recognizing metistic literacies as a valuable form of rhetorical literacy can help us work toward these goals that are a focal point for many educators in the fields of composition and technical communication.

Because metistic literacies depend on a marginalized position by definition, and since they are often motivated by a desire to be disruptive or subversive, I acknowledge that it would be difficult to directly support or ask students to enact metistic literacies within classroom spaces. However, looking at the ways in which metistic literacies are enabled and sponsored in online spaces and comparing that to the ways in which other literacies are sponsored, we can begin to think about the conditions that might be necessary for our

students to meaningfully engage in projects of social justice that are important in their lives. In other words, we can think about the ways that we can honor students' rhetorical sovereignty and help them meet the goals that they most need both in the present moment within our classes but also for the future.

Subversive Fitbit users can teach us about the importance of mobilizing digital literacy skills from one context to another in order to move from consumer to producer—from functional to rhetorical literacies—and to sponsor the literacies they value for other users. This can be particularly important if students want to create system disrupting narratives for any of the systems in their lives that may marginalize, exploit, or exclude them. While the classroom cannot explicitly teach metistic literacies—we cannot dictate students' positions or motives in the ways that metis is understood, nor should we—we can think about how the modules we choose to include or exclude in our classrooms could impact students in their larger, digitally-literate lives. We can engage students in conversations about rhetorical sovereignty, we can make space for multiple forms of literacies to be enacted and valued in our curricula, and we can encourage students to think about their own digital literacy development as extending beyond the classroom in both time and space.

Based on this research project with Fitbit, it seems that metistic literacies are characterized by an ability to mobilize functional, critical, and rhetorical literacies across multiple contexts and think about the ways in which such literacies could be used in new situations that matter to the rhetor. For example, many Fitbit users are taking advantage of digital production techniques, managing online spaces, and connecting with online communities to help them to support their goals and create a body of “unofficial” documentation surrounding Fitbit technology.

This suggests that exposing students to multiple forms of digital production and potential sites of publication are crucial. The available means of persuasion have expanded exponentially in the age of technology-mediated digital communication, and we need to recognize the value of these forms of communication in our classrooms, especially when we recognize that our students are also rhetors who might engage in rhetorical work that needs to reach a large, global audience.

While it is true that many writing teachers are not experts in emergent digital technologies or online production spaces, we do not need to be. Because these same digital technologies that we want to integrate into our classes are often already effectively sponsored in digital spaces, we can imagine these challenges as opportunities to expand expertise within our classes.

Teachers are often seen as the definitive authority and expert in a classroom, and resources like textbooks and other print texts are often granted the highest authority in educational settings. However, I argue that we should expand how we think about expertise in the writing classroom—user generated materials, whether those are produced by Fitbit users, users of communication-based digital technologies, or other

knowledgeable sources—offer more perspectives and can create more complete and complex stories of the technologies we ask students to engage with within our classrooms.

I'd like to draw attention to the potential that resources like YouTube and other digital communities offer to enrich our writing classes. By integrating both professionally produced and user-generated digital content into our teaching resources, we can draw on the wealth of public knowledge surrounding communicative technologies, provide alternative models and narratives of technology use for students, and draw connections between classroom-based learning and production with the learning that happens in extracurricular spaces.

This research also suggests that we need to think not only about what skills, knowledges, and resources we're providing or withholding in our classrooms; we also need to be aware of the motives that inform those resources. Official resources are more likely to work to maintain existing systems, since the creators of those materials often benefit from that system or rely on its continuing existence. This might be the case with some formal educational resources that work to educate, but are also invested in maintaining the status quo within existing systems of formal education. As we integrate these kinds of resources, we can acknowledge their associated motivations with students, and provide resources with a variety of goals and motives alongside traditional published textbooks and other formal resources.

In addition to creating moments of engagement with digital technology and expanding the expertise in our classes that surround these technologies, we can also support digital literacy development by integrating targeted critical reflection. Making space for reflection is necessary in the pursuit of critical literacies. We can build ongoing critical thinking into our curricula to help students build toolkits for understanding not only what possibilities are being sponsored within and outside of our classes, but also the motives that are driving the production and distribution of these resources. These reflective moments can happen formally, through modes like assessed reflective writing, and they can happen informally, through low stakes discussions and in-class activities. No matter what this reflection looks like, multiple instances of critical reflection paired with functional instruction can make it more possible for students to develop the variety of digital literacies they'll need in other contexts.

Ideally, framing our writing classes as part of a larger ecology of sponsorship surrounding the technologies we're asking students to use will help students beyond the specific assignments or activities we're supporting in our classes. By consciously building bridges between multiple sponsors with multiple motives, we can encourage our students to gain experience thoughtfully navigating the multiple and varied literacy resources available to them, within and outside of our classrooms.

When we imagine our students as producers, and not just consumers of sponsoring texts, it becomes important to think about how their materials could reach an interested

audience, by placing a renewed focus on distribution and circulation. If we want to prepare students to pursue the goals that matter in their lives, we should teach not only rhetorical literacies that can be mobilized, but also skills of crafting the potential for rhetorical velocity into the texts and their distribution.

This is especially important when we consider that many of the rhetorical situations we present to our students are artificial, and the texts they produce rarely circulate to an external audience. While I advocate for creating genuine rhetorical situations for students by encouraging them to submit their work to undergraduate research publications, or by integrating client projects that ask students to produce work that can be used by a community partner, I recognize that there are good reasons to be cautious when asking students to circulate the digital productions they produce within a writing classroom, especially first-year writing.

When we are asking students to experiment with unfamiliar technologies, it is understandable that they may not want their first attempts at something like a video or website to be widely available for public circulation. Their ideas, goals, interests, and skills will likely change and evolve, but it is often difficult to call back a digital text once it has been made public. For example, I have a website that I produced in an entry-level undergraduate web writing class, which I produced just as I was beginning to learn web development and coding. That website was published on the university-managed server, and it can still be discovered by a Google search of my name (as of 2018). While I might be able to contact the university and have the site taken down, I frequently use it as an example in my classroom of the ways digital publications can exist beyond the contexts in which we created them. My relatively harmless example facilitates conversations about why we, as creators of digital texts, should be cautious about what we choose to circulate and why.

Because I recognize the danger in asking students to circulate texts they produce within our writing classes, I propose that we develop alternative assignments and activities to demonstrate the importance of rhetorical velocity. Learning from the actions of groups like Un-Fitbits that demonstrate the rhetorical power of curation, one option would be to ask students to act as curators of user-generated texts, to mobilize those resources by re-contextualizing them, and to draw connections between a variety of texts that inform one another when paired in a new context. This can be done internally, through a content management system with the class as an internal audience, or externally through an anonymous social media account or blog. The details of the activity matter less than the emphasis on rhetorical velocity and helping students consider the ways that texts can circulate to reach audiences (or the ways they might fail to do this). These are skills students can mobilize to new contexts as they become producers of texts that are self-motivated and matter in their lives.

5.3 Future Research

This project begins to trace the ecologies of sponsorship that surround Fitbit, and I've focused mostly here on the documentation and narratives that circulate within online communities. This analysis has highlighted some major features of the ecology, and has drawn our attention to some of the many ways that digital literacies are sponsored online by users with a variety of goals and motives.

While I was able to interview a handful of users in this process, I was not able to speak with them to the extent that I would like, due to the limited scope of this project. Moving forward, I would like to engage with extended stories from Fitbit users, to better understand how they navigate this ecology. So far, I have focused on brief narratives from a wide range of users to represent a breadth of experiences. In the next phase of this project, I'll focus more on depth of user experience by conducting extended interviews with select Fitbit users.

In addition to speaking more closely with a variety of Fitbit users, I plan to ask these users to create visual maps of their experiences with the technology. While it is common to collect literacy narratives that focus on literacy learning over time, I would like to shift the focus here to both time and space by asking users to create literacy maps that represent the places and spaces of literacy sponsorship in relation to their Fitbit use. I then plan to use literacy maps as a starting point for conversations with users about the ways they understand ecologies of sponsorship and their role(s) in those ecologies. By looking collaboratively with users at a visual representation of their experiences and having extended, semi-structured conversations with users, I hope to bring additional forms of knowledge to this project.

In addition to expanding my understanding of the ecology of sponsorship that surrounds Fitbit technology and its use, I plan to explore the implications of an ecological understanding of literacy development outside the context of Fitbit technology. Specifically, my future work will include an investigation of the relationship between school-based and extracurricular learning in the context of digital, multimodal writing assignments.

To pursue these questions, I plan to work with educators in a variety of positions (tenure track faculty, lecturers, graduation students, and others) who teach digital, multimodal writing. By surveying, interviewing, and analyzing the classroom materials used by these teachers, I hope to understand the ways we currently view the role of our classrooms in the ecologies of sponsorship that support students' digital literacy development over the course of their lives. Because this research calls for more longitudinal research to explore the evolution of such ecologies over time, I plan to begin this project in the next year, and revisit these questions regularly, collecting data on a rolling basis over the course of several years, as we continue to integrate more emergent technology into college writing classrooms.

Finally, by extending this work to the context of school-based learning, my future research will address more fully the implications of what subversive users look like in institutions of higher education. While current trends toward more open-source educational resources address some issues of access, I suspect that metis continues to play a strong role in many students' experiences of the college classroom—particularly for students who are underrepresented. At the same time, it may be easier for students from privileged positions to “game” educational institutions and manipulate them from the inside. More research is needed to understand what metistic literacies look like within formal education before we can begin to understand how and why we might support this kind of literacy development with our students.

Until then, I plan to continue supporting the conditions that I see as necessary for the development of metistic literacies outside of school—specifically the development of transferable functional, critical, and rhetorical digital literacies—because of the crucial role they play in self-motivated activism. We can also continue to make space for students to engage in projects that are meaningful to them within their larger sets of experiences, goals, and interests. At the same time we must acknowledge that students' positions and interests in creating change and crafting subversive documents likely plays more of a role in their development (or not) of metistic literacies than the skills they develop or experiences they have in a college writing class. And this research suggests that modelling, analyzing, and supporting subversive writing practices in our classrooms might lead to student interest in changing our own institutions in ways we might not otherwise have imagined. I'm eager to continue exploring these possibilities as I extend the questions that drove this project into curricular contexts.

By 1) extending this research to look more closely at user experience in Fitbit's ecologies of sponsorship and 2) expanding the focus of my research to the role of school-based learning in larger ecologies of sponsorship, my research will continue to inform theoretical and pedagogical issues in the field of rhetoric, composition, and technical communication. I look forward building on the work started in this dissertation through each of these future projects.

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