UNIVERSITY OF CALIFORNIA,
IRVINE

# Computing as Context: Experiences of Dis/Connection Beyond the Moment of Non/Use

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Information and Computer Science

by

Mary E. Harmon

Dissertation Committee:
Associate Professor Melissa A. Mazmanian, Chair
Associate Professor Kavita Sara Philip
Professor J. Paul Dourish
Professor Geoffrey C. Bowker

2015

# TABLE OF CONTENTS

# LIST OF FIGURES

# ACKNOWLEDGMENTS

The research for this dissertation has been funded in part by the Intel Science and Technology Center for Social Computing, a Rob Kling Memorial Fellowship, and a Dean's Fellowship from the UCI School of Information and Computer Science.

This dissertation gives but a few partial glimpses into the lives of my many fieldwork participants. I am indebted to all of them for numerous insightful interviews, casual conversations, and welcoming me into their homes, workplaces, backyards, campsites, and lives.

In addition to my advisor, Melissa Mazmanian, and committee members Kavita Philip, Paul Dourish, and Geof Bowker, I would also like to thank Gary Olson, Judy Olson, and Bill Maurer who worked with me at UCI prior to the dissertation, and Christine Beckman who has been an invaluable collaborator in the portion of this research conducted with families and workers in southern California.

This dissertation would not have been possible without the support, encouragement, and intellectual engagements of my family, friends, and colleagues. In particular, I would like to thank: Luke Olbrish, Sue Harmon, Lynn Dombrowski, Kate Darling, Mel Gregg, Lilly Irani, Nick Seaver, Six Silberman, Dillon Mahmoudi, Erin Goodling, Anthony Levenda, Christina Agapakis, Oliver Haimson, Beth Reddy, Luke Stark, Austin Toombs, Sen Hirano, Katie Pine, Marisa Cohn, Jed Brubaker, Amy Voida, and Nancy Nersessian.

Lastly, the practicalities of writing this dissertation have been made dramatically less painful by the inimitable Pandoc library maintained by John MacFarlane (see http://pandoc.org/). My deepest gratitude to Xianping Ge and Trevor Harmon (no known relation) who first created a publicly available LaTeX template meeting the UCI library's particular and strict formatting requirements, and Lars Otten for more recent maintenance of the template (at time of publication, available at https://github.com/lotten/uci-thesis-latex).

# CURRICULUM VITAE

## Mary E. Harmon

### EDUCATION

**Doctor of Philosophy in Information and Computer Science** **2015**
University of California, Irvine

**Master of Science in Human Computer Interaction** **2007**
**Bachelor of Science in Computer Science** **2004**
Georgia Institute of Technology

### TEACHING EXPERIENCE

**Instructor** **2014**
Introduction to Human Computer Interaction
Department of Informatics, University of California, Irvine

### SELECTED PUBLICATIONS

**Stories of the smartphone in everyday discourse: conflict, tension & instability** **2013**
Ellie Harmon and Melissa Mazmanian
*ACM Conference on Human Factors in Computing Systems (CHI '13)*

**Edit-work: promoting interdisciplinary conversation within flagship journals** **2012**
Ellie Harmon
In Chima M. Anyadike-Danes et al., "Reflections on american anthropology:
a conference at UC Irvine." *American Anthropologist.*

**Cognitive partnerships on the bench top: designing to support scientific researchers** **2008**
Ellie Harmon and Nancy J. Nersessian
*ACM Conference on Designing Interactive Systems (DIS '08)*

### GALLERY EXHIBITS

**DIRT** **2014**
Christina Agapakis and Ellie Harmon
*UCLA Art|Science Center*, May 1 - 15

# ABSTRACT OF THE DISSERTATION

Computing as Context: Experiences of Dis/Connection Beyond the Moment of Non/Use

By

Mary E. Harmon

Doctor of Philosophy in Information and Computer Science

University of California, Irvine, 2015

Associate Professor Melissa A. Mazmanian, Chair

What does it mean to be "constantly connected" or to work for a "24/7" company? What does it mean to "disconnect" in an era of "always on" connectivity? This dissertation examines some of the textures of American life in an historical moment marked both by the arrival of ubiquitous computing and the development of a broad-based conversation about the value and merits of 'disconnection.' Taking a multi-sited ethnographic approach, I trace "connection" and "disconnection" as they manifest in discourse, practice, and lived experience across multiple scenes of American life – the suburban household, the contemporary workplace, disconnection retreats, and the wilderness of the Pacific Crest Trail.

One of the central empirical findings of this dissertation is that connectivity was not *constant* for the participants in this research. Rather, observed patterns of technology use were *punctuated* and *variegated*. Yet, many of these same participants also often described their lives as "constantly connected" and expressed desires to disconnect. The dissertation thus argues for the importance of separating analytically the diffuse and pervasive experiences of computing from moments of 'interaction' and 'use' that have traditionally been the focus Informatics and related fields.

By attending to *computing as the context* for social life and human action, I argue that we can better attend to the ways that people situationally *arrange* computing artifacts and leverage constraints to shape their lived experience. This perspective also suggests a new understanding of *disconnection* as something less about unplugging from technological objects, and more about *a context shift, and social*

*reconfiguration*. When people disconnect, they are also altering possibilities for social interaction, and concomitant expectations and obligations. That is, disconnection appears as a *proxy* for short-circuiting habits and patterns of social life that exceed moments of device interaction and tool use.

More broadly, this research draws attention to the ways that social values are produced through computing use and adoption, rather than perfectly embedded within technological artifacts through the intentions of the designer, and suggests that there are significant limits to the possibilities of design to intervene in contemporary scenes of busyness and overwhelm.

# Chapter 1

# Introduction

Figure 1.1: An iPhone abandoned on the sidelines of a soccer practice.

It's hard to see in the image above, but there is an iPhone on the bottom of a pile of things lying in the grass on the sidelines of a soccer field. The phone is in a bright orange case, of which you can barely make out its corners, and it had been abandoned along with its owner's car keys, sunglasses, a bottle of

water, and a child's small blanket. This particular phone belonged to research participant Susan Miller[1], the mother of one of the kids practicing soccer on the field in the background. Susan had discarded her phone somewhat unceremoniously and without much apparent contemplation shortly after arriving at the park. Meanwhile, she was running around and playing with her two other kids – and another parent and their child – on an adjacent unused baseball field, outside the frame of the photo. Parents of two other soccer players can be seen sitting in collapsible chairs in the background of the photo. One of these parents was reading a book, and the other – just one of the four parents present – was looking at a phone.

When the fieldwork for this dissertation began, it was conceived of as part of a larger project seeking to understand how middle class Southern California parents and working professionals were negotiating the anytime, anywhere connectivity that seemed to have arrived along with the newly ubiquitous smartphone. Early research about the widespread and rapid adoption of mobile ICTs[2] in similar middle class contexts had described the arrival of new forms of "constant connectivity" (Wajcman and Rose 2011), "perpetual contact" (Katz and Aakhus 2002; Bittman, Brown, and Wajcman 2009), and "absent presence" (Gergen 2002). Participants in these studies reported an extreme level of near-continuous availability via their mobile devices, and researchers such as Turkle (2008) described scenes of people completely absorbed in their computing devices:

> A neighborhood walk reveals a world of madmen and women, talking to themselves, sometimes shouting to themselves, little concerned with what is happening around them… (122)

Depictions of constantly connected adults – often accompanied by concerns about the colonization of personal time by work communications – reverberated through academic research (e.g., Grant and Kiesler 2001; Chesley 2005; Green, Harvey, and Knox 2005; Mazmanian 2006; Towers et al. 2006; Boswell and Olson-Buchanan 2007), articles in the popular press (e.g., Salemi 2010; Scelfo 2010; Bernstein 2011; Connelly 2010; Dokoupil 2012), and even some advertisements for new smartphones promised as less-

[1] All proper names are pseudonyms.

[2] See Pew Research Center (2015a) for statistics about American adoption rates for mobile phones and smartphones.

problematic than their predecessors. A cartoon illustration accompanying @Bernstein:2011, for example, depicted a family of four sharing a sofa, with each individual fully absorbed in a smartphone or tablet device. A younger boy additionally has headphones on, and a young girl's face is completely obscured by the device she holds up in front of it. The two adults eyes are focused down and towards their devices, all apparently so absorbed in these technologies as to be oblivious to one another. Even the family dog, sitting on the floor, is staring at a tablet, with tongue out. Provocatively titled, "Your BlackBerry or Your Wife," the article warns of the dangers of new forms of constant connectivity. Likewise, a scene in a 2010 Microsoft commercial for the new Windows Phone depicts a family of four sitting around a dinner table. Echoing the image in the cartoon, the two adults and one child are completely fixated on their devices. Only a young boy – turned around backwards and facing the camera – is not on a phone, his face suggesting a sense of forlorn and loneliness. A montage of similar scenes concludes with the suggestion that "we need a phone to save us from our phones" (Microsoft 2010).

Major news outlets brought academic opinions to the editorial page in debates about why readers should take a "digital detox," and gave suggestions on how to go about doing so (e.g., Times 2010)[3]. As Pulitzer prize winning journalist Matt Richtel described in 2012, contemporary life was characterized by a continuous struggle against the "lure of constant stimulation – the pervasive demand of pings, rings, and updates" (Richtel 2012).

Thus, as one of three collaborators on a multi-investigator ethnographic project, I had set out to examine this state of 'constant connectivity' at the level of daily practice and lived experience. Joining together six months of ethnographic fieldwork at a hotel management company with in depth engagements with the families of nine employees, this project sought to understand how study participants were negotiating the use of their mobile ICTs and the potential for constant connection that these devices implied – both in the workplace, and outside of it.

[3] This particular feature, "First Steps to a Digital Detox," included contributions from professors Gary Small (UCLA), Steven Yantis (Johns Hopkins), Russell Poldrak (UT Austin), Timothy Lee (Princeton), Clifford Nass (Stanford), and Gloria Mark (UC Irvine)

Three years later, I found myself on the sidelines of a soccer field in suburban southern California, taking a photo of an abandoned iPhone, and wondering what, exactly, to write down in my fieldnotes about "constant connection" or technology "use."

One of the central empirical findings of this research is that connectivity was not, in fact, *constant* for the middle class parents and workers in this study. Although all participants used mobile ICTs in the course of their everyday routines and activities, they also left these devices in the grass during soccer practices, had habits of plugging them in as soon as they got home from work, and a vast majority of participants kept their ringers on silent precisely to avoid the "pings, rings, and updates" described by Richtel (2012). That is, their actual patterns of technology use would be better described with a language of *punctuation* and *variegation*: their connectivity was patchy, rather than constant.

Yet, as I will show in the first part of this dissertation, many of these same participants also often described their lives as "constantly connected" and expressed desires to disconnect. For example, the owner of the abandoned iPhone pictured above – a stay at home mother who I observed *not* using her phone far more often than I observed her using it – still reported in interviews feeling that "I'd be better without it [the iPhone]" and that "sometimes it's hard to disconnect when you've got everything right there, you know?"

How can we make sense of this apparent paradox? What did these people mean when they said they were "constantly connected?" What did they mean when they said they wanted to "disconnect?"

In studying the social impacts and lived experiences of computing technologies, researchers typically analyze cases of technology *use* (see Wyatt 2003). In recent years, an emerging group of scholars have been developing a research agenda centered on studying *non-use*, generally defined (as the term would suggest) in clear opposition to use: forms of technology resistance, refusal, rejection, and pushback (e.g., Portwood-Stacer 2013; Baumer et al. 2013; Foot 2014; Schoenebeck 2014).

In this dissertation, I argue that neither perspective allows us to gain traction in making sense of the apparent paradox surfaced in my fieldwork with middle class Southern California families and workers.

Instead, I propose an analytic relocation of computing from the locus of practice to the context for human activities and social life.

## 1.1 Outline of the Dissertation

After preliminary literature review and methods chapters, the dissertation is divided into two main parts. The first part of the dissertation develops the analytical perspective of *computing as context* and the second part of the dissertation applies this perspective to argue for understanding *non-use as a context shift*.

### 1.1.1 Part I: Computing as Context

In the first part of this dissertation, I take up the case of working professionals and their families as a site for empirically examining a situation dually characterized by punctuated technology use *and* feelings of constant connection. I argue that making sense of individuals' experiences of computing demands that we extend the unit of analysis and site of inquiry beyond the moment of individual 'use.' That is, the image of the iPhone abandoned in the grass on the sidelines of the soccer field is not just representative of a moment of "non-use," but also provokes us to consider the way that computing's affective and experiential presence within a scene of everyday life can extend beyond the moment of "use." Susan had not forgotten about the phone, or the connections it represented during her period of inattention and non-use. Although there was a temporal gap of over half an hour, she returned to the phone before leaving the field, with the outstanding communication with her husband still on her mind.

Building up from an empirical foundation, I conclude the first part of the dissertation by arguing for the importance of separating analytically the diffuse and pervasive experiences of computing and connectivity from the isolated moments of 'interaction' and 'use.' I develop the analytical perspective of *computing as part of the context* for human practice and social life as one way to gain traction in this

situation. This perspective provides a way to account for the ways that computing's presence in daily life can *feel* continual in the form of *a constant potential,* even as actual connectivity and technology use were often not constant in practice. This potential can often feel compulsory and compelling of one's attention even when a device is not pinging or ringing. Moreover, computing can then be understood as a site for the production of social values rather than an artifact that materializes a particular already-existing value.

### 1.1.2 Part II: Non-Use as Context Shift

Taking a multi-sited ethnographic approach, in part two of the dissertation, I "follow the metaphor" (Marcus 1995) in tracing "connection" and "disconnection" as they manifest in discourses, practices, and lived experience across other scenes of American life. In the second part of the dissertation, I bring the perspective of *computing as context* to an analysis of different forms of "disconnection" – as articulated in popular media accounts of month-long and year-long "detoxes," as experienced at a weekend retreat run by the "digital detox" organization, and as enacted on a five-month backpacking trip along the 2600-mile Pacific Crest Trail (PCT) as as it traverses the spine of the American West from the US/Mexico border to the Canadian province of British Columbia.

By re-locating computing as part of the context for situated and embodied human lives, this perspective foregrounds the practices and experiences that occur *through* and *around* computing use (and non-use). This perspective thus suggests a new understanding of *disconnection* as something less about unplugging from technological objects themselves, and more about enacting or provoking *a context shift, and cultural reconfiguration.* In prior research, disconnection has been understood primarily as a response *to technology* and as an act that is characterized by a *change in patterns of Information and Communication Technology (ICT) usage*. When we view computing as *context*, we are provoked to pay attention to the ways that other human practices, actions, and experiences are central to disconnection, rather than halting our analysis at the locus of shifts between technology use or non-use. In contrast to focusing

on things like overt technology rejection, resistance, or refusal, this perspective emphasizes the ways that forms of disconnection can also manifest in the ways that people *arrange computing* artifacts and *leverage infrastructural constraints* to shape their personal environments and experiences. Moreover, it draws attention to the ways that periods of disconnection are often also simply vacations. Individuals engaged in "unplugging from technology" are also disengaging from much of their everyday life – typical routines of work, family, and social life. Taking a perspective that understands *computing as context* allows us to more easily see the ways that *disconnection can serve as a proxy* for short-circuiting habits and patterns of social life and more general human interaction that transcend digital tool use.

## 1.2 Central Question and Contributions

Although the key empirical finding explored in Part I of the dissertation – that actual connectivity is more punctuated than continuous – is implicit even in some of the research that uses the phrase "constant connectivity" (e.g. Wajcman and Rose 2011; see Kolb, Caza, and Collins 2012), little research has foregrounded this less-than-totalizing aspect of the arrival of ubiquitous computing. In calling for scholars to more carefully attend to the language used to describe 'states' of connectivity (and to recognize and attend to the multiplicity of their degree), Kolb, Caza, and Collins (2012) attributed earlier glosses of "constant connection," in part, to researchers' focus on extreme cases of use and the usage patterns of early adopters. Indeed, early email research often highlighted the ways that email – an ostensibly asynchronous communication tool – had been adopted in ways that promoted more synchronous interaction (Wajcman 2015). However, more recent research suggests that over time, it has become a "less urgent, asynchronous way of communicating" suggesting the need for more "continual inquiry" into the ever-shifting practices involving digital technologies (103).

A small number of recent works have begun attending to variations in connectivity with respect to differing norms of responsiveness developed among different adoption groups (Mazmanian 2013), called out the tendency to over-emphasize the constancy of technology use, especially when focusing on youth

adoption (Thulin and Vilhelmson 2010), and suggested that claims of technology-induced "work extension" and work-home boundary blurring were "exaggerated" (Bittman, Brown, and Wajcman 2009). Nonetheless, stories of a more universal and totalizing constancy persist in much of the academic literature. In new studies of explicit forms of "pushback" and "resistance," several scholars have very recently argued that these cases of *non-use* draw into further relief the way that contemporary life is otherwise characterized by constant connectivity. For example Roberts and Koliska (2014) describe contemporary life as characterized by the presence of "ambient media" that "surrounds us at all times to create world of constant awareness" and Morrison and Gomez (2014) describe people as "continuously connected to the internet…a phenomenon some start to call 'evertime.' "

In contrast to studies of explicit forms of non-use, this dissertation's empirical description of 'punctuated' connectivity highlights the ways that practices that involve technology use and non-use alike were often mediated through the mundane routines and habits of everyday life. This empirical description thus begins to articulate a more synthetic depiction of the use and non-use of ubicomp that draws these two apparent oppositions together as aspects of broader patterns of human interaction, rather than focusing on extreme oppositions – total embrace, adoption, and integration of technology versus rejection, refusal, and resistance. Thus, this dissertation provides an empirical ground for theorizing technology-in-practice that responds to the calls for non-binary framings of use and non-use (Baumer, Burrell, et al. 2015; Morrison and Gomez 2014). It also returns to earlier suggestions that understanding technology-in-practice requires attention to its role in lived experience – and society and social orders more broadly – even when not in active use (Wyatt 2003) and returns attention to the ways that the experience of computing exceeds any circumscribed moment of interaction or use (Satchell and Dourish 2009).

Non-use has generally been understood as in response to the computing technology itself or something directly related to its use and experience: a feeling of information overload, a frustration with 'constant connectivity,' a pushback against a specific technology, or more general resistance to computing's

ubiquity more generally (e.g., Baumer, Burrell, et al. 2015; Foot 2014; Morrison and Gomez 2014).[4] However, as I have argued previously (Harmon and Mazmanian 2013), acts and understandings of use and non-use are also figured within two broadly circulating – but conflicting – cultural narratives that compel individuals to both integrate smartphones in their daily lives, and dis-integrate smartphones from their everyday activities. In this prior work, I suggested that both use and non-use must be understood as integral parts of the achievement of everyday life. Rather than simply understanding non-use as pushback against 'computing,' this would suggest that non-use is always also motivated by attempts by individuals to properly participate in social life. Likewise, technology use is not just be about the embrace of certain technological features or functions, but about the culturally appropriate participation in everyday life.

My own prior work, along with recent arguments by others in HCI and STS all suggest a need to de-center computing from the way that we understand the construction and experience of things like busyness and cultural speedup which are often linked to computing and figured as a motivator for non-use (Sengers 2011; Wajcman 2015; Lindley 2015). This suggestion to de-center computing – and give due attention to the roles of other cultural artifacts, histories, practices, habits, and norms – resonates with arguments that the human experience of computing far exceeds the particular circumscribed moment of 'use' or 'interaction' (Satchell and Dourish 2009), and that ICTS – rather than straightforward facilitators (or heralds) of excess and overload – are key symbols and visceral reminders of the everyday excesses and overloads that have multiple and diverse roots (Barley, Meyerson, and Grodal 2011; Gregg 2013).

In proposing the analytical re-positioning of computing as part of the context for everyday life, this dissertation responds to numerous more general calls within HCI for moving beyond analytic frames centering on 'interaction' and 'use.' These calls have been raised in response to new forms of ubiquitous and everyday computing (e.g., Abowd and Mynatt 2000; Sengers et al. 2004) and also in response to a

[4] A notable exception is Portwood-Stacer (2013) who interprets Facebook non-use as resistance to capital and consumption. However, she still focuses much of her attention on attempting to assess the efficacy of non-use as an isolated and targeted (political) action, finding it lacking because of general (mis-)interpretations of non-use as apolitical and/or elitist.

broad recognition of the co-constitutive nature of society and technology, as as influenced by interdisciplinary engagements with STS, Sociology, Cultural Studies, and Philosophy especially in work within the CSCW sub-communities (Grudin 1990; Bødker 2006; Harrison, Tatar, and Sengers 2007; Suchman 2007; Bannon 2011; Harrison, Sengers, and Tatar 2011; Wright 2011; Verbeek 2015; Taylor 2015). Recent studies of the non-use of computing have raised the question again from a slightly different perspective. In recognizing that computings's effects on human experience transcend isolated moments of 'use' (see Wyatt 2003; Satchell and Dourish 2009) and finding a new need to theorize 'use' and 'non-use' together rather than as binary distinctions (see Morrison and Gomez 2014; Baumer, Burrell, et al. 2015), these researchers, too, are searching for an alternative language for describing the relationship between humans and computing in terms other than individual interaction and tool use.

Theoretically, then, the analytic perspective of *computing as context* responds to a key question about the constructs of 'interaction' and use/non-use within the broader HCI and Informatics communities:

**How can we theorize the relationship between humans and computing technology in a way that does not center on isolated moments of human interaction with a computational interface in the process of conducting a specific activity?**

In recent years, several scholars have begun to outline some ways of re-articulating the relationship between humans and computing that shift the unit/site of analysis away from the moment of interaction and re-figure the construct of the singular 'user.' For example, Sambasivan et al. (2010) has developed the notion of *intermediaries* for describing the multi-person configurations that characterize some forms of technology use. Cohn (2013) has developed the notion of "livedness" for attending to the persistence and influence of 'old' technologies in organizational and human contexts. Selwyn (2003) proposed studying the Internet as a "text" that is both read and produced by 'users.' The suggestion presented here of understanding computing as context, resonates, as well, with Taylor (2015)'s focus on "world making" and the ways that both research and design are part of "configuring dense, interconnected relationships of humans and non-humans" (50).

In this dissertation, I propose the re-positioning of computing as itself the context for everyday life. This way of re-articulating the relationships between social life and computing helps us to gain traction on questions of both "constant connection" and "disconnection". Understanding computing as context pushes us beyond the apparent mismatch between reported experience and observed practice such that we might acknowledge the way that experiences of computing exceed moments of use and interaction, and that computing implicitly and indirectly shapes social life.

The perspective of computing as context carries important implications for the field of HCI, in particular, with respect to the relationship between values and both the design and materiality of digital artifacts. Theorizing computing as context draws attention to the ways that computing is part of the ground from which new politics are produced and existing politics are re-produced. It suggests that attending to the ways that computing matters in processes of cultural re-production because its affordances and capacities appear latent in the world and person. That is, computing, from this perspective, can be understood as part of the material environment for more general human action and social life. As such, computing technology is characterized by transforming human potential and possibility as much as any particular use-value-affordance. We can then see computing as integral to the messier human production and enactment of value – rather than just a vessel into which culture might be somehow embedded or into which values might be designed.

By conceptualizing computing as context, we can see more clearly the ways that computing changes the ground of human practices and re-articulates the temporal and social contours of other contexts – the family, the home, the workplace. The broader implication of this research, then, is that *perfect* design-for-good (or design-for-bad for that matter) is impossible. This impossibility is not just because of appropriation and human agency to 'choose how to use' something, but because technology changes the ground from which culture and human practice continually emerge in a more fundamentally un-predictable way.

# Chapter 2

# Literature Review

In this section of the dissertation, I situate the work both with respect to the present historical moment and recent research in Human Computer Interaction (HCI), Informatics, and related fields.

## 2.1 The Arrival of Ubiquitous Computing

By many accounts life in the early 21st century is marked by the arrival of ubiquitous computing, and the early development of a burgeoning "Internet of Things" which promises to even further integrate computing in routines of cooking, (International Telecommunications Union (ITU) 2005; Clark 2008; Rogers 2009; Bannon 2011; Dourish:2011; Light 2011; Abowd 2012). These developments underscore the importance of research that takes on questions about the impacts of ICTs on social life and lived experience. As Light (2011) writes:

> First, digital tools are now mediating many of our relationships as well as providing the means to earn our living, organise our shopping and banking, etc. They are no longer confined to working and learning, but prevalent through many of the more intimate activities with which we define ourselves. Second, structures that are socially maintained at present

> can be hard-wired into (semi) intelligent, autonomous digital systems. Here, possible examples include health monitoring, care of the elderly, voting, delivering school curricula, etc. By bring- ing technology into such intimate relations and equipping it to act on our behalf we implicate it in helping us develop our social structures with a knock-on effect on how we understand and manage ourselves as a world. (Light 2011, 431)

As the devices that were first identified as making computing "personal, portable, pedestrian" (see Ito and Okabe 2005), mobile phones – and newer, internet-enabled, multi-functional smartphones – have often been seen as a key indicator of this technological transformation (e.g., International Telecommunications Union (ITU) 2005; Dourish and Bell 2011).

In the United States, where this research was conducted, adoption rates over the last decade for smartphones have been dramatic. In 2002, Research In Motion (RIM) released the BlackBerry 8150, the first device to combine their already popular email pager with a cellular phone. Soon after, Handspring[1] would release its own early smartphone[2], the first in a long line of Treo devices which combined Palm's already-popular PDA operating system with the communicative capabilities of a cellular phone.

In 2011, when fieldwork for this research began – and when Pew Research first began tracking adoption rates for smartphones separately from cell phones – 35% of American adults were reported as owning smartphones, with 83% of adults owning a mobile phone of some kind (Smith 2011). A December 2014 survey, the most recent at the time of this writing, found that the adoption rate for smartphones had risen to 64%, with a full 90% of the American adult population owning a mobile phone of some kind (Pew Research Center 2015b). Adoption rates for smartphones are even higher at the two lower age brackets

[1] A company founded by the original founders of Palm – an early Personal Digital Assistant (PDA) maker – after Palm's acquisition by 3Com. Handspring PDAs ran the Palm Operating System, and would soon (in 2003) merge back together with Palm (which had, over time, been spun back off from 3Com).

[2] As it has been pointed out to me, this terminology was not used at the time. For example, early reviews of the technology emphasized its convergence nature, described a state of "PDAs merging with mobile phones," and used long phrases like "a truly integrated GSM phone and Palm OS device housed in one small flip phone form factor" Strietelmeier (2002). In passing, however, the device was generally referred to either by its brand name, or more simply as a "phone." Likewise, today, many iPhone users also do not refer to their devices as "smartphones," opting instead for the simpler, "my phone," but I use the term here in a technical way, to differentiate between a multi-functional internet and application ready communication device in contrast to a simple cellular phone with more limited functionality.

in the Pew Study – the demographic segments to which most of the participants in this research belong – with 85% of adults under 30 owning a smartphone, and 79% of those between 30 and 49 (Pew Research Center 2015b).

Importantly, however, ubiquitous computing is not just about the proliferation of any one computing artifact. When Dourish and Bell (2011) point to "mobile communication and telephony" as a marker of the arrival of ubiquitous computing (25), what was critical was not so much the device itself, but the way that these particular tools were the means by which "computation is embedded in the technology and practice of everyday life" (41).

A recent report from Pew Research Center (2015b) found that 46% of smartphone owners described the device as something they "couldn't live without" [3]. Over the course of a week, three quarters of smartphone owners reported using their phones at least once for social networking; half or more reported taking photos and video, accessing the news, and watching videos; and over 40% listened to music, used maps, or played games on their devices (Pew Research Center 2015b). As some scholars have argued, we might then understand the internet-enabled, color touch screen, bluetooth-speaker-compatible smartphone as a kind of convergence device (see Jenkins 2006), a form of computing that offers itself as ready for integration in numerous aspects of daily life – holding more than 'just' the communication potentials of early portable cell phones and email pagers, or 'just' the address book and calendar potentials of early Personal Digital Assistant (PDA) devices.

In the context of ubiquitous computing, smartphones appear as the most recent incarnation of a process of computerization with a longer history. When smartphones were still brand new, Agre (2002) argued that the Internet was already a site of culture and everyday experience for many Americans, and should no longer be treated as a separate place, "cyberspace." What was important about the internet then, and remains important about smartphones now, is the way that, via these technologies, computing has

[3] Indicating the growing importance of these personal computing devices for Americans, an earlier study from 2012 found that only 29% of cell owners affirmed a similar statement – that their phone was "something they can't imagine living without" (Smith 2012).

"become[] deeply bound up in the specific arrangements by which people conduct their lives" (Agre 2002, 173).

If computing and the Internet were already sites of culture and everyday experience a decade ago, then the pocketable mobile phone – and, newer, internet-enabled, multi-functional smartphones – were central artifacts in making computing and connectivity even more personal, more mobile, and more accessible 'anytime, anywhere.' As Kate Crawford wrote, the arrival of the iPhone, in particular, marked "a key moment of metastasis, when an already intimate, popularized technology [the cell phone] expanded to encompass a host of media forms" (Crawford 2012, 219). As others have described, the smartphone has more simply become "a part of our mundane ritual interactions" (Lee and Katz 2014).

Researchers, global intergovernmental organizations and industry leaders have long been anticipating the arrival of a more far-reaching 'Internet of Things' (e.g., International Telecommunications Union (ITU) 2005; Bannon 2011; Light 2011), which is now taking shape in the proliferation of a host of everyday computing artifacts beyond the smartphone. There are, of course, tablet devices, which often share features, functionality, and operating systems with laptops and smartphones – categories with increasingly fuzzy boundaries.[4] There are also a wider array of more specialized technologies such as Personal Satellite-based GPS location beacons and trackers,[5] GPS-based navigation tools,[6] hybrid GPS-watch-fitness devices,[7] computerized and internet-connected home thermostats and cameras,[8] fitness

[4] For example, Microsoft's surface device is specifically designed to be both a tablet and a laptop; and it shares an operating system with Windows Phones. See, http://www.microsoft.com/surface. Google's and Apple's lines of tablets and smartphones also offer few distinctions other than size. For example, compare the integrated sales and website for Android Tablets and Android Phones at http://www.android.com/tablets/ and http://www.android.com/phones/; Likewise, Apple iPads and iPhones are marketed as having almost entirely similar features and functionality with the primary distinction being size http://www.apple.com/ipad/ and http://www.apple.com/iphone/. The few remaining features that made phones stand apart just a year ago – the ability to send SMS messages and make phone calls – are increasingly integrated into networked computing more generally. Notably, Apple and Google have both been making strides in this direction with their Apple Messenger and Google Hangouts products allowing individuals to sync and respond to SMS messages from computer to mobile, and to make phone calls directly from a web interface.

[5] For example the SPOT personal locator beacon, see http://www.findmespot.com/en/index.php?cid=100

[6] For example the TomTom GPS system for automobiles, see http://www.tomtom.com/en_us/drive/car/

[7] For example, Garmin – also a long-time maker of GPS-based automobile navigation devices – has developed a long line of GPS sports watches for tracking running activities https://buy.garmin.com/en-US/US/cIntoSports-cRunning-p1.html

[8] For example the Nest home thermostat, recently acquired by Google, see https://nest.com/

bands,[9] fitness armbands integrated with mobile payment technology,[10] more general purpose smart watches,[11] and Amazon's new 'dash button' which lets one order new products – for example, laundry soap – by pushing a WiFi enabled button that that one can stick on – for example, the washing machine,[12] or, as Garmin depicts on its website, computing can now be thoroughly integrated within a practice of cycling through the use of no less than 8 interconnected devices[13]. The "connected bike" comprises an 8-part ensemble: a GPS-based bike computer, a WiFi and GPS enabled 1080p video camera with built in screen, a pedal-integrated power meter to track the force of a cyclist's stroke, an electronic shifting system, a heart rate monitor, a speed sensor (separate from the GPS computer which also has this readout), a handle-bar mounted remote control (for controlling the handlebar mounted GPS computer even more easily), and smartphone with Garmin's custom app installed. As the Garmin suite of tools evidences, many of these new "internet of things" devices leverage the smartphone as a hub for connectivity and communication – it being an assumed baseline technology.

These wearable and distributed devices further entrench computing in the intimate spaces of human life. Thus, to say that computing has become ubiquitous is to acknowledge its material proliferation as evidenced by widespread adoption, its diffusion and pervasiveness within the spaces and times of human activity, and its integration in the everyday practices of social life (International Telecommunications Union (ITU) 2005; Dourish and Bell 2011; Light 2011). As a 2011 advertisement for Jawbone's new UP fitness band described, this wearable tracking technology is something that "gets to know you" and "tells you about yourself" (Jawbone 2011). Far beyond tools for email and phone calls – and no longer designed with the business traveler imagined as the ideal user – Light (2011) describes these forms of computing as "expressive technologies or technologies of identity."

[9] For example, the FitBit wristband that tracks daily movement with embedded sensors, see http://fitbit.com

[10] For example, Jawbone's new American Express integrated fitness band, otherwise similar to the FitBit product, see http://jawbone.com/amex

[11] For example, the Apple Watch, Pebble Smartwatch, and Android Wear devices. See, http://www.apple.com/watch/, https://getpebble.com/, http://www.android.com/wear/

[12] See https://www.amazon.com/oc/dash-button.

[13] See http://sites.garmin.com/en-US/vector/

The arrival of ubiquitous computing means that the core purpose of computing technology cannot be conceptualized as simply instrumental. Instead, the arrival of ubiquitous computing signifies a transition to intimacy and everydayness as the key characteristics of technologies that are implicated in practices of connecting and relating to significant others and one's own self (Light 2011).

As emphasized by numerous recent studies, Internet and computing technologies are integral to a wide breadth of intimate and personal human practices including caring for newborns (Hayes et al. 2014), building and maintaining familial relations (Ames et al. 2010), grieving for a deceased friend or relative (Brubaker and Hayes 2011), crafting new identities (Haimson, Bowser, et al. 2015), and finding support during significant life transitions (Haimson, Brubaker, et al. 2015). Yet, all of these studies also point to the significant limitations of current computational systems for fully supporting the richness of human identity, interaction, and care.

## 2.2 Ubicomp's Promises and Threats

As personal ICTs have become 'ubiquitous,' their integration into everyday life has been less "calm" than early visionaries had hoped (see Weiser 1991, for one particularly prominent vision; see also Tolmie et al. 2002; Abowd and Mynatt 2000). Researchers have found that the diffusion of these personal ICTs have created paradoxes of control and autonomy for their users (e.g., Mazmanian 2013); they have raised questions about shifting temporalities (see Wajcman 2008); and led to concerns about multitasking (e.g., González and Mark 2004), the blurring of work and home (e.g., Chesley 2005), and threats to human connection (e.g., Turkle 2011). As Dourish and Bell (2011) put it, the "ubicomp of the present" is "messy." Its practical reality is one of contestation and conflict as ideas of "what technologies are and what they do… are different among the different groups, places, contexts, and circuits that characterize contemporary ubicomp" (5).

In his essay, "The World is too Much with Me," Lightman (2004) asked,

> Haven't we all seen people talking on cell phones while dining or riding the train, deadlines and lead times grow shorter and shorter, video screens imposed in the most unexpected of places? (Lightman 2004, 289)

Beyond just a concern about presence and absence, Lightman also linked new technologies to concerns about speed and temporality. He continues, lamenting that:

> All around me, everywhere I go, I feel a sense of urgency, a vague fear of not keeping up with the world, a vague fear of not being plugged in.... I struggle to understand what has happened to the world and to me, why it has happened, and what exactly has been lost (289)

Prominent social theorists have figured ICTs as agents of social change for many years. Take, for example, Manuel Castells dramatic opening to his *Rise of the Network Society*,

> Toward the end of the second millennium of the Christian era, several events of historical significance transformed the social landscape of human life. A technological revolution, centered around information technologies, began to reshape, at an accelerated pace, the material basis of society. (Castells 2010, 1)

Although not so generally striking in their language, a wide range of scholars have linked new technologies to dramatic changes in human society, often raising concerns about the speeding up of society, changes in interpersonal relations, and apparently detrimental impacts on individuals' ability to concentrate, focus, or be present (e.g., Agger 2004; Urry 2000; Virilio 1997; Turkle 2011; See Wajcman 2008).

Within the CHI community, researchers have raised questions about the link between ICTs and changing temporalities as well as associated values of busyness and productivity (e.g., Harmon and Mazmanian 2013; Leshed and Sengers 2011; Lindley 2015; Mazmanian, Erickson, and Harmon 2015; Odom, Selby, et al. 2012; Odom, Banks, et al. 2012). For example, as Mark, Voida, and Cardello (2012) suggests, computational tools which operate at the "speed of electrons" seem to necessarily imply a similarly fast paced

life for their users. Although these researchers all recognize some imbrication of technology and busyness, speed, or efficiency, this is not always a clear cut deterministic relationship. Sengers (2011), in particular, draws attention to the longer histories of productivity, control, choice, and efficiency within American culture more generally; and Wajcman (2015) attends to broader changes in the workplace and in gender roles in society more broadly. Likewise Lindley (2015) traces a long history of time and speed that precedes any contemporary forms of ubiquitous computing. Ultimately, all of these scholars demonstrate that the role of computing in shaping everyday life is more varied and complicated than sweeping social theories might suggest.

In early assessments of the impacts of mobile ICTs on daily life, the phenomenon of "constant connection" stands out, in particular, across a wide swath of research. Accountabilities to work, in particular, seemed to expand with the spread of mobile telephony, as individuals described totalizing levels of technology use. For example, as Wajcman and Rose (2011) described,

> One employee reported that he wouldn't be able to effectively carry out his job role if he was a smoker and didn't have a mobile phone. It would not be appropriate for him to be unavailable for the 5–10 minutes it would take him to go outside and have a cigarette. (955)

A widely-circulating concern that ICT-induced "perpetual contact" (see also Katz and Aakhus 2002; Ling 2004) paradoxically leads to a 'disconnected' experience of family and friends only seems to have been exacerbated by the further development of the smartphone. Turkle (2011), for example, has echoed this sentiment in her recent book reporting on years of empirical work studying the diffusion and impacts of ICTs more generally in human life. In the concluding chapter that focuses on smartphones, in particular, she argued that Americans, in being always connected, were both never truly alone, and also never truly present with the people in their company. As expressed by the title of her book, she characterizes this state as one of being "alone together" and argues that today, "we expect more from technology and less from each other."

In assessing the ubiquity of the cellular phone, a decade ago, Gergen (2002) similarly described a new phenomenon of "absent presence" that he has seen develop alongside the proliferation of this personal mobile communication technology.

> One is physically present, but is absorbed by a technologically mediated world of elsewhere. (227)

Academic descriptions of individuals absorbed in the constant use of ICTs (e.g., Gergen 2002; Turkle 2008) reverberated in the illustrations and photographs which accompanied these popular articles, and even in advertisements for new smartphones promised as less-problematic than their predecessors. Many of the problems associated with these pervasive ICTs and their transportation of ICT users to a "world of elsewhere" (Gergen 2002) related to the perceived intrusion of the workplace in family life and personal time. Headlines asking "Is your child a BlackBerry orphan?" offered smartphone-owning parents tips on how to balance work and family (Salemi 2010), while other articles warned of the "risks of parenting while plugged in" (Scelfo 2010).

A breadth of research had drawn attention to the impacts of mobile ICTs in blurring or eroding boundaries between work and personal life. By making workplace communication an 'anytime, anywhere' possibility, ICTs were seen as contributing to the colonization of personal and family life and increasing the amount of workplace-related stress in the home (e.g., Grant and Kiesler 2001; Chesley 2005; Mazmanian 2006; Towers et al. 2006; Duxbury and Smart 2011). Although some studies show that this is experienced as a leash or strain (e.g., Jarvenpaa and Lang 2005; Middleton 2007), others have shown that new ICTs are positively experienced in terms of new possibilities for flexibility and human connection (e.g., Bittman, Brown, and Wajcman 2009; Wajcman, Bittman, and Brown 2008).

Yet, much of this research was centered in an organizational context, and relied on interview, survey, and diary studies to account for experiences of home life. There remains a dearth of first-hand empirical work that documents the lived experience of mobile ICTs outside the workplace.[14]

[14] See also Wajcman (2008) on the need for empirical work to re-ground social theories of technology-related time pressure.

More recent works have focused on the ways that smartphones are "affective technologies" from which their owners derive positive psychological benefits. Although a small percentage of users reported feeling 'relief' when their mobile phones were lost, more commonly the removal of the mobile phone was associated with "negative feelings, such as loneliness/disconnection, anxiety, and boredom" (Hoffner, Lee, and Park 2015, 1). Within the workplace, recent studies have shown that – in opposition to researchers' hypotheses – smartphone owners did not experience greater "work home interference" although they were less likely to engage in "recovery" activities – daily non-work down time (Derks et al. 2014).

Within the popular press, a similar diversity of promises and threats are associated with new developments in ubiquitous computing. Compare, for example, Slaughter (2012) on the benefits of mobile and network technology for working parents with Maushart (2011)'s memoir about the benefits of unplugging her family for a year. Analyzing stories like these alongside advertisements for the smartphone, I have previously shown how this particular form of ubiquitous computing figures powerfully within discourses of both promise and threat in contemporary American society (Harmon and Mazmanian 2013). In analyzing these stories from the perspective of how they surfaced promises and threats about the impacts of the smartphone as a newly everyday and ubiquitous object, I examined how its everydayness (re-)configured both the user and non-user[15].

In this previous work I showed how the stakes of both use *and non-use* were always entangled with *the enactment of shared sh cultural values*. In particular, although each story – of smartphone adoption and smartphone rejection – articulates a single idealized subject position of either 'user' or 'non-user,' they both do so by making appeals to the very same cultural values. The smartphone thus appears as a tool for achieving autonomy and appears simultaneously as a tool that destroys autonomy. This prior work emphasizes the ways that cultural values are enacted and unstable, produced through patterned

[15] This analytic orientation was inspired by Haraway (1997) who, in writing against the bifurcation of technology and humanity on grounds of 'purity,' argued for the need to study contemporary society as it is always already "enmeshed in technoscience, with its promises and threats" (44).

use rather than embedded correctly or incorrectly in the technical artifact. The present dissertation further develops this line of research.

## 2.3 Emergence of Non-Use Studies

Although there have been numerous studies of the impacts of ubiquitous computing as it is used, works studying the *non-use* of ubicomp are only recently beginning to emerge (see, e.g., Morrison and Gomez 2014; Baumer, Burrell, et al. 2015).

The non-use of computing technologies was once understood almost solely as an indication of a problem to overcome – either as a human or technological deficit. Early 2000s research in technology studies typically assumed that the non-user was somehow deprived, and more generally did not see such individuals as important to a field seeking to understand the co-construction of *users* and technologies (Wyatt 2003). Early digital divide research likewise understood the non-user as someone who was lacking in education, skills, or financial ability (Selwyn 2003). As such, Selwyn wrote that early 2000s research in this area – where non-use was a common phenomenon – still focused only on the users and adopters of new technologies. Scholars in HCI have sometimes attended to the phenomenon of non-use within the context of evaluating new computing technologies, but still understood the phenomenon in the negative. In this case, non-use was typically interpreted as indicative of poor design, and non-users were viewed as "potential users" (Satchell and Dourish 2009). If these non-users were not lacking in education or skills, then perhaps they had been stymied in their adoption of a technology by poorly designed interfaces. Raising questions about the more or less implicit assumption that technology adoption and use were markers of positive progress, scholars like Wyatt (2003), Selwyn (2003), and Satchell and Dourish (2009) were among the first to advocate for attention to non-use within the academic communities of Informatics and related disciplines.

Through an autobiographical account of her own non-use of the automobile, Wyatt (2003) explored the notion of computational non-use via metaphor. Writing at the time of substantial policy making with regards to new and emerging Internet infrastructures, the stakes of her argument were explicitly political. Seeing value in her own choices to not own or use a car, Wyatt questioned whether it was "appropriate" for policy-makers to assume that current non-users of the Internet wanted to, or should, become users. Noting the limitations she faced in not using an automobile, Wyatt expressed concerns that people's everyday choices, social and financial opportunities, and ability to participate fully in public life would one day be constrained and shaped by their willingness to engage with and through the Internet. Wyatt noted that researchers like Kline (2003), Kline and Pinch (1996), and Bijker (1995) had, from an historical perspective, attended to the ways that resisters of the telephone, car, and bicycle had shaped the future of these technologies and their related infrastructures. Wyatt saw it as a significant limitation of more contemporary work that researchers were not studying the non-use of technologies in the moments before they became "stabilized and normalized" (Wyatt 2003, 79). Ultimately, Wyatt argued that "by focusing [only] on users and producers, we run the risk of accepting a worldview in which adoption of new technology is the norm" (78).

Selwyn (2003) raised similar political and ethical concerns with what he called a "pathological approach" to non-use – a clinical framing of the phenomenon as marked by individual deficiencies in need of remedy. He argued that this approach, common in early 2000s digital divide research, failed to recognize individual choices and devalued the beliefs and practices of people whose ideologies were out of alignment with a techno-progressive narrative by diagnosing them as abnormal. Alongside this political and ethical concern, Selwyn (2003), a scholar of "the permeation of new technologies in social settings" (116), argued that a failure to attend to anything but *use* limited scholars' theoretical ability "to map and understand the social realities of the 'information age' " (101).

As Satchell and Dourish (2009) wrote several years later, studying non-use was an important *responsibility* that researchers in HCI had "towards the people in the worlds into which our technologies are introduced" (15). They described this responsibility as having both an ethical and methodological com-

ponent. Studying 'non-use' was, in part, about countering the narrative that technological development and proliferation was inevitable (and, implicitly or explicitly, positive). Following from this, they argued that the concerns of research participants should be taken seriously in their own right, rather than being used only as evidence for "one sort of potential product or another" (Satchell and Dourish 2009, 15). In addition, studying non-use was also important for understanding how "interaction reaches beyond 'use' " and attending to "the ways in which experience may be intimately shaped by information technology outside or beyond specific circumstances of 'use' " ( 9).

For all of these early scholars, then, studying non-use has both political and theoretical importance. Yet, as they all acknowledged, studying non-use presented some important challenges for academic scholarship. Firstly, the underlying assumption of technological progress, which framed non-use as a problem to solve, located the practices of non-users as outside the scope of relevancy to most research questions. Secondly, non-users seemed hard to see or identify. That is, if non-users were not excluded from the start as irrelevant to studies of how users shaped technologies-in-practice, then methodological strategies of "following the actors" could still render them invisible (Wyatt 2003, 78). Likewise, for researchers in HCI, a field focused by definition on "interaction," locating and finding non-users was non-obvious (Satchell and Dourish 2009, 13).

In recent years, both of these things have shifted, to some degree. Although adoption and use are still often taken as the goal of research, particularly in HCI (e.g., Oostveen 2014), the early work discussed above made a significant impact in legitimizing non-use as an important area of research. In addition, alongside the arrival of ubiquitous computing, the non-use of computing technologies has become all the more visible. In part, as Baumer, Burrell, et al. (2015) note, the arrival of ubicomp makes the non-use of things like email, a mobile phone, or social media stand out as newly noteworthy or remarkable. In addition, researchers studying technology-in-use have raised questions about the potentially negative effects of ubiquitous computing, and the potentially positive effects of some forms of non-use (e.g., Mark, Gudith, and Klocke 2008; Mark, Voida, and Cardello 2012; Turkle 2011). A broader conversation about disconnection, detox, and unplugging from digital technologies in the popular American media (e.g.,

Madrigal 2013; Richtel 2012; Thurston 2013; Roberts 2014) is further indicative of a cultural shift away from the basic assumption that technology adoption and use is always more desirable than rejection or non-use.

Thus, although scholarship in response to these earlier calls to study non-use was somewhat slow to develop (as lamented by Kaun and Schwarzenegger (2014) and Morrison and Gomez (2014)), a rich interdisciplinary conversation is now emerging (e.g., Portwood-Stacer 2013; Baumer et al. 2013; Foot 2014; Lee and Katz 2014; Oostveen 2014; Roberts and Koliska 2014; Schoenebeck 2014; See Baumer, Burrell, et al. 2015, for a brief, HCI-centric review; and Morrison and Gomez 2014, for a lengthier, more media studies oriented review).

One large set of recent works have focused on examining and categorizing the contemporary discourse around "disconnection," "media refusal," and "media pushback" (e.g., Portwood-Stacer 2012a, 2012b, 2012c; Morrison and Gomez 2014; Foot 2014). These works have demonstrated the broad extent of conversations in the popular media about non-use and mapped out several ways of categorizing this discourse. For example, in a series of 2012 articles, Portwood-Stacer (2012a, 2012b, 2012c) examined the ways that non-use discourses tend to fall into one of three general categories: talk of technology 'addiction,' talk of disconnection as an 'ascetic' project of personal improvement, and talk of disconnection as an 'aesthetic' performance of elitism and taste.

A second set of researchers have taken a more practice based approach. Some of these works have examined what happens when individuals participate in some kind of (often imposted) temporary period of total technology disconnection (e.g., Roberts and Koliska 2014; Lee and Katz 2014; Kaun and Schwarzenegger 2014). These authors show how disconnection can be experienced as a positive activity, and suggest that studying it reveals – by way of contrast – just how constantly connected people's everyday lives are.

Other researchers have mapped the ways that individuals reject, resist, or pushback against particular media or technologies by choice and over longer periods (e.g., Baumer et al. 2013; Schoenebeck 2014;

Portwood-Stacer 2013; Oostveen 2014). Like the discourse studies mentioned previously, these works often map the set of reasons people give for wanting to 'not use' technology, or classify users into particular groups, such as the resisters, the rejecters, the excluded, the expelled, and the unawares (Oostveen 2014).

All of these studies have contributed in important ways to the understanding of non-use and also to the ways that people are experiencing the arrival of ubiquitous computing. This scholarship draws attention to the way that ubiquitous computing is characterized not only by seamless integration in daily life, but also by conflict, contest, and unease. These scholars highlight the continuities between public conversations and academic scholarship, and draw attention to the *reasons* that people give for wanting to resist or refuse technologies, as well as the difficulties they face in doing so (see, e.g., Portwood-Stacer 2013, on the difficulty of Facebook abstention). In many ways, then, such research confirms the earlier concerns of Wyatt (2003) that ICTs would become as central to social, organizational, and political life as automobiles already were.

However, as a new set of scholars have been building a broader corpus of research in this area, a new set of concerns has arisen.

First, this new research can sometimes leave behind the earlier political concerns of these pioneering scholars. In part, the very language of 'non-use' framing it as the negative inverse of 'use' seems to linger from the historical assumptions that 'use' (or adoption) is the end-goal, and that 'non-use' is a problem to fix. Within the field of HCI, with its disciplinary need for researchers to establish 'design implications' (see Dourish 2006; Plowman, Rogers, and Ramage 1995), contemporary studies of non-use often still succumb to a research framing that figures non-use as a problem to be solved. For example, Oostveen (2014), in an expansion of Wyatt (2003)'s earlier taxonomy of non-users, describe their own work as something that "presents possible solutions to turn current non-users into future users." On the flip side, other research glorifies non-use and disconnection as an important strategy for regaining 'control' over computing which they posit as taking over human life (see, Morrison and Gomez 2014). Moving away from the simplistic position that figures non-use as a problem and use as a solution should

not mean simply inverting it such that non-use is the solution to a problem of use. Wyatt (2003)'s own concerns stemmed from the recognition that when technologies became deeply interwoven into social practices and cultural institutions, they could *not* be simply resisted without significant sacrifices to the individual's ability to fully participate in society. Indeed, this is what Portwood-Stacer (2013) finds is now true about Facebook abstention. A focus on "non-use" alone, however, is not enough to grapple with the broader set of social obligations which compel participation through the use of computing.

Second, many of the studies of non-use that move beyond the transformative and development oriented rhetoric of Oostveen (2014) are typically characterized by examinations of what we might consider extreme or extra-ordinary cases of 'non-use' – people who explicitly refrain from using particular technologies in overt acts of performative refusal (see Portwood-Stacer 2013), in dramatic temporary gestures (e.g., giving up Twitter for Lent Schoenebeck 2014), or as a result of forced disconnection, often in the context of a undergraduate course assignment (e.g., Kaun and Schwarzenegger 2014; Lee and Katz 2014). There is still a need for work that returns to the call of Satchell and Dourish (2009) in attending to the variability of use and non-use and all those ways that information technologies shape human experience outside of the binary extremes of rejection or totalizing adoption and incorporation. For fields with a history of focusing almost exclusively on the use of ICTs (see Wyatt 2003; Satchell and Dourish 2009), showing the importance of studying non-use on its own terms was a necessary first step. However, as this area of research has begun to develop more broadly in the last few years, researchers now need to move beyond this foundation, and devise ways to explore these phenomena in non-binary ways (e.g., Baumer, Burrell, et al. 2015; Kaun and Schwarzenegger 2014; Morrison and Gomez 2014) and from perspectives that allow for a more holistic attention to the socially situated nature of both technology and human action.

## 2.4 Moving Beyond Use

Non-use studies shares with the broader field of Ubicomp a need to re-theorize the relationship between humans and computing technologies. Scholars have begun to question the notion that control-laden 'use' might be the only relationship between technology and people (see also Baumer, Burrell, et al. 2015). I turn to this question of reformulating use as the center of research inquiry in the final section of this literature review, which examines recent calls for HCI to move beyond interaction.

Tying together these research areas – in ubiquitous computing, and in non-use studies – is not just the co-emergence of their phenomena of interest (see, Foot 2014, on the joint arrival of ubiquitous computing and large-scale pushback against digital media), but also a shared need to begin theorizing the human-computer relationship differently. Old models of 'interaction' and 'use' are proving insufficient in both areas of research, for related reasons.

The physical move of computers off the desktop, out of the workplace and laboratory, and into the fabric of personal and everyday life has been seen as re-configuring the relations between computing and culture, society, and the production of meaning (Sengers et al. 2004; Harrison, Sengers, and Tatar 2011). This transformation of computing from a tool for work to a more broadly embedded cultural artifact raises the political stakes of research in Information Science and HCI (Light 2011), and increases the need for work that "analyz[es] and incorporat[es] the stories, meanings, and social networks that these devices engage" [Sengers et al. (2004); p.14]. Similarly, Abowd and Mynatt (2000) developed the notion of 'everyday computing' to address the temporal scaling of interaction in ubiquitous computing environments. They suggest the importance of moving from the notion of 'tasks' – which might be computer-centric – to 'activities' – which are human-centric and might involve computers in a more continuous way.

In more recent years there have been numerous calls to reformulate HCI around something other than 'interaction and the moment of use. For example, Bannon (2011) argued that the time for 'human computer interaction' has passed; and HCI should should redirect its attention from 'the interface' to "the

exploration of new forms of living with and through technologies *that give primacy to human actors, their values, and their activities*" [Bannon (2011), 50; emphasis added]. Verbeek (2015) similarly called for the need to rethink "interaction" as the primary way we understand the relationship between humans and technical artifacts.

Echoing scholars that have identified an ongoing paradigm shift in HCI research (Bødker 2006; Harrison, Tatar, and Sengers 2007; Harrison, Sengers, and Tatar 2011), Bannon (2011) emphasizes that the re-configuration of HCI – and re-centering around something other than Human-Computer Interaction, and more around Human-Human interaction via/with computing technologies as resources – is necessary both in light of the arrival of ubicomp as well as developments in CSCW research which similarly emphasized the role of computing in producing social situations and culture. Indeed, one of the hopes for new research in 'non-use' studies is to provide the empirical basis for:

> reconsider[ing] foundational questions about what we mean when we talk about use and users in studying human-computer interaction and sociotechnical systems. (Baumer, Burrell, et al. 2015, 56)

Despite these calls, use and interaction continue to persist as analytic frames for much work within Informatics and related fields. This may seem most readily apparent in the titles of fields such as "human computer interaction" and "user experience." However, a bias towards focusing on use persists in broader disciplinary spaces including organizational studies, sociology, and science, technology and society (STS) where researchers studying "technology-in-practice" generally take that term to mean "technology-in-active-use" (see also Wyatt 2003, on this point). Sociologists of perpetual contact, for example, reasonably look to phone logs – documentations of specific acts of technology use – as a supplement to retrospective interviews or surveys (e.g., Bittman, Brown, and Wajcman 2009; Wajcman, Bittman, and Brown 2008).

A commonly recounted history of the discipline of HCI (see, e.g., Harrison, Sengers, and Tatar 2011; Sambasivan 2012) argues for a need to move beyond traditional psychological models of interaction

(e.g., Card, Moran, and Newell 1983, 1986).[16] As Sambasivan (2012) wrote, a particular *imaginary* of the user as an individual interacting with a singular computer dominates the field:

> The imaginary … of the *user* in HCI is typically an individual who sits in front of a computing device. This prototypical user owns his or her device and is mostly entirely capable of operating the computing device, by formulating goals and achieving activities and tasks towards reaching the goal. (1-2)

This imaginary, she argues, is "severely limiting." Sambasivan's own theoretical grounding follows in the lineage of activity theory within HCI. Her particular contribution, however, is less a novel theory and more importantly a new orientation to the way that HCI scholars and practitioners might conceptualize 'the user.' Sambasivan describes a new orientation to 'use' and 'the user' that she calls "the production of use":

> Production of use is a multi-user design analytic that examines the relational aspects of user groupings, technologies, and resources, and how they together produce use. (13)

Critically, rather than identifying specific aspects of the world, or calling for attention to *more* context, Sambasivan describes this analytical approach as "a relational exercise that considers the activity and relations between and among users and technology" (14). In analyzing her own field sites, the crucial motivation for this exercise is to broaden the unit of analysis to include a multiplicity of users with varying degrees of control and directness of interaction:

[16] Notably, however, some of the alternative models of interaction – like ethnomethodology, phenomenology, practice-based attention to 'human action,' and a "cultural-historical" approach – have been around almost as long as these 'traditional' models (e.g., Suchman 1987; Winograd and Flores 1987; Bødker 1991; Bannon 1989). Although many argue that a cognitivist paradigm has shaped the development of the field (e.g., Harrison, Tatar, and Sengers 2007), these foundations have never been that stable. Many alternative theories have been proposed and developed over the history of the field. Other notable contenders for the theoretical foundations of the field have included distributed cognition (Rogers and Ellis 1994; Hollan, Hutchins, and Kirsh 2001) and activity theory (see Nardi 1996, for a description of activity theory for an HCI audience including a comparison with distributed cognition and situated action).

> Production of Use is motivated by the changing unit of analysis in technology use; in many cases, it is not an individual user sitting in front of a computer with a personal and private relationship, but use may be split among multiple users. (Sambasivan 2012, 14)

Her argument thus suggests that HCI's difficulty in situating computing may not be solved by putting computing "in its place" (Harrison, Sengers, and Tatar 2011) by attending to *more* context and varied situations (see also boyd and Crawford 2012). Rather, HCI has long been hard pressed to fully engage theoretical resources like distributed cognition or situated action so long as the imaginary of the user and the analytical frame of 'use' occurring at the site of the interface persisted.

More recent works, have continued in the direction of Sambasivan (2012)'s expansion from a single user and a computing device, to multiple users and a computing device. Recent calls to move "beyond interaction" (Verbeek 2015) or to "give primacy to human actors, their values, and their activities" (Bannon 2011, 50) suggest more radical reconfigurations of the way we frame and analyze the relations between computing, practice, social interaction, and lived experience. We thus need a new place to relocate computing within the situations it takes up for analysis.

In this dissertation, I suggest that one way to do this is to take up the anthropological trick of cutting up the space of analysis differently (see Seaver 2015), to re-configure the analytical framing of computing, *context*, and practice. We might study computing as something that is a part of – rather than isolated from – the 'context' of human activity. This move would suggest studying it alongside and on equal terms with other cultural products and artifacts. Moving 'computing' to the realm of 'context' allows for the foregrounding of human activity and the recognition of ways that computing is part of that activity outside of circumscribed moments of use or non-use. We can attend to the ways that computing shapes experience and action beyond the moment of use (Satchell and Dourish 2009), how shared patterns of use and non-use shift what it means to enact cultural roles, like "an effective knowledge professional" (Mazmanian, Orlikowski, and Yates 2013). Computing itself is placed in the realm where we would otherwise imagine automobiles and freeways (Wyatt 2003), or discourse and cultural stories providing

a background for its use (Harmon and Mazmanian 2013). Computing becomes the background for the production of culture, practice, and activity.

# Chapter 3

# Methods & Approach

2011, San Francisco Bay Area.

Levi Felix returns from a multi-year sabbatical on a remote off-the-grid island. He had been away from the technology startup scene since 2009 – after a near- death experience at SXSW (due to internal bleeding from a lifestyle and stress-related ulcer). Inspired by his sabbatical, he founds a new organization, Digital Detox. At hosted retreats, participants practice yoga, hike, swim, stargaze, and create 'analog art' amongst the redwoods:

> [T]he original tech-free personal wellness retreat where attendees give up their smartphones and gadgets in exchange for an off-the-grid experience of personal growth, serenity and bliss. (Digtal Detox 2014)

Summer 2012, America.[1]

[1] It is unclear exactly where Oprah might have made this decision. According to Wikipedia she has homes in all of the following US states: California, New Jersey, Illinois, Florida, Colorado, and Hawaii.

Oprah is so moved by Sheryl Strayed's bestseller *Wild: From Lost to Found on the Pacific Crest Trail* that she revives her popular book club after a year- long hiatus. In an article on her website, Oprah highlights this sentence as her favorite line in the book:

> Of all the things I'd been skeptical about, I didn't feel skeptical about this: the wilderness had a clarity that included me. (Oprah 2012)

February 2013, San Francisco.

Arianna Huffington takes the stage at Wisdom 2.0 – a conference that brings together mindfulness teachers with tech industry leaders – to showcase a new iPhone app, GPS for the Soul:

> It [measures your] stress… and then you are able to course-correct, simply by launching a guide… what- ever helps you to get back into that place of peace, wisdom, strength, serenity. (Huffington and Rozman 2013)

The clarity that Sheryl Strayed found on the Pacific Crest Trail, the serenity that Digital Detox promises retreat attendees, and the peace to which GPS for the Soul might help one return certainly seem lacking in American lives characterized as "overwhelmed," "maxed out," or "busier than ever" (Schulte 2014; Alcorn 2013; Darrah, Freeman, and English-Lueck 2007).

Cultural critics and scholars alike often draw a connection between the spread of mobile information technologies and these feelings of busyness and stress. As Matt Richtel wrote for the New York Times:

> The lure of constant stimulation – the pervasive demand of pings, rings, and updates – is creating a profound physical craving that can hurt productivity and personal interactions. (Richtel 2012)

Likewise, researchers at the University of California, Irvine found:

> Being cut off from work email significantly reduces stress and allows employees to focus far better. (Wilson 2012; summarizing Mark, Voida, and Cardello 2012)

And, so, alongside the continued spread of mobile computing, calls for disconnection and renewed self-control grow ever more prominent (see also Morrison and Gomez 2014; Foot 2014).

My dissertation investigates the relationships between these intertwined phenomena – the experience of a messy kind of ubiquitous computing; lives that feel busy and stressful; and desires and attempts to disconnect or find bliss – through a multi-sited (Marcus 1995) and polymorphous (Gusterson 1997) ethnographic inquiry.

Over the last several years, my research has traversed a landscape of apparently disparate field sites. I have studied families and working professionals who live in the quintessential suburbs of southern California where their work, home, school and leisure lives turbulently intersect. I have walked through the dramatic Sierra Nevada peaks of Ansel Adams museum prints both in resplendent awe of 'nature' and, along with hordes of dirty (and temporarily homeless) thru-hikers, on an uncompromising mission to deploy technology in every possible way to assist in walking the entire distance from Mexico to Canada – through rain, hail, 100 degree temperatures, snow, and all variety of (usually relatively minor) injuries – in a single continuous backpacking journey. Alongside elite technologists, American mindfulness teachers, executive coaches, investment bankers, psychiatrists, neuroscientists, and parents, I have gathered in urban hotels and Zen centers scattered at the edges of parklands to try to enquire about 'wisdom' of the '2.0' variety. Across these sites, I have conducted hundreds of hours of observation, engaged in 50 formal interviews and numerous less-formal conversations, and collected and analyzed a wide variety of media artifacts – from articles about smartphone addiction to advertisements for new technologies that might finally let one "do it all."

This dissertation begins to map some of the partially shared textures of everyday life across these sites which might appear strikingly and iconically different in their location – the suburban household, the wilderness of the American west, the San Francisco Bay Area technology scene. Together they provide

a varied set of perspectives on their shared context – ubiquitous computing in early 21st century America. Although few things might appear congruous between an middle-class parent-professional and an unemployed 19-year old spending six months backpacking in the American west, they both share an attachment to an iPhone, taking pleasure and finding connection through apps like Instagram or Vine. A former-engineer in his late 30s talks about giving up a career, getting a divorce, selling a house and reconfiguring his entire life around long distance hiking, adventuring, and having as few social ties and obligations as possible; yet, he expresses a desire – which he conceives of as impossible to realize – about disconnecting from his iPhone in words that echo the sentiments of a privately practicing attorney attempting to juggle work, family, and personal responsibilities through patterns of using and not using of his own iPhone. A long-distance hiker shares on Facebook an advertisement for 'Wisdom 2.0' – a San Francisco conference bringing together mindfulness teachers and technology industry leaders. The opening quote in the handbook for Camp Grounded – a 2-day weekend retreat for overworked and over-connected young professionals in the San Francisco Bay Area – are famous lines that open an old John Muir book (the quote ends, "…going to the mountains is going home"); the same lines that also reverberated through Facebook posts about the Pacific Crest Trail (PCT) and conversations and signs when walking through Yosemite National Park and Muir's Sierra Nevada mountains. Ideas, people, and emotions traverse the contours and apparent boundaries between these many sites, and, in so doing, draw into relief new perspectives on connection, disconnection, and the role of computing in lived experience.

## 3.1 Multi-sited Ethnography and Polymorphous Engagement

Various forms of ethnographic inquiry have a long history in studies of user experience and human-computer interaction, often dated as originating with Suchman (1987)'s seminal work about situated action (see also Dourish 2006; Blomberg and Karasti 2013). In recent years, several HCI and Informatics scholars have begun to bring an anthropologically-grounded multi-sited approach to their research and

design endeavors, particularly in cases of explicitly trans-national projects (e.g., Williams et al. 2014; Lindtner, Anderson, and Dourish 2012), or studies examining large scale information infrastructures and associated organizations (often in research also scaled upwards across time as part of long-term longitudinal projects) (e.g., Ribes 2014; Pollock and Williams 2009, 2010; Karasti, Baker, and Millerand 2010; see also, Blomberg and Karasti 2013). These researchers have found multi-sited ethnography useful – as an inspiration for "multi-sited design" or adopted more straightforwardly as a research practice – because of its ability to help them grapple with scale. As Ribes (2014)'s title suggests, a multi-sited approach helps with the question of "How to a Fit a National Research Infrastructure in the Room."

However, scale matters in everyday life and with personal technologies, too. Scale also matters in the mundane. The 'macro' and 'micro' intersect in daily life; not just in obviously large-scale trans-national or trans-institutional computer systems or cultural projects. As Stewart (2007) writes about her own anthropological inquiry into the "ordinary affects" of early 2000s America:

> The terms neoliberalism, advanced capitalism, and globalization that index this emergent present, and the five or seven or ten characteristics used to summarize and define it in shorthand, do not in themselves begin to describe the situation we find ourselves in. The notion of a totalized system, of which everything is always already somehow a part, is not helpful (to say the least) in the effort to approach a weighted and reeling present. **This is not to say that the forces these systems try to name are not real and literally pressing. On the contrary, I am trying to bring them into view as a scene of immanent force, rather than leave them looking like dead effects imposed on an innocent world**. (1, emphasis added)

In her book, Stewart focuses on mundane and highly localized moments such as perusing magazine covers in a grocery store checkout aisle, or touring a new suburban subdivision in search of a family home. In so doing, she grapples with the intersections and interconnections of the 'micro' and 'macro' in ordinary moments of daily living. She brings an ethnographic sensibility and attention to the particular to her quest to locate "ordinary affects" – norms, fantasies of the good life, pressures, forces,

"connections between a series of singularities" – as they emerge across scenes which might otherwise appear disparate even as they occur in locations that are not geographically distant from one another.

It was this desire of anthropology to work across the scales of individual lived experience and 'bigger' cultural forces that prompted early experiments in multi-sited ethnography. As Marcus (1995) writes in his oft-cited review of "the emergence of multi-sited ethnography," anthropology was, in the early-1990s, struggling with how to conceptualize field sites which could – in resonance with contemporaneous theoretical developments – "cross-cut dichotomies such as the 'local' and the 'global,' the 'lifeworld' and the 'system' " (95). The goal of multi-sited ethnographic projects, thus, was not to deploy ethnography in the mapping of something which was totalizing and global, but rather to recognize that "there is no global in the local-global construct now so frequently evoked" (99). Defining a field site that could allow one to bring an anthropological sensibility to the study of "the world system" meant constructing 'the global' as "an emergent dimension of arguing about the connection among sites" (99). Thus, connections between research sites in a multi-sited endeavor are not pre-specified or clearly explicit in advance, but produced in the development of the research. In the center of the construction of the multi-sited 'site,' then, is not a specific location or system, but a thing that might be traced even as it emerged in an ongoing reflexive analysis. As Blomberg and Karasti (2013) remind an HCI audience:

> It is important to bear in mind – as Marcus reminds – that multi-sited field sites are not isomorphic with reified networks, technical systems, or conceptual models; but more accurately track ongoing processes in relation to such assemblages (Marcus 2009, 190). Furthermore, the metaphor of 'following' does not imply simply traversing a route laid out in advance, but rather actively choosing and constituting the ethnographic path (Coleman and Hellermann 2011, 3). (Blomberg and Karasti 2013, 394)

Within the domains of HCI and Informatics, the arrival of ubiquitous computing draws into further relief the ways that personal computing – not just large scale systems that might traditionally be classified as 'infrastructures' – can be multi-spatial and multi-temporal in their experience and material realization. As Blomberg and Karasti (2013) argues, a kind of multi-sited or polymorphous engagement

is especially useful for HCI as the field is also now engaged in a process of broadening its traditional unit of analysis (see, e.g., Bannon 2011; Taylor 2015; Verbeek 2015). As the field site is not bounded in advance by either a geographic location, particular (sub-)culture, or technological system, a multi-sited method requires an alternative approach to constructing the research site.

## 3.2 Follow the Metaphor

This dissertation follows most closely the multi-sited "mode of construction" that Marcus terms "follow the metaphor" (Marcus 1995, 108–109). Exemplified in works such as Haraway (1997) and Martin (1995) this mode of inquiry traces a cultural phenomenon as it manifests in multiple sites of human action and social life: discursively, experientially, materially, institutionally, and so on. The ethnography then becomes a way in to a space whose contours it attempts to trace, but does not – and can not – fully contain or map in their totality. As Haraway (1997) describes her book *Modest_Witness@Second_Millennium.FemaleMan©_Meets_OncoMouse*™ in its introduction:

> This book is sited as a node that leads to the Internet, which is synecdochic for the wealth of connections that constitute a specific, finite, material-semiotic universe called techno-science.

Specific methods of inquiry, thus, must respond to the inherent multiplicity of the phenomenon of interest, and the "field site" must evolve and emerge alongside the development and progress of the project. This form of ethnographic inquiry explicitly incorporates methods from Science Technology and Society (STS) and Cultural Studies in attending to discourse, in particular, alongside traditional anthropological modes of participant observation. As Gusterson (1997) emphasizes, the modes of data collection and analysis for contemporary ethnographic field sites are polymorphous and eclectic.

Martin (1995), for example, begins her inquiry with a question about how to understand immunity and health in America. She initially situates her questions in the history of shifts in knowledge about viruses

and vaccines. In the scope of her project, these shifts are punctuated by the 1940-1950s United States Polio epidemic and subsequent vaccine development, which she experienced as a child, and the HIV/AIDS epidemic which she was witnessing in the 1980s and 1990s as an academic based out of Baltimore. Her initial field sites include the obvious (and somewhat traditional) scientific laboratory, spending time with an immunology research group both in and out of the physical lab itself: including attendance in graduate classes, lab meetings, journal clubs, lectures, parties, and assisting in experiments. Over the course of the project, she was also a participant-observer in two other primary sites: HERO: an HIV/AIDS service organization in Baltimore, and ACT UP/BALTO: an HIV/AIDS activist group. Her team of seven graduate students (and several undergraduate students) combined participation, observation, and interviewing in further more apparently diverse realms: an allergy clinic, a support group for polio survivors, the ALIVE study (a clinical medical study related to HIV/AIDS), a college immunology class, training courses for corporations (e.g. ropes course retreats), activities of the Rouse Corporation (a developer of Baltimore's Inner Harbor, and low-cost housing), and alternative health clinics and practitioners. Notably, then, all of the participant-observation occurs within the general Baltimore area and over a mere three year period. This exemplary multi-sited ethnographic project, then, does not traverse dramatic geographic distances, nor extend over a particularly long period of time. The multi-sited-ness of it arises from its engagement with questions of immunity and subjectivity across scales of the individual, community, and society; across multiple different locally-occurring sub-cultures.

For Martin, the links between these sites are sometimes explicitly constructed by her and her co-researchers. For example, they bring electron micrographs of viruses and images of Western Blots (a way of visualizing proteins) from their immunologist interlocutors to the homes of local Baltimore residents as prompts and provocations for interviews. Other times, connections seem readily apparent: a clinical study of AIDS treatments and ACT UP! – the radical AIDS activism organization – are both constructed by concerns about AIDS and the HIV virus. An analysis of popular media also serves to frame and link up broader conversations across less obviously connected sites. In the opening chapter, advertisements and illustrations for popular and scientific magazine articles drive Martin's history of American views of the body – from metaphors of a fortress or castle, to visions of the body as a machine, to ideas of a

"flexible" immune system. Linkages among the more apparently far-fetched sites – such as between the immunology lab and the corporate ropes course – manifest in what Martin refers to as spontaneous "implosions" (see also, Marcus 1995). In one particular instance of this, Martin recounts sitting in on an immunology class on a day when the professor is describing the ways that an antibody is both flexible and specific – a Y-shaped cell that is both "keyed" to attaching to a particular pathogen, but has a hinge at the vertex where the three lines of the Y-shape meet. For Martin, in the moment, "this language crashed into contemporary descriptions of the economy of the late twentieth century…with a focus on flexible specialization, flexible production, and flexible, rapid response to an ever-changing market with specific, tailor-made products" (Martin 1995, 93).

Martin (1995) thus exemplifies the kind of research that Blomberg and Karasti (2013) describes as important to the field of HCI as it begins pursuing analyses at scales beyond individual moments of interaction with a desktop computer. Conducting ethnographic work that can construct a field site "at the intersection of the developing research interests, the multi-sited object of study, and the particular engagement of the researcher" requires "a willingness to pursue emerging and unfolding connections, flows, and discontinuities in constructing the sites, objects and topics of ethnographic inquiry" (395). This dissertation has grown out of an initial collaborative project focused specifically on working-professional-parents' experiences of mobile ICTs across the work-home boundary (see Mazmanian, Beckman, and Harmon, (to appear)). In pursuing emerging and unfolding connections, I have constructed its object of study by tracing continuities and discontinuities across multiple modes, ideals, and manifestations of connection and disconnection.

## 3.3 The Field of This Dissertation

Although of a necessarily smaller scope than the extensive research conducted by Martin (1995)'s 8-person team, this dissertation follows a similar trajectory in constructing its field site. The project grew out of an initial concern with the ways that ubiquitous computing technologies were becoming part of

everyday life in the early years of the 21st century. As described in the introduction, fieldwork began in early 2011, as part of a multi-investigator ethnographic project in collaboration with Professors Melissa Mazmanian and Christine Beckman. It was situated in response to a wide array of research pointing to the emergence of "constant connection" and the blurring and transgressing of work-home boundaries within the disciplinary background of Organization Studies.[2] In particular, the work grew out of Mazmanian's prior research studying the roll-out of BlackBerries in organizational contexts (Mazmanian 2009; See also Mazmanian 2013; Mazmanian, Orlikowski, and Yates 2013). Despite a wide array of workplace-focused – and generally interview-based – studies suggesting that smartphones and other mobile ICTs were having significant impacts on employees' time outside the office, first-hand ethnographic research on the use and experience of communication technologies in the broader context of everyday life was limited (see also, Wajcman 2008, on the need for more empirical research with regards to the experiences of mobile ICTs). Our ethnographic study was thus designed to examine how middle class Southern California parents and working professionals were negotiating the "anytime, anywhere" connectivity across the work-home boundary (see also, Mazmanian, Beckman, and Harmon, (to appear)).

While planning this fieldwork in 2010, I separately began collecting an archive of advertisements for and news articles about smartphones and related personal mobile ICTs. The initial discourse analysis arising from this collection appears in Harmon and Mazmanian (2013). Although not re-published as part of this dissertation, the analysis of these media artifacts alongside my initial fieldwork engagements with two pilot families for the larger ethnographic project about working parents proved a crucial step in shaping the direction of this dissertation.

[2] This project which has been conducted with Christine Beckman and Melissa Mazmanian remains ongoing. All together, we spent six months conducting ethnography in a hotel management organization, and later followed nine of those employees home, conducting approximately 6 weeks of fieldwork with each of their families. In this dissertation, I draw almost exclusively on interviews and observations that I conducted myself, with exceptions noted in the text itself. My engagement with this data, however, has been undoubtedly influenced by the many conversations I've had with both co-researchers. Publications that draw on this broader set of work include (Mazmanian and Erickson 2014; Mazmanian, Erickson, and Harmon 2015; A further discussion of the methodological approach for this collaborative project, and from an organizational studies perspective can be found in Mazmanian, Beckman, and Harmon, (to appear)).

In 2011 – while beginning an analysis of these media artifacts – I spent one week with each of two initial pilot families for the larger collaborative ethnography of southern California working parents, which underscored the importance of joining together media analyses with more traditional ethnographic research. As I and Melissa Mazmanian noted previously:

> [I]nformants often give accounts of their smartphone experiences in a language of "presence," "absence," "addiction," or "detox" that can sound lifted straight from the *New York Times*. Sometimes, confirming our suspicions, informants even offer up a citation. As researchers and designers interested in how people adopt, appropriate and experience mobile ICTs, it is critical to include these cultural stories themselves in our analyses. (Harmon and Mazmanian 2013, 1051)

For example, on one visit to Frank and Julie Davis's house in 2011, Julie relayed to me a story she recalled having read in the *New York Times* about how every time one's smartphone buzzes, alerting its owner of a new email, the owner gets a "hit" of dopamine.[3] She had, in response, become more concerned about her own smartphone use, wondering how it might be affecting her brain and body, and whether she might be developing a true "addiction."

Ultimately, the discourse analysis focused on how the conflicting imperatives to, on the one hand, adopt and use smartphones, and on the other hand, to reject or not use them, were constructed in relation to certain explanations of the relationship between computing technology and human values. The analysis was guided by a set of related questions:

1. What does the everydayness of the smartphone promise?
2. How is the smartphone user (and non-user) configured by these promises?
3. What does the everydayness of the smartphone seem to threaten?

[3] There are many such stories, and I did not get a specific citation, but see, for example, Richtel (2010): "Attached to Technology and Paying a Price"

4. How is the smartphone user (and non-user) re-configured in light of these threats?

This early analysis surfaced the importance of taking up connection and disconnection together – as interrelated forces – and for attending to the kinds of discontinuities and apparent paradoxes that surfaced in the wake of these simultaneously occurring but contradictory imperatives to both use and not use smartphones and related computing tools. That is, the discourse analysis began to shift my own attention away from patterns of information flows, and workplace-coerced obligations to be responsive. Instead, I became more attentive to the ways that technological capacities – and the circulating stories that made sense of them – were co-constitutive with understandings of more diffuse human values: what it *meant* for people to express community and togetherness, or what it was like to feel in (or out of) control.

An ongoing attention to American popular discourse continued to provoke and inform the evolution of research questions and ideas throughout the project. For example, in February 2013, just before beginning my hike of the Pacific Crest Trail, two-time Pulitzer Prize winning journalist Paul Salopek began a seven-year trek to follow "the pathway of our species' original migration out of Africa." Though historical in its aspirations, the journey was also relentlessly contemporary – "explor[ing] the major stories of our time" through new kinds of digital journalism, interactive websites ("digital campfires") and twitter feeds. All of this was made possible, of course, by the mobile ICTs that accompanied Salopek and his co-adventurers. On February 12, the official @outofedenwalk twitter feed read:

> Off the grid and moving east @paulsalopek texts: #Untethered: 'A sandblasting wind nixes the sat phones and email' #Edenwalk

What stood out at the time – and would guide my investigations on the PCT – was that Salopek might report being "untethered" via a text message that could be then relayed to twitter. The question of the research thus evolved from how to understand parent-worker's negotiations of the potential for "constant connection" to something about how we might understand the contemporary sociotechnical configurations which they and Salopek shared. These configurations were characterized by a preoccu-

pation with being (un)tethered, and simultaneously allowed people to take for granted some level of networked connectivity such that – even while walking in the remote outdoors – sending a text message would *not* render one "on the grid."

## 3.4 Background on Field Sites and Summary of Data Collection

### 3.4.1 Working Professionals and Middle Class Southern California Families

The families and workers who participated in this research were all middle-class residents of California – and primarily southern California[4] Suburban families in California have been the focus of recent anthropological studies that describe contemporary American family life as "frenetic," "busy," and "harried" (e.g., Darrah, Freeman, and English-Lueck 2007; Ochs and Kremer-Sadlik 2013). Southern California, in particular, is iconic not just for its beaches and sunshine, but also for its massive tract home developments and the seemingly constant automobile traffic on its freeways where workers commute to and from sprawling residential areas and centers of work; where parents in minivans and SUVs hurry to shuttle themselves and their families between school activities, soccer practices, shopping malls, grocery stores, yoga classes, and little league baseball games.

Middle class life for my participants – as it crossed between the site of the home and the site of the office – appeared at times as an almost perfect manifestation of popular tropes of contemporary American family life: the suburban "soccer mom," the struggles of "crunch time" (e.g., Neighmond and Knox 2013), the difficulties of "juggling" work and home, a feeling of "craziness" and "busyness" (e.g., Hallowell 2007), and a pervasive sense of "overwhelm" (e.g., Schulte 2014). Yet, as I conducted the fieldwork, I also experienced these family lives as an extreme example of all the contrasting details that thwart

[4] One hotel property that I visited was located in the San Francisco Area, but interviews from this hotel's employees are not ultimately used in the dissertation.

the necessary glosses of any form of generalization like “fast forward family” (Ochs and Kremer-Sadlik 2013) or “busier than ever” (Darrah, Freeman, and English-Lueck 2007).

In my fieldwork I found families struggling to negotiate the demands of parents’ ‘24/7’ workplaces alongside kids’ gymnastics schedules, southern California traffic, desires to eat dinner together, and the physical limits of exhausted bodies. I watched people rush between school and sports practices. I also saw people fall asleep on their sofas on lazy Sunday mornings. I have heard stories of a father clearing emails on the toilet at 4am, and a mother’s 4am trip to the gym – the only way to fit personal time into a day that might be packed with 3 different school schedules and 4 kids’ worth of after-school activities. I also watched whole families cuddle together on the sofa – kids watching a movie while dad, on his laptop, made picks for his weekly fantasy football league.

Some households felt characterized more by slowness than speed; by single activities rather than multitasking; and as noted, new ICTs were *not*, in fact, in constant or even terribly frequent use. Moreover, existing tropes of contemporary family life tend to pit crazy, “frenetic,” technology-infused lives in opposition to possibilities for “connection, affection, and care” in academic analyses. As University of California Press summary of Ochs and Kremer-Sadlik (2013) reads,

> Though there are also moments of connection, affection, and care, it’s evident that life for 21st century working parents is frenetic, with extended work hours, children’s activities, chores, meals to prepare, errands to run, and bills to pay. (back cover)

Turkle (2011) similarly suggests that technology use threatens personal and intimate relationships, rendering co-located technology users “alone together.” More popularly, recent memoirs warn against using technology and/or “hurrying” if one wants to build authentic and meaningful relationships (e.g. Maushart 2011; Stafford 2014). This apparent opposition between craziness and care, between technology and authenticity, denies the reality of the families observed in this research. Although they did sometimes describe their own lives as “crazy,” they also described – and I experienced – their lives as also richly suffused with care, love, and affection. This manifested in all the obvious ways – kids run-

ning to greet a parent just arrived home from work – as well as the more subtle ways – parents' worries about making sure the kids were eating all their vegetables at dinner.

Fieldwork began in 2011 with two families who volunteered to participate in the general project about how mobile ICTs were impacting family life, with a focus on adults' use of these technologies. I was the primary researcher engaging with both of these families for one week of ethnographic fieldwork. I spent approximately 25 hours (over four visits) conducting observations in the homes of each of these families. At the end of the week of observations, each family member was interviewed individually. Interviews were split between myself an a co-researcher. One of these families elected to participate in a "disconnection" experiment at the end of the initial one-week fieldwork engagement. The two adults chose times and days (a few evening a week) during which they would not use their iPhones (their kids did not have phones). After two weeks of conducting this experiment, myself and a co-researcher returned to their house to conduct a joint interview with both parents.

In 2012, Mazmanian, Beckman, and myself began a six month ethnographic engagement with Silver Lake Hospitality (SLH) – a hotel management company headquartered in southern California. Over the course of the study, we interviewed a total of 73 employees (I interviewed 19 of these 73), 16 employee spouses or partners (I conducted 4 of these interviews), and spent 28 days shadowing employees (I carried out 10 of these days of shadowing). As condition for our entry into the field, all participants were salaried employees, and thus at some mid-management or higher level of the organizational hierarchy. Research was conducted at the corporate headquarters, and at seven different hotel properties managed by the company. Days spent shadowing employees consisted of attending meetings, sitting in on conference calls, going to lunch, and whatever else employees were doing. Interviews generally lasted 60-90 minutes, and were semi-structured. They loosely adhered to an evolving set of interview questions centered on opinions and experiences of smartphone and email use, as well as questions about the organization's corporate culture.

Beginning in late 2012 (and lasting through 2015), we followed nine of these employees home to conduct ethnographic engagements with their families. I conducted two of these family engagements. Each of

these family engagements lasted approximately six weeks, during which time I conducted 12-14 visits to the family's home. Each visit lasted between 4-6 hours, for a total of approximately 65 hours of observation with each family during the initial six week engagement. At the end of these six week engagements, I and a co-researcher interviewed each family member. Concluding interviews lasted 90-120 minutes for parents, and shorter for children varying dramatically by the child's age. None of the interviews with children are used in this dissertation. For one of these families, four follow up visits were conducted over the course of the next year following the initial six week engagement. Each follow up visit consisted of two afternoons of observational research (2-4 hours), and a 30-60 minute catch-up interview with each parent. I conducted three of these follow up visits, and a co-researcher conducted one of them. I also assisted co-researchers in conducting interviews in the families where they were the primary ethnographer.

Note: Because of the economic/employment ties of many of the participants in this phase of the research, some personal details have been altered in an attempt to increase the anonymity of participants. These alterations are selective based on the relevance of details to the specific arguments being made herein.

### 3.4.2 The Pacific Crest Trail (PCT)

In 2013, I took my fieldwork and myself into the wilderness on a 2650-mile hike of the Pacific Crest Trail (PCT). The PCT begins at the US/Mexico border – less than a two hour drive from the southern California suburbs where this research project began. The trail traverses the Mojave Desert, Sierra Nevada Mountains, and Cascade Ranges before ending, 2,650 miles later, at the US/Canada border. Hiking the entire length of the trail in one journey is called a "thru-hike."

The Pacific Crest Trail Association (PCTA) – a non-profit organization that oversees and coordinates the work to "protect, preserve, and promote" the PCT across the numerous federal and state agencies that own and manage the land which the trail traverses – estimates that 5 months is about how long it takes to hike the entire trail. However, each person's hike is different. Notably, in 2013, Heather 'Anish'

Anderson set a new "fastest known time" for a self-supported backpacking trip of the PCT, completing the entire trail, unassisted, in a mere 60 days, 17 hours and 12 minutes. Most of the hikers that I met and talked with for this research spent between five to six months on the trail during their thru-hike. A vast majority of thru-hikers start in late April at the southern end of the trail – at the Mexico/US border near Campo, California – and finish in mid-September at the northern end of the trail – the US/Canada border near Manning Park, BC. These hikers are called "north bounders." A small number of hikers "south bound" the trail, hiking in the opposite direction, generally between July and November.[5] In 2013, when this research was conducted, approximately 1042 people applied for a permit to thru-hike the trail, and an additional 837 people applied for permits to hike at least 500 miles, but less than the entire length of the trail.[6] It is unknown how many people finished the trail. Only 258 people reported a completion to the PCTA in 2013[7], although completion reporting is entirely voluntary, and not everyone chooses to let the PCTA know. People leave the trail for a variety of reasons – personal loss of interest, injury, family emergencies, etc.

On the trail, the technological infrastructure one might be accustomed to in suburban California is non-existent. Cell signals were intermittent and unpredictable. There were no electrical outlets for recharging one's smartphone, camera, or GPS battery. Yet, daily blogging and instagramming was popular. Numerous smartphone apps kept one always located and oriented to the trail, the nearest water, a good campsite, the best highway on which to hitch a ride into town (more details on some of these apps can be found in chapter 11, Disconnection alongside ICT Use on the Pacific Crest Trail).

When I decided to take my fieldwork out to the PCT, I aimed to explicitly shift the context of my research to a site outside the constructs of work and parenting that often seemed to dominate the day to day lives of my southern California informants, and, consequently, the way they reflected to me about their personal ICTs. Was the proliferation of mobile ICTs only difficult for the working professional, struggling

[5] The temporal offset of the two hikes is in response to seasonal weather in the different climates at the north and south ends of the trail.

[6] See http://www.pcta.org/2015/improvements-southern-california-aim-protect-visitor-experiences-pct-environment-27304/

[7] See, again, http://www.pcta.org/2015/improvements-southern-california-aim-protect-visitor-experiences-pct-environment-27304/

with the well-recognized breakdown of work/home boundaries? What does ubiquitous computing look like in nature, and for people whose life ostensibly revolves around a 5-month reprieve from contemporary technology and society? What may be striking to those less familiar with the culture and practice of thru-hiking, is that this journey – that passes through six national parks, and 48 federally designated wilderness areas – is far from free of the reach of mobile ICTs, and as I will show, far from free of the desire for 'disconnection.'

The period of re-entry, after completing the thru-hike, was often experienced more dramatically than the time spent on the trail itself. As one person remarked in passing, six months after finishing the trail, as we chatted on Facebook to schedule an interview time:

> We're doing fairly well, just suffering mild existential angst at this point, no major meltdowns in the last few days!

While hiking the PCT from April through September of 2013, I conducted participant-observation for this research. Although not "on" as a researcher 24/7, I tracked forty informal conversations specific to the research project while on the hike in addition to numerous more ephemeral interactions. I tracked notes and reflections on the hike throughout the day on my smartphone, and spent time each evening recording more long-form fieldnotes in a small paper journal. I later conducted formal interviews with thirteen hikers, which lasted from one to three hours each, reflecting on their time on the trail as well as their "re-entry" to society after completing the hike.

### 3.4.3 Rhetorics and Events: Disconnection, Mindfulness, and Wisdom in a Digital Age

These two sites of primary ethnographic fieldwork are complemented by an analysis of the rhetorics of connection and disconnection that circulate in the public conversations that traverse these field sites, and manifest in popular accounts of unplugging as well as conferences and retreats about how to live a

good life in a 'digital age.' As mentioned previously, some of this analysis has been reported in Harmon and Mazmanian (2013).

This aspect of the research thus began with a highly organized assessment of over 100 magazine advertisements. As the multi-sited ethnography has progressed and evolved, I have continued to collect new articles, clip magazine ads, take photos of billboards, and archive video advertisements on YouTube. This collection is indebted to many of my peers and colleagues who forward me articles, members of my social networks who share things on Facebook and twitter, and many more chance encounters which emphasize the patterns of circulation that link these field sites together. While hiking the PCT through Northern California, for example, I came across a copy of the latest *Fast Company* magazine on a campground picnic table – its cover story promoting Baratunde Thurston's recent "#UNPLUG" experiment (see Thurston 2013).

In tracing discourses of disconnection, in particular, I have attempted to engage with some of its manifestations in conferences and events. I attended the "Wisdom 2.0" conference in San Francisco as a participant for three consecutive years (2013, 2014, 2015). I attended a "Camp Grounded" weekend retreat in 2014, as well as two "disconnect to reconnect" themed retreats, also in 2014.

Although I kept field notes, and engaged in some casual conversations with co-participants, I did not conduct any formal interviews as part of this segment of the research. Thus, my attendance at these events has not been accompanied by the same level of ethnographic engagement as other field sites. However, my first person experience of the events serves to usefully temper some of the more popular discursive constructions of events like Camp Grounded as *merely* about technology unplugging (see, e.g., critiques from Madrigal 2013; Jurgenson 2013; and Morozov 2014). My participation in these events is thus placed alongside an attention to discourses of disconnection in the second part of the dissertation.

## 3.5 Analytic Strategies and Theory Development

In line with the reflexive and improvisational mode of constructing the multi-sited ethnography, the analysis and theoretical development in this dissertation has proceeded in a similarly iterative process of ongoing engagement. The analysis has been inspired by more recent reconfigurations of grounded theory (see Corbin and Strauss 2007; and especially Clarke 2005, on "Grounded Theory after the post-modern turn") and has proceeded through a series of memo-ing and mapping techniques in developing the analytic position of *computing as context*. However, it is most deeply indebted to an approach explored in Martha Feldman's qualitative analysis class taught in the Spring of 2010 here at UC Irvine.

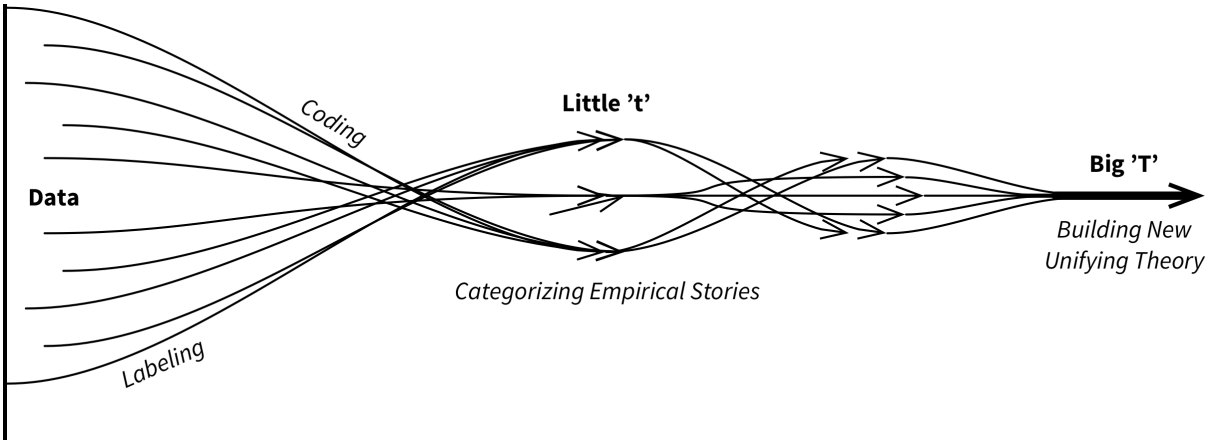



Figure 3.1: A traditional inductive model of data analysis. Described by Martha Feldman in Advanced Qualitative Methods Class, Winter Quarter 2011; re-depicted by the author.

A traditional method of inductive analysis, such as that advocated in earlier formulations of Grounded Theory (e.g. Glaser and Strauss 1967; Strauss and Corbin 1998), proceeds from a wealth of empirical data through processes of winnowing and categorizing to develop a new theory "grounded" in those multiple data points (see Figure 3.1). The goal in such research is to built up a single unifying analysis that might thread together the multiple pieces of empirical data. Such a method is most applicable in cases where there is clearly no existing theory which describes the situation under study, and where the researcher's goal is to develop new theory. The analysis might be seen as proceeding from the collection of data, through the building of what Feldman calls "little t" theories – empirical stories that recur across different pieces of data – which are ultimately joined together in a "big T" theory – the overarching

narrative which explains the phenomenon of interest. This type of inductive analysis stands in dramatic contrast to a deductive process of developing hypotheses (little 't'heories) based on existing 'T'heory as accepted by a scientific community and conducting experiments to test those hypotheses out in the world.

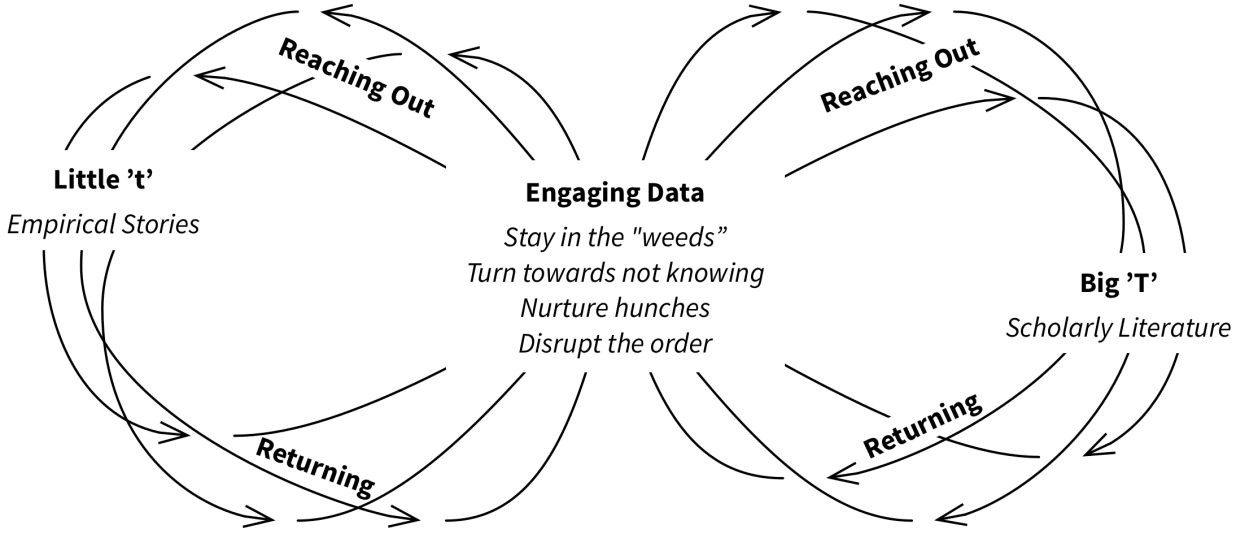



Figure 3.2: An iterative model of theoretically and empirically engaged data analysis. Described by Martha Feldman in Advanced Qualitative Methods Class, Winter Quarter 2011; re-depicted by the author.

In contrast to both of these linear approaches, Feldman advocated for a data-centered approach to qualitative analysis that engaged repeatedly, and in turn, with the formulation of multiple empirical stories and a breadth of possibly applicable scientific literatures (see Figure 3.2). In the course of writing this dissertation, these multiple engagements have sometimes occurred informally in the production of numerous memos and writings, as well as more formally in course projects, in talks presented at numerous conferences and workshops (Harmon 2011; Harmon and Mazmanian 2011; Harmon 2012a, 2012b, 2013; Gregg and Harmon 2014) and in collaborations on two prior publications (Harmon and Mazmanian 2013; Mazmanian, Erickson, and Harmon 2015). Arriving at the formulation of *computing as context* that is developed in this dissertation has thus emerged from a long process of ongoing engagement, and a desire to respond to the discontinuities that have appeared at each step of the way between the empirical stories in my fieldwork encounters and the often apparently totalizing depictions of ubiquitous

computing, constant connectivity, and the need for ‘unplugging’ and a return to ‘nature,’ across both academic and popular literatures.

# Part I

# Constant Connection in Suburban Southern California

# Chapter 4

# Punctuated Connectivity and Constant Potential

As the photo of the abandoned iPhone that opened this dissertation draws into visual relief (see Figure 1.1), 'connectivity' for the families and workers in this research was rarely "constant." In this first part of the dissertation, I explore some of the scenes of life which characterized a more punctuated form of connectivity for my Southern California research participants. This punctuated connectivity included moments of ICT use and non-use alike, often fluidly interleaved. How was computing implicated in daily routines? In particular, this first chapter explores the apparent paradox between my observations of punctuated connectivity alongside discourses of constant connectivity.

This chapter underscores the importance of separating analytically the more diffuse and pervasive human experiences of computing from isolated moments of interaction and use. In these stories, computing appears as a more subtle and indirectly experienced part of the context of everyday life, rather than a tool that occupies the center of attention and is used for a specific purpose or practice.

Despite my observations of punctuated and variegated connectivity, participants' frequently described feeling – in a negative way – that they were 'constantly connected.' For the working parents in the study,

in particular, the sense that their work was somehow intruding on their family and personal time – and in a way that was somehow related to technology – remained even when their phones were relegated to kitchen counters, upstairs, or otherwise not in active use.

Rather than suggesting that participants were 'wrong' to report this feeling of constancy alongside patterns of punctuated use, I suggest instead that the subjective experience of ICTs exceeds any isolated moment of interaction. Computing was experienced as a kind of latent potential. As a point of inflection between different realms of social life – for working parents, most often the realms of 'work' and 'home,' both broadly construed – ICTs served as a symbolic reminder of work yet to be completed, and functionally offered up the possibility of always doing something else.

## 4.1 He never answers

The abandoned iPhone which opened the dissertation (see Figure 1.1) belonged to Susan Miller, a stay at home mother of three young kids. On the day I took the picture, I had known the Miller family for about a week. On the prior Tuesday, when I had first met them, the kids took myself and a co-researcher on a "technology tour" (see Baillie et al. 2003) of their home (at our request). The kids were eager to show off the family TV, their Wii gaming system, the family iMac, their dad's laptop, and both of their parents' iPhones.

As would be somewhat characteristic across my 14 visits to their house, at the time of the tour neither parents' iPhone was in their personal possession. Showing us Susan's phone meant fetching it from a clock/speaker docking station on the kitchen counter. Chris's phone had to be tracked down. As he explained at the time, it "floated": often attached to a charging cable, or his laptop, or in use by one of the kids – especially on weekends when the kids were allowed more technology use than on school nights. Likewise, Chris's 'work' laptop was also frequently used by one of the kids, and during the tour,

we learned that he had just recently bought a second used laptop from a friend which was going to be dedicated to the kids' use so that Chris might be able to get his back for himself.[1]

On the following Wednesday, I had begun my observations by meeting Susan and the kids at their house in the afternoon. Around five, we left the house to go to a soccer practice for one of the kids. As we headed out, Susan told me that she was going to call Chris after we got there to coordinate plans for that evening's dinner and find out what time he was going to be home. We arrived at the soccer field twenty minutes later, and she called Chris as we walked down from the car to the park. She did not get an answer. To me, the technology researcher, she explained, "he never answers." She did not sound particularly upset about this. Her comment sounded more like she was relaying a simple fact to me, the new person.

When we got down to the field, her son went off to practice with the four of his teammates who are already on the field. After sending Chris a follow-up SMS, Susan dropped her iPhone, her car keys, her younger child's small blanket, her sunglasses, and a water bottle on the sidelines of the soccer field, and then she and the other kids headed over to an adjacent empty baseball field to kick around an extra soccer ball, play tag, and generally pass the time doing kid things.

She came back over a few minutes before six o'clock – over half an hour later – and picked up the phone again to make a call. Soccer practice was almost done and she was trying to get in touch with Chris – who had not yet called or texted in response to her earlier attempts to contact him. She explained to me, after hanging up, "No response from Chris. And I even texted him. I guess I'll just feed them [the kids]." We left the soccer field around 6:15 p.m., and just as we pulled into the driveway at the house about fifteen minutes later, Susan's phone rang, prompting her to say, before answering it, "Oh, there's Chris." It was only now, an hour after her first attempt at contacting him, that they finally connected to

[1] Over the course of my visits this seemed to sometimes work out. However, the three older kids were all into playing National Geographic Animal Jam and a couple of other kids computer games on the weekends, so, Chris's laptop remained in high demand as the third usable computer.

talk about dinner. They decided to feed the kids hot dogs, tangerines, and celery sticks; and that Chris would pick up something more 'adult' for he and Susan at the Whole Foods on his way home.

With the exception of a call that came into the landline phone – and which was ignored without being answered – I did not note any other technology interactions until 7:45pm when Susan and Chris talked again on her iPhone while he was at the store buying their dinner. Although Susan certainly appreciated a call back at some point, her expectation was not one of immediate response from Chris. Her own actions of discarding the phone at the field for the entirety of the soccer practice reveal that she felt no obligation herself to be always at-the-ready for any communication from him, either.

I also have a photo from my fieldwork with the Miller family that captures Chris, standing still in the middle of a kid's soccer field looking down at his iPhone.[2] Meanwhile, several little kids were running around him, warming up for a game that has not yet started. Out of context, this photo would depict their family life in a way that appears in stark contrast to the depiction of the Wednesday-evening I spent with Susan.

When I asked Chris later about what he was using his phone for on the soccer field, he explained that an important sales deal at work was being negotiated over this particular weekend. While Chris did not send any emails over the course of that Saturday afternoon, he did periodically use his phone to read them, just to "keep an eye on things." However, far from constant attention to the device, I saw him look at his phone only three times over the course of several hours. Each time he looked at it – including the moment extended indefinitely by my capture of it on camera – only lasted a minute or so, in reality. I never heard it ring or noticed it buzzing and demanding his attention.

It is easy to highlight moments such as the one in which I observed Chris standing in the middle of the soccer field as evidence for a more pervasive situation of multi-tasking, distraction, and "constant connectivity." Indeed, I could have taken a similar photo of Susan texting Chris on the sidelines of her

[2] Although collected for use in data analysis, photos that capture individuals are not included in the dissertation because they render participants identifiable.

son's practice before she dropped the phone and moved on to something else. Yet, these moments, out of context, do not well-characterize the more typical experience of spending time with the Miller family.

The day of Chris's mid-soccer-field monitoring of the sales deal happened to fall on a Saturday – and weekends were times when the kids were allowed more technology use than during the week.[3] For much of the rest of the afternoon, it would be Chris's son who was in physical possession of Chris's iPhone. With the exception of a moment when Susan also borrowed it to look up the location of an ice cream shop (because her phone's battery was dead), Chris's son was using the phone to play games in the car, and while walking with his siblings outside the ice cream shop.

As we will see in more detail in the next chapter, Chris did spend a considerable amount of time working from home. However, this time was generally bracketed off in the evening and morning hours, rather than being interleaved throughout the day via his smartphone. Further, the times during which he was *not* using technology often appeared more circumstantial in nature, in contrast to forms of more intentional rejection or resistance to technology as has more commonly been studied.

In a closing interview with Chris, a few weeks later, I asked if he could look up how many emails he had sent and received in the previous day on his phone. He didn't have his phone then, either; in fact, it's battery was completely dead, and he couldn't answer the question even after locating the phone's whereabouts.

By the time I interviewed Chris in late 2014, I was somewhat prepared for encountering practices that would be best characterized as punctuated connectivity and intermittent technology use alongside a description of feeling a kind of 'constant' connection. However, when my fieldwork with another family, the Taylors, had begun a year prior, I had been much more perplexed by the situation I encountered in their home. As the first family that I studied after conducting fieldwork at SLH, I was expecting

[3] Concerns about how much screen time was "good" for kids prompted Chris and Susan to set limits on the kids' use of phones and other computing technologies. During the week, the kids were generally allowed only a half an hour or so of what the family called "electronics" – and this was generally metered out as a reward for good behavior, like finishing one's homework. Weekends, however, were more relaxed, and the kids were often playing games like Minecraft on their parents' phones while out and about, or Wii baseball while at the house.

to observe a more extreme case of total availability and pervasive workplace communication within the home environment. Employees at SLH stressed repeatedly the "24/7" nature of the hotel industry, and described an extreme level of total availability and constant connection outside the workplace (see Mazmanian and Erickson 2014).

Moreover, a co-researcher who had interviewed both Michael and his wife Emma as part of the research at SLH had prepared me for seeing extensive technology use and frequent in-the-moment negotiations of work tasks in the context of family life. Yet, when I arrived to conduct observations in their home, I saw almost no technology use at all. A close examination of my early encounters with Michael and Emma in late 2012 helps to further unpack the distinction between the subjective experience of computing from patterns of intentional or active ICT use.

## 4.2 He's in constant communication with his team

In the first interview conducted with Emma as part of the study of SLH, she had this to say about her husband, Michael's, work-provided Blackberry:

> I think that **he's in constant communication with his team**. So if they ever need something, he's there.

She went on to say that she thought that this "ability to be communicated with at any time" was beneficial, because "it makes him feel more comfortable." Her comments echoed those of Michael in an interview conducted a month earlier. He had identified the best thing about his Blackberry as feeling like he could know what was going on with his team, "whether it was my day off or whether it was 12 o'clock at night." As he elaborated:

> For me it's a sense of security of understanding that, **even though that I'm not on property, I'm still fully connected and understanding what's happening with the operation**.

In her interview, Emma reflected that, on the flip side, the worst things about Michael's BlackBerry were:

> the effects that it has, pulling him back to work, and away from his family… So **he doesn't shut off to rejuvenate to be ready for the next day.** I wonder if he didn't have that – and didn't have email at home – if he could shut off better, and be ready to go better for the next day.

Emma also worked in hospitality, and perhaps unsurprisingly, Michael described her smartphone use similarly:

> I also sometimes get on her about her on her phone because she's a general manager, and at the end of the day **everything that happens in her restaurant is her responsibility whether she's on or off**.

We might reasonably imagine from such comments, that this family's home life was characterized by an extreme kind of constant connectivity: that both parents were frequently interleaving work activities in their family routines, that "pings, rings, and updates" (Richtel 2012) were distracting the adults from focusing or carrying out a conversation at dinner. We might imagine Michael feeling torn about how much to use his phone in any given moment, that there might be a continual negotiation of use and non-use, and that there would be frequent smartphone-based intrusions from the workplace in the home. Several months later, when I began fieldwork in their house, I was surprised to see very little smartphone *use*, to hear few rings or buzzes, and to witness very little apparent tension between Michael and Emma about each other's use of computing technology in the moment.

On the first evening at their house, I spent four hours observing, from 5pm to 9pm. I did not see Michael use his phone at all until after dinner. While we were watching TV he got up to get milk for his son. At the time, his phone had been plugged in on the kitchen counter, and he checked it when he went in to get the milk. He then unplugged the phone, and brought it back with him to the living room. When he sat down on the sofa, he announced the score of a baseball game to everyone. He checked the baseball score a couple more times throughout the night – announcing updates to everyone – and, each time, he would just look at his phone briefly and then put it back in his pocket. I think he might have taken a quick look at his email, too, on some of these occasions, but he did not type any messages out, and each interaction lasted approximately thirty seconds. There was no apparent personal stress or interpersonal conflict about his use of the phone.

On the second evening, aside from a brief communication between Emma and the kids' nanny, I didn't observe anyone using a smartphone at all between the hours of 5:00 p.m. and 9:30 p.m.

On my third evening at their house, Emma came home late from work at around quarter to six. She had been out of the house for fourteen hours – since four o'clock that morning – and she was exhausted. She took her phone out of her pocket as she sat down on the patio where I was outside playing with the kids and their nanny. I wrote in my fieldnotes, "this is the first time I really see Emma having her phone out while I'm here." While looking at it, she muttered aloud, somewhat quietly and not clearly directed at anyone, "Mommy worked twelve hours and somehow she still didn't get it all–" [and trails off without saying 'done' as I assume might finish the sentence]. After just a couple of minutes, she put the phone away, and I only saw it in use one more time that evening – when she texted Michael asking him to pick up salad on the way home. Michael arrived home from work at a quarter to seven, and I wrote that he headed pretty quickly to the kitchen to plug in his phone on the counter – something that I was noticing was an apparent routine. He paused to read something while plugging it in, but he did not spend long using the device – "just a few seconds" I put in my field notes. I did not see him use his phone again the entire rest of the night. I left at nine o'clock.

Most of the rest of my visits to their house followed a similar pattern, and my field notes are full of commentary to myself like:

> I don't know what to be paying attention to. There is not a lot of negotiating technology going on. **There is very little smartphone use**.

I saw Emma take a photo of her kids on an iPhone exactly once over the course of all eighteen visits to their house. I never saw Michael use his phone to take a photo. Instead of seeing a lot of interaction layering with new mobile computing technologies, I generally passed the time with them in ways reminiscent of my own childhood in the 1980s. In the afternoons – generally spent with Emma and the kids – we watched Disney cartoons on the plain old-fashioned television. Sometimes we rode trikes and scooters in the cul-de-sac. We played hide and seek in the back yard. We colored with crayons. Sometimes Emma would participate, and sometimes she would be cleaning or cooking while the kids watched TV. Meanwhile, Emma and I talked about things like the traffic on the interstate, or how busy her day had been. Although he was sometimes home early enough to help prepare dinner, Michael more typically got home two to three hours after Emma, and we would eat soon thereafter.[4] Dinner was always held at the table, and accompanied by conversation. On one particularly rushed evening when we stopped by a fast food restaurant to pick up burgers on the way back from an amusement park, we still brought all the food back to the house and sat down around the table before beginning to eat it. Dinner conversations were sometimes – perhaps, frequently – interrupted by toddlers, but not once by a phone ringing or buzzing. Often the news was playing on the TV in the background – the kitchen and living room were open to one another – and it sometimes made its way into our conversation. We also talked about Michael and Emma's work: Michael's triumph in getting more senior management to accept his numbers for his department's upcoming budget, or Emma's plans for dealing with Black

[4] Both Michael and Emma worked in seven-day-a-week industries. They were also both managers who had some control over their own scheduling. So, they tried to coordinate their work schedules such that each parent had one full day off with the kids each week and then they had one day off all together as a family. They also staggered their schedule such that Emma typically went into the work very early in the morning, and aimed to get home around four o'clock in the afternoon; whereas Michael would get the kids awake and fed with breakfast in the morning, before heading into work a few hours later, and thus would typically arrive home between six and eight.

Friday events at the mall area where one of her restaurants was located. They talked about the kids: whichever parent had gotten home from work earlier or had had the day off would fill the other in on who had taken a nap and who had not, or what they ate for lunch, and so on. After dinner, sometimes we had ice cream, we usually watched TV, and I almost always watched someone fall asleep on the sofa at the end of a long day.

### 4.2.1 I don't keep it next to me

Although initially perplexing to me – the way that they had talked about "constant communication" but exhibited nothing of the sort – a more in depth analysis of both their interviews and the observational fieldwork together, suggest an explanation that might account for *feelings* of constancy even alongside *practices* of highly punctuated use.

In most interviews with Michael, he gave apparently contradictory depictions of his smartphone. It was something that was always there and allowed for continuous connection, and something that was also infrequently used. For example, in the same interview cited above, in which Michael had talked about being "fully connected," he also described his actual phone use in a more punctuated way:

> **Once I get home I set [my phone] right next to my keys in the dining room and I proceed to cook dinner, have a little family time**... At this time I have already put it on silent mode because now it's my time to turn off and be with my family because I literally have maybe half an hour with my daughter before she goes to bed because she's only a year [old]. But I have probably about two hours with my son; hour and a half. So this is my family time.

As he re-iterated again in a later interview :

> **I don't keep it next to me**. Actually in the last– I would say in the last year **when I get home I turn the ring tones off**.

[Interviewer: Oh, I think I saw it. It's up on the kitchen counter.]

> Mm hm. It's on my hat. I turn it off when I come home. I get dinner situated. And I would say **right before I sit down I check it one time. And then I'll check it again, you know, when I'm watching TV, maybe. And then right before I go to sleep**.

This description of a more punctuated interaction pattern indeed aligns with what I saw – checking it a few times in a four hour period, and rarely actually responding to anything on the device. These two descriptions seem to stand in some contradiction to one another – they are about constancy and use language like "always" and they are also about phones being "turned off" and checked only a few times throughout the night. This apparent discrepancy was present across other families in the research besides just Michael and Emma. Chris, too, had talked about his phone in terms of "constancy" and being "always plugged in" even as I observed him actively *using* his phone fairly infrequently. How can we make sense of this discrepancy? In concluding this section, rather than adjudicating between which description of the phone and its experience is more correct, I would like to explore how they might both be 'true.'

## 4.3 Potential and Possibility

In concluding this chapter, I explore the ways that computing was experienced as a latent potential for many of the participants in this study. I argue that we might make sense of terms like "always" as referring to the experience of computing as always *potentially* there, as referring to the mental burden that seemed to lie latent in the 'back' of one's mind, the sense that one *could* or possibly *should* be doing something else. For the working professional parents in this study, that 'something else' was often the work that, in multiple ways, was never-ending. Understanding the experience of computing necessitates understanding it as part of this scene of excessive work, even when not in active use. Computing

appeared as both a site of potential (new) work, and a continual reminder of existing work that was not yet (and might never be) finished.

Although used relatively infrequently, this latent potential of ICTs *was* felt in a more continuous manner. ICTs appeared as reminders of work yet to be completed, and as holding the possibility for other realms of social life to demand – or often, to less explicitly absorb – one's attention, taking it away from the family. Crucially, then, *feeling* constantly connected did not mean actually *being* continuously connected or involved in active technology use.

Rather than suggesting that participants were 'wrong' to report a feeling of constant connection alongside observed patterns of punctuated use, I would like to suggest instead that the subjective experiences of ubiquitous computing technologies exceeds any isolated moments of interaction, use, or intentional and explicit non-use. That is, we might make sense of this apparent discrepancy between reported experience and observed practice in two related ways.

First, the phone, and discourses of "constant connection," were useful symbols and referents for talking and thinking about the excesses of work that could not be contained within any pre-designated spatial or temporal boundaries (see also Barley, Meyerson, and Grodal 2011; Gregg 2013). ICTs were sites through which these excesses were felt and experienced. Although technology use was not, itself, continuously in use, what was continuous for Chris and Michael and many of the participants in this study was a workload that never seemed to reach completion. Thus, even if not actively *using* computing technologies in any given moment, work was often on these parents' minds while at home – and ICTs related both to the conduct and knowledge of that work. That is, regardless of any potential 'new task' that might arrive on the phone, ICTs served as a symbol and reminder of the excessive nature of work that could never be truly complete, but remained continually unfinished.

Second, the phone (and laptop) are tools which were directly implicated in bringing new work to one's attention. Thus, even though participants like Michael generally kept their phone's ringer turned off, the phone still served as the medium through which a potential new task might present itself. Even if this

happened, in reality, very rarely, every single time Michael looked at his phone – ever so briefly, perhaps with the intent of just checking a sports score – there was always the *possibility* that he would find a notification from someone at work that would demand some new action on his part – if not immediately, still, perhaps, before the start of the next workday. The device holds the possibility and potential for connection and work even in moments of non-use, and an embrace of its affordances was coupled with a feeling of shared responsibility for what happened at the workplace even during one's own time "off." This underscores the political importance of attending to the ways that computing shapes the landscape of possibilities for 'reasonable' personal practices as well as the expectations of others (see also Gregg 2013). For HCI, it suggests the importance of grappling with the ways that computing matters for lived experience well outside of active engagements with ICTs.

### 4.3.1 It's more in my mind

Despite the infrequency of moments of actual interaction with technology, the affective experience of the BlackBerry was, for Michael, tightly intertwined with a more general feeling that he could never disconnect *from his work*:

> **My mind's always on work**. There's far few times that I'm afforded the ability to just really disconnect from work and recharge.

Echoing Michael's sentiment that "my mind's always on work," another working father, Rob, explained that he made a conscious effort to leave his work laptop in the car (in his garage) whenever possible. He did this precisely because of the way its mere presence in the home changed his "mindset" and thus the way he interacted with his family, and his two kids, in particular:

> For me, it's more of– **if I bring the laptop in [the house], there's an extra stress level** of, "I've got to get to this." And my patience, in terms of getting the girls to bed. **It's like, "I've**

> **got to fire up the laptop.** I've got to fire up–" **It's more in my mind. When it's in the car, it's amazing what a different mindset I have.**

In this description, what is clear is the way that the intrusions of work do not just arrive through the "pings, rings, and updates" of mobile phones. Indeed, Rob kept all of these notifications turned off on his iPhone, which he used for both work and personal activities. Nonetheless, the presence of the laptop in the house affected Rob's subjective experience of evenings with his family. In this way, even when not in active use, ICTs more generally served as what Melissa Gregg has described as a "material and visceral reminder" of the work that has not yet (and might never) actually be 'finished' (Gregg 2013).

### 4.3.2 I'm always still checking it

When prompted in the closing interview for the initial 6-week ethnographic engagement, Michael described his phone use in terms of constancy:

> It's always with me... I think that it adds to my stress, and the fact that I can't always disconnect. ... I know it's important to disconnect and recharge your batteries. And more so with the kids. ... I think it's sad because **I'll always have my phone, and regardless of whether my family's around me, I'm always still checking it**.

This practice of "always still checking" the phone might be understood in relation to the latent threat in the smartphone to potentially bring work to Michael's attention. It is important to recognize that "always" checking it meant something like once an hour – a detail elided by many depictions of constant connectivity. Nonetheless, even though these moments of interaction were distributed infrequently throughout the nights and evenings, they still happened; and even though they usually resulted in nothing more than a few second long encounter, they did, occasionally, spiral out into something bigger. During my visits to Michael and Emma's house, there was one occasion in which he did have to deal

with something in the moment.[5] This situation that resulted in spontaneous working from home (and later that same evening, in a brief round of emails from an amusement park) began with an email that Michael received on his BlackBerry at around 4:30 in the afternoon on one of his days "off."

On this particular occasion, I arrived at the house a few minutes before five. The family was planing to go to a nearby amusement park for a special Halloween event. When I arrived, they were packing things for the park – a stroller for the kids, and so forth. Michael, in a rare occurrence, was actually sending emails with one hand on his BlackBerry while standing in the hallway near the front door, and holding his sleepy daughter with his other arm – who had been woken up from a very long four-hour nap.

After driving to the park, Michael again pulled out his BlackBerry while he was unpacking the stroller from the trunk. He said aloud, but directed at no one in particular, "Man, this client's gonna be the death of me!" As I soon found out, Michael had been having trouble over the past couple of weeks communicating with someone who was arriving at the hotel for an event later in the week. This person had not replied to any of Michael's emails – until late in the afternoon on the day of the visit to the amusement park. At this point, Michael was obliged to attend to them with some urgency. The client would be arriving in just a few days, and so there was limited time left to complete the necessary planning on the hotel side.

Nonetheless, even this last minute work situation was a relatively short punctuated event when looking at the whole of the night more generally. After sending a brief email in the parking lot, Michael put the phone away again, and I did not see it for the rest of the night. Thus, even this emergency, took up a total of maybe 15 minutes of active use spread over an hour. These two fairly brief instances of technology use – once in the front hallway at home, and then a few minutes in the amusement park parking lot – were some of the only work-related intrusions I witnessed in my 18 total visits to the Taylor house-

[5] There was also one evening in which Emma had to deal with an emergent work situation at ten o'clock at night regarding the scheduling for the next morning's shift. For the sake of brevity, I only recount one of these two events here, choosing to focus on the SLH-related case.

hold. However, they serve to demonstrate the way that – even if infrequent in actual occurrence – the smartphone always seems to hold a possibility of bringing a workplace "emergency" to one's attention.

Thus, the feeling for Emma that Michael was "in constant communication" with his team, might be made sense of in terms of potential and possibility. Although his actual usage patterns were quite punctuated, and relatively infrequent, it was always reasonably possible that a brief glance at the device could turn into the need to write an email from the parking lot of an amusement park. Thus, while "constant communication" was not about actual, constant communication, it was about a sense, for Michael, that he was, potentially, always available, *if* something came up.

This sense of feeling like one should be always accessible and knowledgable came up in many interviews with SLH employees. For example, Ken, a manager at a different hotel explained:

> As I said earlier, we're a 24/7 industry. As a person who is responsible for this asset, yes, I need to be involved. And that doesn't mean that I'm – need to be emailing people all day or all night when I'm away. **It just– I need to be– I need to know what's going on… Hence, I have my phone attached to my hip 24/7.**

Ken went on to describe how he even slept with his phone by his bedside – but with the ringer off, so it never actually woke him up or interrupted his sleep. Thus, in part, the phone seems to represent a potential for interruption – even if it rarely actually interrupts. Additionally, as we will see in a later chapter, Michael – like Chris and Tom – was actually doing a significant amount of work from home. It simply was not done while he was also interacting with his family. Rather than interleaving work tasks throughout afternoon and early evening family time, he carefully cordoned off this work into the late evening hours. The smartphone – and the laptop – thus also served as a symbolic reminder of this work that was more constantly awaiting completion. That is, even if there is nothing that must be dealt with in the immediate term, all of the working parents in this study had job responsibilities that far exceeded the bounds of any regular 9-to-5 (or even 8-to-6) schedule. The kind of work that exceeded these bounds, was sometimes related to the "24/7" aspect of the hotel industry – such as responding to a guest concern

late at night. However, more often, for these managers, the excesses of their jobs had to do with more temporally agnostic work tasks, like preparing a sales presentation or working on budgeting projections in a spreadsheet – things that, in theory, could have been completed 'at the office.'

Thus, unpacking the subjective experience of "constant connectivity" requires looking well beyond moments of technology "use" or "non-use." The phone, and the laptop, are also symbols of 'work' that itself has a never-ending, continuous, quality but is hard to reference due to its immateriality. Whether or not one is *doing* that work in any particular moment, one is always mindful that there is almost always more work to be done. Furthermore, then, this case suggests that the bracketing off of technology use by setting up certain hours of 'disconnection' or family time is not enough to ease the subjective experience of stress or anxiety that people experience in relation to theses devices (cf. Turkle 2011). These devices are symbolic of stresses related to broader excesses of daily life that do not revolve entirely around issues of immediate 'responsiveness' or accessibility .

The phone and the laptop become useful ways of talking about and referencing this feeling, as they are the material objects that cross the 'work-at-the-office' and 'life-outside-of-the-office' boundary along with the individual. They are sites where one might discover new work, but even if this discovery is an infrequent occurrence, these devices are also the requisite tools for doing the work that is already lingering even without the addition of new work through some intrusive evening email.

In the next chapter, I examine some of the ways that people attempted to manage this potential through the *arrangement* of computing.

# Chapter 5

# Arranging Computing

The fieldwork for this project first began on a Sunday afternoon, in the spring of 2011, in the kitchen of a suburban home in southern California. The kitchen belonged to the upper middle class Davis family. Frank was a self-employed lawyer. Julie described herself as a stay at home mom, although she did bookkeeping work for Frank's business and spent 30+ hours a week coordinating a science garden at her kids' school. Their two kids were in elementary school, and participated in a variety of extra curricular activities such as soccer, baseball, and Spanish lessons.

Over the course of my fieldwork with the Davis family, I learned that Frank and Julie were seasoned mobile technology users, having had smartphones since before they really existed as such. Both had been owners of StarTAC Organizers, clip on PDA attachments for one of the first Motorola flip phones, released in 1999. RIM would not integrate its BlackBerry email pager with a cell phone for three more years. Since the StarTACs, Julie and Frank have had a series of Palm devices, BlackBerries, and more recently iPhones. They also shared a Kindle and an iPad, although I never saw them out in the time I spend with them. Frank told me, however, that he liked using the iPad for browsing Wikipedia while watching TV, and Julie had been known to play the occasional solitaire game on it. Less mobile ICTs occupied various semi-permanent spaces in their home. An old PC was relegated to the laundry room.

A newer iMac occupied a prominent position on a built in desk at the edge of the kitchen as it opened into the dining and living area of their home. A laptop sat on a desk tucked away in a guest room/office space where Frank sometimes worked. I never saw it out in the home and he claimed to only remove it from the desk when he was traveling out of town. However, Frank carried his iPhone with him almost everywhere he went.

He was a criminal defense attorney at his own private practice. Most of his clients would find him through his website where visitors could fill out a form to send him an email. Existing or previous clients called or emailed directly. He could look up arraignment and hearing schedules on the Internet, and communicate with the local police department via email. Every Wednesday afternoon, he came home early around 2pm. On the Wednesday I spent at their house, he told me, patting his leg, where the phone was in his pocket, "that helps me do it" – helped him to spend time once a week with his son, which thereby helped him to feel like he was being a better father. He was intermittently busy all afternoon on the Wednesday when he came home early: responding to emails from his secretary, and checking court websites for updates pertinent to his current caseload. On the other days I hung out with the Davis family, Frank did not get home until 7pm or later, leaving only enough time to eat a quick dinner and start the bedtime routine – the two kids were supposed to be asleep by 8:30.

Julie had a M.Ed. and used to be a school teacher before she and Frank had kids. At the time of the research she described herself as a 'stay at home Mom.' Notwithstanding, she worked about 30 hours a week at an impressive science garden at her kids' school. By referring to this as a 'science garden,' I mean to emphasize the academic and professional nature of the project. Julie had a graduate degree in education and her volunteer work for the school garden included carefully designed lessons that integrated garden activities directly in the school's curriculum. She was also highly successful in applying for and receiving significant funding from outside grant agencies to fund development of the garden space and purchase items needed for integration in science lessons. That is, it was not just a recreational activity; and, although she was not compensated monetarily for her work, she was doing some significant work, not only designing lessons and applying for grants, but also coordinating around 30 other

parent volunteers, who would do things like come in to assist once a week with a one hour lesson. She also did the books for Frank's business on the side. Julie used both her iPhone and the kitchen iMac extensively for garden-related emails as well as coordinating the complicated schedules of her kids' various after-school activities and social events (birthday parties, etc.). The laundry room PC provided her with access to QuickBooks for Frank's business.

The kids, ages 7 and 10, did not have any personal technologies of their own, and Frank and Julie strictly limited their computer and TV usage. However, everyone (via sharing the parents' two iPhones) participated in ongoing Words With Friends games against each other.

## 5.1 I don't have the self control

Standing in their kitchen on that first Sunday afternoon – amidst the usual[1] family activities of washing dishes, doing homework, getting ready for an afternoon baseball practice, making and eating snacks, and going in and out of the sliding glass doors to enjoy the backyard – Frank and Julie talked to me about their iPhones. They had volunteered to be the first participants in the research project, through a social connection to one of the researchers, and inspired by their own personal interest in thinking about how technology was impacting daily life. Inspired by news stories and conversations among their affluent social networks, they both had a lot of concerns, anxieties, and questions about computing technologies, and smartphones in particular.

[1] I use words like usual, ordinary, typical, or everyday frequently in this dissertation. They are meant to be markers relative to the particular fieldwork participant being referenced. That is, in this sentence, by 'usual,' I mean that the kind of activities in which Julie, Frank, and their kids were engaging this afternoon were typical for them. You would probably find them doing these same things, or similar, if you stopped by their house on any random Sunday afternoon. Importantly, I do not mean to imply that these particular activities were typical across all of the participants in my fieldwork, nor typical for any imaginary ur-family. I always mean these terms as a relative and local marker, never a generalizing gloss. Marking activities as somehow normal, everyday, ordinary, or usual is particularly important for attending to the ways that ubiquitous computing and practices of use and non-use are normal and ordinary versus extraordinary and remarkable.

Julie worried about the way her iPhone usage affected her relationship with her two kids. When spending time with them, she felt like "I really need to leave [my iPhone]. Because I can't have it with me. I don't have the self-control to not look at it…But I'm compromising my focused time with them [when I do look]."

When she would give in to the potential and temptation of the phone by looking at it – it made her feel like other things were "invading"[2] into her time with her kids. She worried about how the phone might be changing her body and her mental health. More than once, she relayed to me a story she recalled having read in the *New York Times* about how every time one's smartphone buzzes, alerting its owner of a new email, the owner gets a "hit" of dopamine, as Julie put it.[3] She thought she should be getting her dopamine from somewhere else–"like exercise," she told me.

Similarly, Frank disliked that his iPhone kept him "so connected to business". He thought that one of the biggest problems with technology was that it "utterly destroys boundaries." He talked about his phone as a "nanny" and, like Julie – and notably in a language of popular psychology and sociology – Frank worried that he was not truly "present" for his kids when he was multi-tasking on his iPhone.

Frank explained me that in a family, your attention is always so chopped up, anyway, the phone just adds to what are already excessive demands. Frank and Julie reported having conversations "more than once a week" about their phone use, the "constant level of stress" they feel, and the tension between demands to be "24/7, being reachable" and a simultaneous feeling of "not wanting to be reachable."

Although Julie was not technically employed, her descriptions of her phone echo the sentiments of Michael and Chris that we explored in the last chapter. The phone signified a strong potential for engagement in *other* activities – and a concomitant dis-engagement from her kids – when she had it

[2] A point of syntax clarification: all double quoted passages in the dissertation are direct quotes from participants. When drawing on field notes as opposed to interview data – as this chapter does in significant portions – much of my notes are paraphrased out of necessity – because I was not a perfect human tape recorder at the time of conducting the research. This leaves only a few isolated words as exact quotes. However, I try to retain as much of the participant's language as is possible, and Frank it as such, because I think it matters that "invading," here, is Julie's own word, and that "presence" and trying to be more "untethered" – later down the page – are Frank's words, not mine.

[3] Perhaps Richtel (2010) although there are many similar stories and I did not get an exact citation at the time

nearby – in her pocket or in the cupholder of her car. Although she refrained from actively using the phone while driving, she would sometimes pick it up while stopped at a traffic light, to quickly look at a newly arrived email, for example. Regardless, to even have it *nearby* signified a threat to her family life, regardless of whether or not it was in active use.

Likewise, Frank's experience of his phone was also tightly intertwined with where it was located – e.g., its mere presence in his pocket, allowed him to be 'at home' – more so than whether or not it was in active use at any given moment. The potential that a phone's presence embodied and signified both – and simultaneously – made it possible for Frank to be at home during work hours, and made it impossible for him to feel truly present while at home.

## 5.2 Can you even imagine?

Frank told me that he had recently been thinking about ways to become more "untethered," but then immediately asked, somewhat rhetorically, "How would I even rebel?" He continued talking and thinking aloud, remarking that to stop using technology would be "such a Luddite move." Looking over to Julie, also in the kitchen, Frank asked, "How could I do it?" Julie looked at him, but remained silent, as if she had no answer. Frank asked again, "Can you even imagine?"

Frank's rhetorical questions "How could I do it?... Can you even imagine?", implies a sense that his desired disconnection would be, in reality, impossible. Yet, during our Sunday afternoon conversation back in 2011, when Frank pondered the impossibility of untethering, it is notable that he was *not* actively using his iPhone at all during our conversation. At other times over the course of the week I spent with his family, I did witness him struggling with whether or not to use the device – debating aloud about whether or not to answer a call at the dinner table, or whether or not to look and see what email had arrived after noticing a buzzing on the sidelines of his son's little league game. Yet, while he was certainly distracted by this internal debate, he didn't always look at his phone at the end of it. These

moments of practical "non-use" went unrecognized by Frank and remain understudied by researchers. Frank's internal debate – which is itself stressful and distracting even when he chose to ignore the device – likewise does not quite fit into a category of active "use" either. The cases of Frank and Julie Davis draw our attention to the importance of the ways that technology was *arranged* within a scene of life as more important than distinctions drawn around active interaction or non-interaction with the technology.

Although Frank said it in a voice that sounded somewhat disappointed and frustrated – he *had*, at the time of our Sunday conversation, already been trying out some ways to "untether" more explicitly. However, to his apparent chagrin, they were all "very ad hoc." In later interviews, he and Julie both mentioned purposefully leaving their phones at home when going out to dinner at restaurants.

When Frank took a break from Sunday afternoon "sort of work-related" phone calls, on his way out the door, he stopped to report to me (the researcher) "now I'm going to strip off all my technology and go play with my kids." On the one hand, this underscores the way that they technology seemed problematic to Frank in its mere presence on his body. The potential represented by the smartphone, would somehow detract from his playing basketball with his kids – perhaps, like Julie, he did not feel like he had the "self control" to not look at it periodically. Moreover, re-locating the device as a whole was a way of relocating himself – in the moment with his kids – and relocating his work – to somewhere other than nearby.

Likewise, Julie made a point of plugging her iPhone into the iMac upon entering the house on most of the days that I was around. The physical distance between herself and her phone allowed her to feel like a better parent. Practically, this was an imperfect solution – the iMac's location made it accessible within just a few steps of almost everywhere Julie spent time in the house. She often attended to the computer without sitting down while in the midst of other activities – cooking dinner, talking to Frank, helping the kids with their homework. Her use of the iMac, then, appeared to me – an outside observer – as not dissimilar from Frank's use of his iPhone in the same kitchen-living-dining space. Yet, for Julie, the relocation of the phone, and the bodily separation of technology changed her experience of computing, of communication with others involved in the school garden, and of her kids in the kitchen.

For Frank and Julie, arrangements of computing were generally used in response to feelings of too much connectivity. By plugging the phone in somewhere specific, they were altering their environment such that they could feel free of obligations that were rooted elsewhere. Practices of arranging technology cut in two directions, however. As the next brief case draws to our attention, participants also sometimes located technology *closer* to them when they wanted to stay more in the loop with something happening at work. Moreover, while Julie and Frank's practices of arranging technology were particularly explicit – "I'm going to strip of all my technology and go play with my kids" – for others, patterns of arranging technology appeared more habitual and circumstantial.

## 5.3 I keep it far away from me when I'm at home

A couple of years later, I sat down to conduct a closing interview with Tom, an SLH employee, and parent of three middle-high school aged kids. Tom, like many others in this research, experienced his phone as keeping him connected to work while at home with his family. He explained that his team members often sent him emails and texts well into the evening – until seven or eight o'clock.

> **There is probably not a time where** I can't look at my work phone and **that stupid red light isn't going, just constantly**.

However, like Chris and Michael whom we met in the previous chapter, he did not keep this BlackBerry device nearby while he was at home. Noticing during the interview that it did not appear to be nearby, I asked in response, "So, where is it right now? You don't actually keep it on you?" he replied,

> No. I don't. **I keep it far away from me when I'm home. I keep it up, kind of by my bed in my bedroom.** So it's up there.

When I asked Tom why he kept it there – expecting an explanation about how he was intentionally trying to separate his work from him family life, like Frank and Julie Davis – he explained further, with somewhat different language:

> **I charge it up there. I don't know. … I am somewhat a creature of habit.** I am kind of a computer freak around here. So I will take– **When I get home I'll take all my stuff up there so I don't lose [it]. My keys will go up there. My wallet will go up there. My phones**[4] **will go up there. So that is where they kind of just go in the house.** And then you know when you are walking around – I usually don't do this; I'm usually not down here for an hour to cook or something – so **I will pop up there. I don't know, I'm not deliberately going up to check. You are just around and you kind of look over.**

Again, then, Tom's BlackBerry, and any work that might beckon from it, was generally separated from the time he spent with his family downstairs in the living room or kitchen. However, in contrast to Frank and Julie's explicit attempts to regulate their connection to work or outside-the-home demands through the explicit arrangement of computing, the consequent periods of non-use for Tom were the result of actions that appeared more habitual and almost circumstantial.

On the flip side, Tom also talked about checking on his phone, "not deliberately," but when he was "just around" and would "kind of look over." Tom – much like Chris at the soccer game – clearly felt *some* need to attend to the BlackBerry – and whatever might be on it – well outside of his 'regular' work hours. He did, occasionally, check on it. As he reported later in the interview, he would look at the device "maybe half a dozen times, whenever I just walk by it" during the evening hours.[5] Then, after ten o'clock – after all the kids were asleep – he would check on it again, maybe one last time before bed.

[4] Tom had a separate iPhone that he used partly for personal communication, although some colleagues also had this number, and perhaps mostly just because BlackBerry devices did not support applications like Instagram which he wanted to use with his family.

[5] Observations with Tom and his family noted him checking it even less frequently than this.

He emphasized that the ringer on the BlackBerry was never turned on, and he did not sleep anywhere near the device. His habits of keeping the phone upstairs – much like the circumstantial nature of Chris's phone often being in the possession of his kids – meant that he was not constantly *using* it. Importantly, his description of his BlackBerry and its relation to his feeling of connection to work, again underscores a distinction between the affective experience of "connectivity" and actual practices of use – this is the distinction that is elided by depictions of "constant connectivity" that attend to *use* and describe scenes in which people are all "talking to themselves" and continually interacting with computing instead of each other (cf. Turkle 2008, 2011). As Tom articulates later in the interview, despite his punctuated 'use' of the device and his less-than-constant patterns of actual communication, he still felt that some level of connection to his work colleagues was suffused throughout the evening, including periods of non-use:

> **I think we are always connected.** I just don't think there is a time when we are all not– It's just the world now…. you're just always, always, just constantly, just constantly…**Not in a stressful way, you are just always– [A colleague] emails me, or I'll go work on [a particular project] right now. It's just seamless. I'll grab my laptop and just start working on it. Watch the game and just look through it.**

On evenings when he knew something important might be coming in – or at a time when there was a big project or event happening at his hotel property – he would make a conscious effort to attend to the device more intentionally and purposefully. Instead of just looking casually when walking by, on these occasions when he was "waiting for something," he said he "might check on the update. And I might say [to my colleagues], 'Hey, let me know. I will be around.' "

Here, then, we can see again that Tom is *arranging* technology in his environment, in response to differing obligations and desires. On most days, he simply plugs it in upstairs, but if there is something specific about which he knows others might be contacting him, he will make a point to walk by the designated phone location more frequently. This activity does not necessarily result in more active use of the phone, but it does result in the phone – and his work – getting more attention from him in the

evening hours. His own experience of the technology shifts in these two cases, even if he might not actually end up using the phone more or less on either occasion.

## 5.4 Dis-integrations

In this chapter, I've suggested that one response to the potential that computing seems to embody is to *arrange* computing. Because the experience of computing exceeds actual moments of use – it is experienced as distracting merely by being in one's pocket and offering up a temptation to do *something else* – the location of computing in a scene of life is important for shaping one's experience.

In these scenes of everyday life the *arrangement* of computing stands out as central to its experience, whereas specific moments of use and non-use appear as dynamic aspects of many different situations. These arrangements were only sometimes explicit and intentional, while appearing at other times to be circumstantial, habitual, or implicit. These arrangements of computing served to alter participants' experience of a place – in the same way that one might put on some music, altering the mood or feel of an environment without explicitly pausing to reflect on or clearly articulate any reason beyond 'Maybe I should put some music on.'

Focusing on arrangements helps us to make sense of the ways that people are dealing with the potentials of technology and helps us get out of the binary trap of 'use' and 'non-use.' However, this chapter also emphasizes the ways that arrangements of computing were only a partial solution. They were insufficient to wholly eliminate the burdens of connectivity insofar as all of these participants still felt tied to their work – or other responsibilities – outside of the office. Although computing could be temporarily side-lined – plugged in upstairs, or left inside while going out to the driveway – it was never fully removed from the scene of life.

On the sidelines of one of his son's little league games, Frank told me that he struggled with the use of his iPhone at times like this, in particular. He wanted to be attentive to his son's game – and he wanted

to be “present” for his wife, daughter, and extended family who were with him on the sidelines. Yet, Frank also knew that the clients of his private law practice expect a high level of responsiveness during all hours of the day. As Julie explained to me on another occasion, “[H]e doesn’t need to pick up the telephone every time. But then, his argument, which I totally appreciate, is, ‘but if I don’t,’ then he doesn’t stay at the top of the heap.“ As the sole income-earner for his family, Frank had an increased burden of responsibility to do just that – or to at least stay near enough to the top that they could continue to afford their lifestyle – living in a three bedroom house with a swimming pool in a ‘good’ neighborhood with good schools, enjoying a nice bottle of wine with dinner every night, paying for the kids to go to summer camp, paying for the Mercedes station wagon and the BMW convertible. So, Frank generally answered the work-related emails and calls as they came in. While pacing behind the dugout, between comments about how the coach was not putting Frank’s son in the game as much as the coach was putting his own son in the game, Frank reflected on the research that I and my colleagues were engaged in. He remarked to me that for years people have been trying to figure out how to “integrate” mobile information and communications technologies (ICTs) into daily lives, but now, seemingly a bit too successful at that, people are trying to figure out how to “dis-integrate” them.

Frank’s language of integration and disintegration is a useful accompaniment to the notion of ‘arranging’ computing. Frank’s choice of “disintegration” foreshadows the story I will tell in the rest of this dissertation about the complexity and expanse of the social and material practices of which the smartphone is only one part. Far from simple physical objects; they are social forms–objects entangled with people, practices, values, ethics, fantasies, promises, and moral obligations. Turning off one’s smartphone in its entirety would be more of a radical move than it may sound at first. If Frank were to turn off his smartphone, his life as a sedimentation of sociomaterial practices would disintegrate or dissolve. Far from allowing him to be ‘more present’ on the sidelines of his son’s little league game, the more likely scenario is that without a smartphone at all, he wouldn’t be physically present at the late afternoon game at all.

Thus, individuals are left trying to negotiate a middle ground – arranging their devices such that they are not entirely absent from daily life, but such that their potential is somehow constrained or contained. That these arrangements are only partially successful underscores the way that obligations of 'responsiveness' are also only part of the story of how ICTs matter for the experience of daily life.

In the next chapter, I return to the story of Chris Miller as a way of investigating the excesses of work that undergirded the feelings of 'constant connection' that characterized experiences of technology-as-intrusive.

# Chapter 6

# ICTs and Excessive Work

In this chapter, I begin to explore more broadly the excesses to which descriptions of "constant connectivity" seemed to refer – if constant connectivity was not about immediacy, responsiveness, and interruptions from texts, emails, and phone calls. It is clear from the previous chapter that these apparently 'new' features of technology alone cannot explain the stresses that are attributed to ICTs. This chapter is about beginning to attend to where else those stresses were rooted – to what kind of excessive obligations did 'constant connection' seem to refer.

As Wajcman (2015) has argued, there has been a tendency to simplistically link new ICTs to a 'speedup' in society (see also Wajcman (2008)). In reality, she argues that technologies alone are not direct causes of a phenomenon described in terms of 'time pressure,' and that temporal shifts are unevenly distributed – with some people experiencing slow downs even as other experience speed ups. In focusing on specific, detailed empirical cases and developing ethnographic richness, this section attempts, in part, to re-texture lives that have been glossed as simply 'busy' or 'frenetic.' This chapter provides accounts that complement and extend Wajcman (2015)'s attention to time and speed by examining the ways that everyday lives were characterized by multiple excesses and unboundedness – which were not just temporal in nature.

As we saw in the previous chapter, one of the primary ways that study participants experienced their mobile ICTs related to the potential and threat of work that exceeded the time and space of the workday or office. In this chapter, I draw on a case study of Chris Miller in order to examine in detail some of the ways that his work was excessive, and examine how ICTs played a role in accomplishing that work and responding to its excesses.

In particular, I argue that ICTs provided a means to not just *do* work or achieve some specific task, but more broadly to shift the context of work, to regulate participants' emotional states, and to feel like they were doing *something* even if they never truly caught up with all the work that had to (read: could possibly) be done. Thus, what stood out as important about the affordances of ICTs within habits and patterns of working from home was not their communicative features or potentials for immediacy. Responsiveness and connectivity were not the defining features of the work that most distracted Chris – or Franco or Tom or Rob or the other participants in this research – from being present with their families. Mobile ICT-induced interruptions were not generally the impetus for work that was done from home. Instead, we will see in this chapter (and will further explore in the next) how *the mobility of work* facilitated by 'personal' ICTs impacted attempts to deal – individually – with more systemic challenges. Moreover, there was no obvious gap between desired or existing practice and technological capacity or affordance. Chris's use of ICTs to work from home was apparently working mostly very *well*. That he needed to work late and from home at all was the larger difficulty, and ICTs were implicated in this situation in a more indirect way.

## 6.1 We are all working too hard, and where is this work life balance?

During the time of this research, SLH was undergoing a rapid period of growth. When the initial fieldwork engagements with the organization began in early 2012, SLH managed around eight properties.

By the time my fieldwork concluded with Chris's family, in late 2013, the company was managing 25 properties, and the deals were already signed for the company to close on six more – bringing the total number of properties managed to 31 – by early 2014. At the corporate level, executives were rethinking company-wide human resources practices – from hiring to evaluations – in light of their rapidly growing employee base. They were also investing in new systems for revenue management and tracking, and they were learning how to balance their acquisition of new properties with continued success at existing properties. New "regional manager" levels were introduced in the organizational hierarchy to mediate between the corporate executives and the numerous properties that were managed across an ever-increasing geographic area. At the local hotel property level, high performing employees were asked to join task forces at newly acquired properties – sometimes spending weeks at a time away from their families – in order to get new employees at recently acquired properties up and running with SLH systems and best practices.

Chris described experiencing an almost "constant level of stress" during this period. Thinking back to previous jobs he held before working at SLH, Chris said:

> I would have sometimes months at a time where I really felt like I didn't have a whole lot to do. I mean there's a baseline, but it's like I could go off and take two hour lunches and leave early for golf if I ever needed to, and, you know, not that big a deal. I mean, throughout *big* stretches.

By contrast, he says, about his job at SLH: "I do not feel that ever with this job." Emphasizing to me the way that this impacted his personal life, he said that about "half the time" he was experiencing a high level of stress, living in what he called "borderline too much to handle mode." That he was in this state of high stress only about half the time, was described as a recent improvement. He estimated that two years prior – when the initial period of corporate growth was starting – he had been feeling these high stress levels for three quarters of the time.

Chris's stress manifested in visceral ways. He reported having migraines for several years, and, at the time of an interview in late 2013 – when his self-reported stress levels were on the decline – he described a migraine he had had just a few days prior, that had been so bad that, in the middle of a 6:00 a.m. conference call, he had to place the call on mute and was sick vomiting.

> **It was horrible. That's rare**. But that's probably once a year that would happen. But **I get migraines or headaches every month**. Not a weekly thing, but it's three or four times a month, or two or three times a month. Something like that. To different degrees. I mean, that one was crazy this week. But that's, that was kind of– Or **I hope it doesn't become more regular because that's not good**.

This particular interview occurred on the day after a weekend work retreat. Chris said that concerns about stress and overwork had come up several times at the retreat, indicating that he was far from alone in his feelings and experiences – and our own research with SLH indeed found that working life was stressful for many participants [See Mazmanian and Erickson (2014); and this dissertation section 7.1 and The emergencies never stop].

> We've talked a lot at our company about taking on less in terms of less projects, less–maybe growing a little slower… It's [the current rate of growth is] just not sustainable from a human being standpoint.

Before the recent retreat, the concern had also arisen in a company-wide employee survey. SLH prided itself on its culture, partly centered on holistic employee wellness ideals, and had found that they were doing fairly well on most measures. However, there were broad and generalized concerns about "work/life balance":

> We just got our employee opinion survey back for the year and you know **good marks, better than industry for sure, but we're slipping in a couple of areas**. And one of them that continues to come up in people's verbatims or individual comments is this, you know,

> **"Hey, you know, we preach and we talk about work/life balance, but it's just not really there with this company right now."** And **everyone is kind of stressed out,** even the [executives]… **we are all working too hard. And where is this work life balance**?

Corporate executives were beginning to feel that "we certainly need to be more strategic about our growth, and, you know, have people attend their kids little league games, and not live on airplanes."[1] At the same time, the executive group also recognized that "the more hotels you go, and the more you do, the more money you make." Thus, it was not clear what the company mandate actually was.

Chris's job – like many jobs at SLH – was inherently speculative. Working in the hotel industry requires continual speculation on future economic patterns, and the whims of potential clients, for everything from setting the room rate for a particular hotel booking request, to deciding how to brand a particular property – as a three star or four star property, as a national brand or a local boutique – to deciding what geographic markets to expand into or get out of, to deciding how many deals needed to be on the burner given an unpredictable closure rate. Chris felt significant pressure to perform in this uncertain environment – not only for himself, but also for his immediate colleagues, and the continued economic success of the company as a whole. All too often, this commitment to his job and his colleagues ultimately resulted in his doing extra work that did not necessarily need to be done:

> You would be surprised how many times I work on stuff– **I spend a lot of time on it, my heart and soul, and I send it to three or four people** and I think [inaudible] **it doesn't even get read. It doesn't get used.** I mean, you know, you spend a lot of time doing stuff that does not get absorbed or used. … I'm like, "How was that?" [And then I'm told] **"Oh, you know, we've gotta change gears. We didn't need it." Or, "I'll have to have a look at it." And, "I'll get to it." Or really it turns out it wasn't really needed** because of this. All the time stuff like that happens. All the time.

[1] It is noteworthy, perhaps, that the notion of "showing up" to a sports performance was understood as the baseline for what it meant to participate in family life at an acceptable level. The concern is not, for example, having time to take the kids to practice during the weekdays, to help with homework, to go grocery shopping, etc.

In part, Chris did not always know how much work he needed to do in order to be successful, and he – like others in this research – erred on the side of doing more than was strictly required. In addition to this, he also felt a significant a personal investment in his work and independent orientation to making sure it was all done and done well. For example, although he had recently hired a new employee to work on his team in order to alleviate some of his excess work, he talked about still having an individual mentality that he brought to his job, even though he knew he did not strictly "have to":

> I will tell you before this study started and really **before about a year ago when we hired her [the new employee], I would three to four days a week be [working] between 9 at night and midnight. And now it's just not the case. It's one day a week I might be doing something.** I used to be, I was on that computer at all hours a night. She's taken a lot of that load off. But there's a certain amount of work that has to be done in that area, and **before when I was just one person I was…I was theoretically taking on too much responsibility** … **That's changed. But there is kind of a little bit of a relic of that mindset** I think. So **I'll still do some of that, but to be effective at my job I don't have to.**

Chris's struggles with the excesses of work were not set up against a backdrop of simply having too many responsibilities, a set of clearly imposed obligations or expectations, or a straightforward quantitative excess of tasks. Rather, Chris struggled to do 'enough' in a context in which he lacked clear demands or mandates. That is, it was not so much the case that someone/some organization was demanding that he work excessively, but, rather, that there was no apparent bureaucracy to slow or check the limitlessness of Chris's uncertain aspirations.

Both Chris and Susan reported that his current work schedule was much better than his schedule two years prior. However, unless there had been some special arrangement, he generally would not arrive home in the evenings until seven o'clock at the earliest. Unlike some other participants in the research, he had a relatively short commute, so this meant that he was staying at the office until at least 6:30 p.m. and often until eight or nine. In the closing interview, I asked if this late work schedule was typical of

other employees, too. He reported that while a few people did stay to work late, most people were out of the office by 6:30: "after about 7pm… even 6:30pm, I can generally just work in peace." Thus, rather than conforming to a local corporate culture of late night working (cf. Ho 2009), here Chris's late nights at the office were about taking advantage of others' non-presence during these hours.

That is, in addition to the his uncertainty about how much work was necessary, there were some forms of work that Chris simply found difficult to do at the office during regular business hours, due to more diffuse characteristics of the office as a place and environment that made it not conducive to focused, uninterrupted, productivity in his experience. His need to "work in peace" appeared to drive some of his own working late, because, by contrast, the office was characterized by interruptions during the day:

> You know **we've got ping pong tables, other stuff**. People come in and some of it's just– I mean, **[sometimes it is] legitimate meetings[, but] some of it is just chatting with colleagues**, and, you know, putting out somebody's most recent fire. Some of it is just social, where **a few people just come in and socially just start chatting. You know, that can be tough. I am not probably the best at saying, "Like I'm really sort of busy. Let's catch up later."** You know, usually I'll give people the 15 minutes, you know, and sometimes longer. And you know there's **three or four of those a day, at least.** But then it will **start to interfere with your rhythm on getting stuff done**, so it's just yet another reason I think that I tend to spend my day with my door shut. And on a headset or on the phone and people can see to leave and not come in.

Chris's work had multiple parts. He had to both do communicative work of reaching out to partners and clients, and also more focused computer work to produce detailed reports leveraging current and past statistics to make speculative projections about the performance of a hotel property in the future. During the day – in the midst of interruptions from colleagues – Chris' time was also segmented by the communicative aspects of his job. Here, then, the computer makes a visible entrance into Chris's story.

"Computer work" – by virtue of being potentially mobile – was precisely the kind of work that Chris could put off during regular business hours:

> **I spend my work hours more on the phone or [in] meetings.** I don't usually– I mean, of course there's doing emails and I'm the computer on occasion. But **if I have a couple three hours of an Excel [spreadsheet] to work on, or even a document to read, I usually feel a little stressed if I am doing that between the hours of say 9 and 5**. I don't know, **it just seems like I have people looking for me to talk on the phone, or I gotta drive somewhere and meet people**, or I just kind of– Usually I allocate that time for non-sort of traditional computer work.

It was during the regular working hours of roughly nine to five that Chris reported feeling most strongly any expectation of responsiveness related to communication in any medium, including email. Although, in general, he thought he could manage his email better – by checking it only once every two or three hours, for example – he occasionally had clients that expected a more rapid response from him:

> I'm just working on one deal right now, there's one woman that's kind of like… She's been one of the banes of my existence, but she will email eight questions a day, and usually **if I don't email within an hour or two she might follow up, "Hey, did you get that?" That might be a slight exaggeration, but she follows up pretty quick.**

This communication work – by phone, email, and related to in person meetings – thus dominated and broke up his regular work day, making it difficult to fit in sustained "computer work." This computer work, he preferred to accomplish at home, in the evenings, because this was a place where he could focus on it, and, as we will see, because it allowed him to intersperse and recuperate time for leisure when he left the busyness of his office for the busyness of his home.

## 6.2 I don't have to check it...[It feels good]

Chris described his evening and late night work sessions, in part, as stress relievers and, in part, as times for continued social interaction with his colleagues, who were not only co-workers, but friends. Yet, he emphasized several times that this evening work was not strictly necessary. As he said in an interview: "I don't generally have to be on the computer as much as I am." For him, much of the work – especially emailing – that he did on the computer was not directly tied to the expectations of others, or even an internalized obligation to get something specific done. There were sometimes exceptions – "there are occasions, I have to stay late at work for something" – but in general, "people aren't urgently looking for me on the weekend or nights." For Chris, getting through emails in the late evening could more simply *feel good*.

> **I don't generally have to take a computer home and work on it** after seven o'clock. I don't have to I think. So **for me, it's stress relief** ... I spent an hour just clearing emails and stuff when you were here [observing one day], about forty-five minutes,. But it's just kind of stuff – **it could have waited until Monday. People were kind of looking to chat** and stuff, sending emails on a Friday **and I just figure, "Shoot, I'll just push them all out now so I [won't have them] on my mind."**

Going through emails, at night or on the weekends, thus, seemed to be one tactic for managing the more diffuse sense of anxiety that Chris felt in relation to his job – the "constant level of stress" he was under. Like others in this research (see, in particular, subsection 4.3.1, It's more in my mind), Chris's work was often on his mind, and the mental burden of knowing that there was almost always something pending, or perhaps a prediction model that he could improve, seemed to prevent him from simply relaxing with his family.

## 6.3 I can do it at home while I'm watching TV late at night

This evening computer time was also a form of relaxation in itself, however. Chris separated out "computer work" as the kind of work that he *saved* for doing outside the office.[2] Although he did sometimes answer emails at home, this "computer work" as a special case of work meant something else – the kind of report production, financial forecasting, speculation, and mathematical modeling aspects of his job. As he explained, working on spreadsheets in Excel was "not exactly brainless work" and "you gotta sort of focus on it":

> I can't do it when I'm driving or when I'm meeting with somebody, but **I can do it at home while I'm watching TV** late at night... **I tend to kind of save that kind of work for non-9-to-5 hours**.

Doing this 'computer work' at home thus offered two possibilities: to focus on a spreadsheet and get through the whole chunk of focused work all at once without losing his place in the task due to interruptions at the office, *and* the opportunity to suffuse the work with leisure – it could be done in front of the television. In describing his evening routine in more detail, Chris talked about how the first two hours of his evening computer time were often not work related at all, in fact.

> I bring the computer home. I usually get home about 7:00 p.m. And then usually I'm really on it from 7:00 p.m. to about 9:00, 9:15 p.m. Then occasionally– **Usually if I am on the computer from seven to nine, I'm going in on the Apple [the shared family iMac] and just doing like ESPN and stuff. That's not usually my computer [my work laptop] fired up. Then I fire my computer [the work laptop] up about nine, nine fifteen, nine thirty**. Sometimes. I mean, two to three nights a week, work nights a week. And I'll crank out a couple things I need to do. **That's the life. Seems reasonable, right?**

[2] Chris's family life – like many suburban American families – was also demanding of time and energy. Weekends were packed with soccer games to attend and referee, chess tournaments, and boy scout camping trips. Evenings were full of kids' activities, homework, and struggles to get everyone in bed at a reasonable hour. As Hochschild (1997) has argued, work and the office can often be places and activities that allow one to escape the pressures of family life.

Indeed, on the evenings and weekends that I observed at the Miller household, when I did see Chris using his computer – generally my visits ended just before nine thirty – more often than not he was checking on his Fantasy Football team rather than strictly "working." For example, on one late Wednesday night, Chris arrived home about ten minutes after eight. His oldest child, Corey, had been waiting for him to get home to finish some homework. They struggled through a spelling and grammar exercise for a while; sitting next to each other at a small table in the living room working on a word sort. After they got through with this first homework activity, it was time for switching over to a set of math homework. At this juncture, Chris said, "it's time for fantasy football!" He explained to me that his picks were due every Wednesday night, so now he had to actually set the lineup that I had seen him researching a few days prior.

He headed over to the sofa and got his laptop out. While working through the football lineup, he continued helping Corey with the math homework from the sofa. He read simple multiplication and division problems off a list – e.g., three times four – while Corey answered them aloud. Multiplication was a new topic at school, and so this proceeded somewhat slowly. Each time Chris would read a multiplication problem, Corey would carefully draw out groups of circles – e.g., three groups of four circles for three times four – and then count them up. This gave Chris plenty of time to check out his fantasy football standings and statistics before verifying his child's answer and reading the next math problem aloud.

In this case, in addition to facilitating the completion of work outside the office, computing technology also provided an opportunity for stress relief, and the recovery of leisure time within moments of doing work (watching television while preparing a report) and within moments of the more seemingly tedious aspects of a family life (reading off a list of multiplication problems).

This case also draws attention to some of the ways that computing figures indirectly in the expansion of work outside the office. Chris's working from home was not directly related to communicative tasks, a need to be 'responsive,' or any explicit coercion to keep up with a '24/7' world. Yet, he was spending a significant amount of time working from home, and ICTs were an integral part of making this possible. Beyond motivations rooted in a personal investment in his career and an uncertainty about how much

work needed to be done, mobile ICTs also seemed to offer up the possibility of making work more enjoyable. If he could get through a day at the office – which was full of interruptions and demands for social engagement – he could sit down and relax at home, with the work he had "saved" for the evening.

Concomitantly, computing technology was not only part of this scene of life insofar as it was a tool of communication or coercively linked individuals into patterns of increased responsiveness, or even just getting work *done*. Arrangements of computing – whether explicit (like Frank) or implicit (like Chris, Michael, and Tom) – were not enough to curb situations of excessive work (see also, chapter 5, Arranging Computing). Putting a computing device away might sideline the work for an hour or two, but people often had to come back to it at some point, not just because new work was being created through late night emails, but because the work more generally exceeded the bounds of the office or 'workday.' Most of the workers in this study simply had too much work to (ever) finish – or had no metric for knowing when they had done 'enough.'

Dealing with this situation of excess involved the use of computing technologies – and also a wide array of other technologies and techniques. Understanding computing thus necessitates understanding it as part of this scene of excessive work, and alongside a wider array – or, as part of a broader ecology – of technologies and techniques. I explore this further in the next chapter, and examine more closely the ways that technological capacities shaped individual possibilities for action and social values.

# Chapter 7

# Ensembles of Possibility

In this chapter, I return to a more in depth case study of Michael Taylor's relationship to work and the ways that computing technology was implicated in that relationship. Again, like the case of Chris Miller examined in the previous chapter, Michael's story emphasizes the way that communication and responsiveness were a very small part of the ways that his work exceeded the boundaries of the workday. Relatedly, no particular computing technology appeared as a clear or direct *cause* of the kinds of work he was doing from home. His job exceeded any boundaries of place (the office) or time (a nine-to-five workday) due to there being simply too much to finish within the confines of an 8 hour – or even 10 hour – workday. ICTs were implicated in his routines of working late at night because they happened to be the tools of his job: the things required for working on a presentation or preparing a spreadsheet. That it was possible to use these tools outside of the office made *possible* Michael's routine of working from home, but the excesses of work that led to this routine had diverse and diffuse roots, especially in Michael's desire to be a good worker, and his enjoyment of challenges and concomitant feelings of accomplishment. The ways that computing technologies shaped the landscape of possibility – what Michael or Emma was able to do, and felt was reasonable to try to do – shows that technological possibilities also often entail obligations. Moreover, these obligations were not just about *using* technology, but performing to a certain standard (for example, meeting a challenge that entailed seventy or

more hours of work in a week). As we will see in the second half of this chapter, ICTs were not the only artifact or technology implicated within Michael and Emma's abilities to succeed both at demanding jobs and at being the kinds of parents that they wanted to be.

## 7.1 The emergencies never stop

Although Michael was infrequently multi-tasking on his phone, and I rarely observed him working during the evening hours when he was spending time with his family, he did spend a significant amount of time working from home – and this generally after long days at the office. He was generally out of the house for 12-14 hours on workdays, and he was also frequently doing at least half an hour of work at home in the evenings – after his family went to bed. For example, here is a paraphrased overview of Michael's description in one interview of three previous days of his work week:

> Monday: Left home at 6am, got home around 7pm. (This included an approximately one hour commute each way.) Did not "really" do work that night: "maybe thirty minutes, just kind of cleaning up some emails" after his family went to bed.
>
> Tuesday: Left home at 6am. "Got home at almost 8pm…because it was just a crazy day. I was exhausted." Did not work at home.
>
> Wednesday: Left home at 6am again. Got home around 7pm. Worked for another hour that night after his family fell asleep.

His bouts of late night work might appear episodic in isolation – the result of an apparent exception – a big project, budget season, a new promotion. However, these exceptions strung together over time. My field notes from one visit to his house, several months after the above interview, again describe a day when Michael both worked long hours at the office and put in several hours on his laptop at home:

> Michael told me he woke up at 3:30am this morning because he could not sleep because he was so stressed out about what he needed to get done for work. So, he went downstairs and he pulled out his laptop and he started working at 3:30am. And he worked from then until he left the house (with a break to feed the kids breakfast), and then he went to his office, and he worked all day. He has been trying to have lunch with a friend for several weeks, and his job or her job keeps getting in the way. Those plans fell apart again today; he worked right through lunch, and still did not get home until almost 8 o'clock.[1]

Michael's descriptions of such days were sometimes accompanied by a sense of optimism that things would calm down in the near future – and, to be fair, they did calm down from the extreme of the 3:30 a.m. to 8:00 p.m. day. A more regular pattern, observed across my visits to his family, would be more along the lines of a 8:00 a.m. to 7:00 p.m. day accompanied by a thirty minutes to an hour of evening work. Nonetheless, he was also candid in interviews about the apparent constancy of the twelve or more hour workday which – at that level – was never really an exception to the norm. Asked by an interviewer, "Do you think that's going to die down, or do you think that's just going to be another emergency, and another emergency?" Michael responded:

> I think the emergencies never stop. Especially with this company.

This constancy of a state "emergency" is certainly evidenced by the series of fieldwork encounters over the two year period between March 2012 and March 2014.[2] In every interview, Michael recounted a story similar to the one above about working at night in the days just prior to the interview – whenever it happened to be. Related to this situation of work, Michael described feeling significant stress in his own

[1] During the course of my engagements with Michael and his family, he changed employers, taking a new higher-paying position right before my last interview with he and Emma. This quote is from this final interview, and serves to underscore the way that Michael's habits of work were not necessarily industry-specific (the new job was not in the hotel industry) nor company specific. All other quotes in this chapter, however, are from the time period during which he was working for SLH.

[2] Interviews with Michael conducted in: March 2012, November 2012, March 2013, October 2013, March 2014. Primary fieldwork engagements with the family were conducted between September-November 2012. His wife, Emma, was also interviewed on all the same dates except March 2012. The first interview with Emma was one month later, April 2012.

life, and said that Emma – who had a similarly intense job – also sometimes struggled with "juggling" everything:

> It's a lot to juggle, you know. And I know she [Emma] gets stressed out and there's breaking points. You know, and I know I do, too. You know, it's just… We've both taken on a lot, you know?

Unpacking what it means to have "taken on a lot" points towards a combination of multiple factors. On its own, Michael's job would simply have been demanding. He was a Director-level manager at a mid-upper tier hotel, and supervised a small team of employees. He felt responsible for these individuals' successes (and struggles) in addition to having a responsibility to hotel guests with whom he worked directly. He felt that this responsibility came along with his relatively high status in the company. As he explained:

> **My job is 24/7. I understand that as a Director.** The way I view my job – and I think it's different from generation to generation – is I'm a Director of this hotel. Second, I'm the Director of [my department]. So if there is an emergency [in any other department], as a Director of this hotel I have to respond and lend my assistance in any way… So I feel that that's something that I have to carry. And if somebody needs to [reach me], I have a team. **I have multiple people that are counting on me and sometimes they have questions. Even if it's my day off I have to respond to them to make sure that they can get back to the client.**

At the time, both Michael and Emma were working full time jobs with significant commutes that routinely took them out of the house for 10-14 hours a day. For Michael, a typical week was comprised of 55-60 hours working at the office, at least 10 hours commuting (sometimes more, depending on traffic), and another 5-10 hours working from home (typically at night, after his family went to bed). Emma's work schedule, though shifted a couple hours earlier in the day and including a slightly shorter commute, was not that different. She, too, worked 50-60 hours per week in the office, and did a more variable

1-10 hours of work from home on top of that – though typically on her off days rather than at nights. In addition to the straightforward time commitment, both Michael and Emma felt a deep personal commitment to and investment in the companies that they worked for, and the employees that worked under them.

Michael was often asked by his superiors at the corporate level – which oversaw multiple different hotel properties – to do even 'more.' For example, in the time that I knew Michael, he had on multiple occasions taken on the work of a former employee – adding to his own workload the responsibilities of someone who had quit their job, or been promoted elsewhere. When the company acquired new properties, they generally asked experienced employees to work on the initial "task force" to train the local staff on the SLH ways of doing things, and to participate in any new hiring that would have to happen for the new property. As Michael described in one interview:

> And then my boss comes to me and says, you know, **"Michael we need you to help us out [at another property]." And I am like, "Okay."** And you know **I am not the kind of person that's gonna say "No."** And maybe that's like my own fault.

Michael's statement here, that he is not the kind of person "that's gonna say no," is itself multi-faceted. When he first began working at his hotel, his position was supervised by two superiors at the property level. When one of these people was promoted to a regional position, Michael essentially took on the responsibilities of his former boss, without being officially promoted into this position. In describing his work week during the time of year when the company was preparing the operating budget for the next year, the resultant fatigue and emotional stress of the job are apparent:

> Like **this week was probably, out of the whole year was probably honestly the toughest that I've had**, because not only did [my previous boss, who had been promoted] take a backseat to all the numbers, and I had to do the whole budget, I also had three groups. And **I think that my bosses have forgot that they took one of my managers away**. So

> **when [another employee] left back in March**[3]**, it was like, "Michael's going to have to handle more groups." And I was like, "Well, that's fine, but you can't expect me to handle all the other groups, handle all your VIPs, handle all the corporate stuff, and then be involved with all the financials, and then do sites, and then be involved in all the contracting." And I'm like, "You know there comes a time and point that my plate's too full."** Well, you know, it was a conversation that we had and they were like, "Yeah, we understand, and this and this." **But at the end of the day– And, you know, my dad was my first boss, so like failure is not– is not an option, you know.**

This comment, again, emphasizes the excesses of Michael's work – the way his life is "too full" – and also the ways that mobile ICTs are only a small part of the story of these excesses. In part, Michael described himself numerous times in interviews as someone who had a strong "work ethic" and sometimes, perhaps a more compulsive relationship to his job:

> By nature **I'm a workaholic. That's just who I am.** I'll never change that about myself. I've accepted it. I have to manage it now that I have a family. And I'm okay with that.

Michael had worked hard to move up the corporate ladder into upper-level management from entry level positions in food service years earlier, and he was rightfully proud of his accomplishments. His valuing of a strong "work ethic" – or sometimes a "workaholism" – came together, with a more personal commitment to and investment in his colleagues and his job. As he said in one interview, "I think 80% of the time, I love my job;" and, moreover, "I really like my bosses." He had formed a close personal relationship with one of his bosses, in particular:

> **We are friends first. And second she is my boss.** But she never, she never treats me that way. We are very much peers. We collaborate every single day. And we probably go out to lunch three days a week, and we talk about how can we support each other to be

[3] This particular interview took place in November; even after 8 months, the position remained unfilled.

more successful. And you know she talks about her frustrations, whether it is personal or business. I mean, we talk about each others' families all the time.

In addition to close interpersonal investments, Michael very much enjoyed the pleasure that resulted from succeeding at the challenges offered to him – and additional challenges which he sometimes requested more directly. Describing a time when "we knew that January was going to kick our butt" and his team had been reduced to "only three of us," Michael described the feeling of pulling off a great quarter, that involved not only a high level of sales, but *also* a high level of client satisfaction:

> It was exciting because we were busy and we were seeing the numbers come in, and we were like, "Wow! This is just amazing stuff." **And I was proud. I was just like, "Wow! This is great!"** You know? … And we were getting a lot of accolades, and my bosses were like, "Oh my god, this is incredible, Michael." … We really cranked out. **And we had a lot of success, and there was a lot of things to celebrate, and my team, you know, performed at a very high level.** And the surveys that came back from our guests: **not only did we achieve the number one in sales, but our customer satisfaction was probably the highest we have ever seen**, which is– **Typically, you are running around with your head cut off, like, you are going to slip, like miss on something.**

Michael and his team, did not miss on anything, and Michael derived a real pleasure from these accomplishments. Being a 'workaholic' was not just a personality 'affliction' but also a source of pride and achievement. When he wasn't being asked by others to take on additional responsibility, he sometimes asked explicitly for more work. For example, in this same interview, he described asking for more responsibility immediately after this intense period:

> I told my boss this when I had my review. I said, **"I am not saying that I am bored. But I need to continue to grow. And I want more responsibility."** And I said, "It has nothing to do with me sitting here and telling you that I want more salary. So **I will continue to**

> **get paid what I get paid."** I said, **"I just want more responsibility, because I feel like I could do more for the company."** And of course they are like, "Oh my God!" You know?

In response to this request, Michael was given the responsibility of helping to plan the employee party for the entire hotel. This particular party was usually planned by corporate-level executives, and the planning had begun with a nine-person team. In some ways, being asked to participate on this corporate team, as a property-level manager was itself a sign of achievement. In the end, however, the group quickly dwindled down to just Michael:

> It was basically myself.... And that's– that's the unfortunate thing. **It's unfortunate that people kind of drop off and they don't do the things that they are supposed to do. So I just ended up sort of quarterbacking it**, and just saying, "You know, okay, this is what you have to do. This one task. Just get it done." **So I ended up organizing the whole thing. And you know– I was proudful of it because the employees, they came back and they said it was by far probably the best employee party we ever had.**

Not only did the employees enjoy the party, but the event also came in under budget. Soon after, Michael was asked, again, to throw another internal party – this time a first quarter celebration for the corporate management team:

> It's– It's a complete hassle to do it. Because you got your owners, right? **This is like you got the owners. I mean, this is like the [name of the owner's family] family coming**. ... And **of course this gets put on my plate**. Why it always ends up on my plate– I'm like, "Okay." And maybe I'm the one that's like the dumb one because I'm like, "Sure. I'll do it." ... And **I felt like, "Okay, this is another opportunity where I can kind of put my head out there and say, 'Okay, look it.' "** You know?

Thus, in addition to personal satisfaction felt from a sense of accomplishment – or any coercive strategies of Michael's employer to take advantage of his unwillingness to 'say no' – Michael also took on

these challenges as ways to show off and prove himself to his superiors in service of possible future promotions.[4] Despite the typical last minute hassles – some portions of the event being planned by others getting dropped on Michael just a week out – the event goes off without a hitch, and soars beyond anyone's expectations. As Michael describes his plan for the breakfast meal, with palpable excitement, still, several weeks after the event ended:

> Everything is like, you know, **"Here's your four diamond level, and we are going to go like five steps above it."** You know, so we are doing like– You can't just do like oatmeal. We are going to do like– we are going to do like an oatmeal with like brûlée.

The response from these corporate executives was commensurate with the extraordinary effort:

> **We got a lot of recognition from it.** And the corporate officers were saying that it was by far– they're like, **"This is like ridiculous what you guys are doing."** It was, you know. And I guess– I saw [a corporate executive] the next day, and he's the Vice President of Sales, you know, part owner of the company. He's like, "Michael, there is no way I can outdo what you guys did." He was like, **"You guys like continue to raise the bar, when we think we've seen it all."**

In a straightforward time-balancing way, accomplishing all these goals and challenging required that Michael both work late at the office and take work home. As a result of these excessive work demands – coupled with an unwillingness to sacrifice any *more* family time than was already eaten up by Michael's work schedule, he generally attended to any work that he had to do at home late in the evenings after his wife and kids went to bed. Far more than any occasional email-checking he was doing on his phone, this working late and working at night affected his family and personal life much more greatly. These excesses resulted in Michael getting much less sleep than he would generally have desired, as well as a less tangible constancy of fatigue and stress. As I observed on several occasions, both parents made a

[4] Ironically – perhaps precisely because Michael did so well at performing both his job and his boss's after his boss was promoted – no one was ever promoted up into the old position. Eventually Michael left SLH for a higher level and higher paying position at another organization.

conscientious effort, even after a 12 hour workday, to get the kids outside, ride trikes and scooters in the driveway or kick balls around. This can be a challenge though, and in multiple interviews, both Michael and Emma talked about feeling like their kids might be watching more TV than they would prefer. When asked what kept the family inside watching TV on a weekend when Michael had expressed a desire to – or feeling that he should – get the kids outside playing, he was articulate about this stress and fatigue, which was only partly about time pressure, also being about "emotional stress":

> **What stops me from getting out of the house? You know, I think it's work. It's the fatigue.** And you know, it's her job, and my job. **Is it physically stressful? At times it can be. But it's the emotional stress. It's the fatigue in the head, you know, the brain.** It's that. It's all that. I'd much rather just run a shift at a restaurant for 14 hours straight than do budgets for four weeks. It's just so draining. It's just so draining.

Thus, in attending to Michael's work stresses, we again find a more complicated situation than one revolving around the twin pressures of speed and new mobile ICTs.[5] The the very same activity that provided the greatest personal pleasure – taking on a new project, triumphing over what appeared as impossible challenges – was also that activity that resulted in feeling stressed, fatigued, that he had "taken on a lot." His description, quoted earlier, that he and Emma have both "taken on a lot" came in a conversation that started when he asked me, the researcher, how his family compared to others in the study. As he phrased it:

> Are we just the crazy ones, you know? Or, is it other people that are this crazy?

In further explaining what he meant by this, Michael described feeling like there were "breaking points" for him and for Emma – and it frequently felt like they were both at or near those points. Ultimately, we might say that Michael's feeling of "crazy" resulted from having *too much* to do at any given moment. However, it is most important here to recognize that this too much to do, this excess, was not in any

[5] Although I do not go into it here, in service of space, Emma's stresses mirrored Michael's in many ways. She also worked long days out of the house, and was responsible for operating three restaurants as a regional manager.

clear or direct way related to new ICTs. It was not about information overload, too many emails, or pervasive multi-tasking and distraction. More simply, Michael always seemed to have some additional project that he was working in addition to his official job – which alone already required more than a 'full time' forty-hour work week. The resultant quantity of work, in a straightforward way, often exceeded any attempt to confine it to a 'work day' time period or the site of the office.

Michael's young kids further added to both the demands and joys of everyday life. When arriving home from work at the end of an eleven or twelve hour day, both Michael and Emma were always met by two excited toddlers running to the door, jumping up for hugs – full of love as well as an impressive amount of energy. They wanted to play chase, to kick a ball around the back patio, to get out the paint, to play hide and seek, or to simply be given attention. Typically, Michael and Emma would oblige, at least for a short while, even as they might look at me and sigh that they only slept six hours the night before. Although they had a live-in nanny, which took out much of the stress of day time childcare, Michael and Emma were on duty anytime they were home, and I rarely saw the nanny, who would retreat to her room or leave for her own social activities in the late afternoons and evenings when the parents were home. So, every afternoon, Emma dealt with finding the kids snacks and figuring out just what kind of drink – water? or milk? – her not-yet-clearly-speaking, but very opinionated, 18 month old wanted.

At home – and in addition to the intensity of her own job – Emma took on the primary responsibilities for cleaning and maintaining the 4 bedroom house. Thus, unlike some other families in this study, they did not have a housekeeper or cleaning service to help with these duties. Michael helped with maintenance tasks, but Emma managed the home, did almost all of the cleaning, and she made dinner on most weeknights.

In attending to Michael and Emma's daily life more broadly than just focusing on their use of technology (or described reasons for not using their phones for certain periods), we can see that their lives were, unquestionably, exhausting. They weren't 'busy' in the running-around-all-the-time sense and they weren't frenetic, but they were juggling a lot in their own way. And, while this craziness was in

no way caused by patterns of constant connectivity and interaction layering, they did rely on a broader ecosystem of technologies in the conduct of their daily life.

Michael and Emma managed this situation of having "a lot to juggle" through staggering their work schedules, taking advantage of laptops to accomplish work late at night, hiring a full time nanny to care for the kids, and using the TV to entertain the kids when the house needed cleaning or they were simply too fatigued themselves to do anything else. Understanding the role of ICTs in their daily life requires placing them alongside these other technologies and practices of the everyday.

## 7.2 Assemblages of Achieving the Everyday

When I finished my initial six week fieldwork engagement with the Taylor family, I sat down to interview Emma semi-formally about her reflections on the study, opinions about technology, and thoughts on the juggling act of raising two kids in a dual income earner family. Near the end of the interview, I asked her to tell me more about her answers to a survey that indicated that she derived satisfaction somewhat equally from both her job and her family. In response, she first said that what was most satisfying in her life were "My kids, for sure. They are my heart." She continued, then, describing the satisfaction that she derived from her work, as well:

> **I'm just super happy**. Like I feel very very blessed for what I have. And to be given the opportunity at work that I was given [to be a regional manager]... **I work hard, and I show myself, and I prove myself, and my boss is very happy** with everything he's gotten in the last six months... But you know **that's work. Home, too, I have two kids; I have a boy and girl; I have a house; I have a yard; I have a husband; we're all healthy. You know, all that stuff**... There's not really more than I'm wanting. I'm just ready to move through life and experience things.

Elsewhere in the interview, reflecting on her future goals, she restates this feeling of finally having achieved a life that she was happy with, at the holistic level:

> I feel that **everything I've wanted for like the past ten years, like, I'm there now. Every job I've ever been in, I've always moved up, and I've always gotten to the next level, and I've been able to do that. I wanted to get married. I wanted to have kids.** Like, in my mind, I always said I would be done having kids by the time I'm thirty. I'm thirty and I don't plan on having more kids. So, I'm there. So, to be honest, I'm at the point where **I kind of need to sit down and figure out what is next. What are we doing? What is the goal? What are we working towards? Because right now I feel like I'm there**.

This is not to say that she and Michael's lives were always really easy or free of challenge. As we saw earlier in this chapter, in Michael's words, they had both "taken on a lot" and sometimes it felt like "a lot to juggle," even a little bit "crazy." As Emma said in the closing interview, time was sometimes hard to find:

> **Something I want, I want a vacation. Like, I want to go away and spend time with my family, you know, and make memories that way.** Michael and I were just talking about that. We need to figure out when to do it, because we never plan it, and it gets too close, and then we're like "Oooh, we don't have time. Oh, this is going on or that is going on."

Finding down time in their life was a challenge. Achieving the feeling of success and happiness that Emma describes came as a result of hard work and up front tradeoffs. When Michael had asked me whether his family was alone – in comparison to other families in the study – in feeling like they had a lot going on, or that they were near a breaking point, I responded:

> For everyone, it's a little bit different how it plays out, right? So, you were talking about– you both said stuff, "We probably watch TV more than we should." And, like, some other family will be like, "We probably give the kids the iPad more than we should." … Everyone

> has slightly different strategies for… how they try to fit everything in, because everyone is doing more things than sort of fit, right? so, some people talk about, "I'm not sleeping," or "I'm not doing any exercise," or "I'm not like– I've lost my personal hobbies," whatever they were.

As I listed off some various examples from across the fieldwork, Emma, who was upstairs folding laundry, just above the front room where Michael and I were talking, called down interjecting:

> Check. Check. Check.

Michael says, at almost the same time,

> All of them, all of them for us.

As he further explains, these sacrifices were part of what it took to be the kind of father he wanted to be while also accomplishing his work,

> I mean, I'd rather– **On a consistent level, I'd rather spend time with the kids than go play golf for four hours.** Now, **does a round of golf on this Sunday *sound* really good to me? Absolutely!** You know? **But on a consistent level, definitely. You make those choices**.

Making those choices was one tactic for managing the excesses of everyday life. in particular, for Michael and Emma, the sacrifice of personal leisure time was high on the list of tactics for achieving family and work goals which dominated their ideals for themselves. While Michael had given up hobbies like cycling, Emma continued to struggle to justify taking any personal time on the weekend because that was the only time they had together as a whole family.

Such prioritization came together as part of a broader ensemble of techniques and technologies in making possible Michael and Emma's accomplishment of the everyday. In this section, I explore some of the other constituent techniques and technologies of this ensemble. In these examinations, I want to draw

attention to two key points. First, that ICTs are not alone in this situation of the management of everyday life, although they are often singled out[6]. Second, the implications of these techniques and technologies are much broader than moments of 'use.'

Although not an exhaustive enumeration of technologies and techniques, in this chapter I address those which were most striking in their impacts on the Taylor family – either as noted by Michael and Emma, or directly implied in their explanations of what made their lives successful. I begin with ICTs, moving next to the television, and then give more succinct accounts of automobiles and pre-prepared food as a way of gesturing towards the diversity of technologies that matter together for the accomplishment of everyday life.

### 7.2.1 The laptop: whenever the kids would go to sleep or take a nap

As described previously, Michael highly valued his evenings with his family. Recall that he had a habit of putting his phone on silent and plugging it in on the kitchen counter (see subsection 4.2.1, I don't keep it next to me), in part, because he wanted to protect his family time:

> … because **I literally have maybe half an hour with my daughter before she goes to bed because she's only a year** [old]. But **I have probably about two hours with my son**; hour and a half. So, this is my family time.

Much like the trade offs he and Emma made between work/family and personal/leisure, protecting the sanctity of his family time also required a tradeoff. Ignoring work between the hours of six or seven and nine each night meant that he often shifted excess work to the late night hours, and sometimes to the early mornings, as well. During one interview, he explained how he managed the work of two jobs – he had recently been asked to duplicate his role for a newly acquired property that did not yet have a director of events, in addition to continuing to complete his job at his own property:

[6] see, e.g. Slaughter (2012)

> Yesterday, **I left for work at six a.m.; I got home at seven thirty p.m.** I had dinner. Kids had already eaten; Emma had already eaten. Watched a little TV. **We went upstairs at nine p.m. The kids fell asleep at nine thirty p.m. I came back downstairs, jumped on the computer, and worked until almost one thirty in the morning.**

Michael's attempts to pull off the impressive accomplishments described in the first half of this chapter forced this kind of balancing act between managing his "workaholic" nature and desire for constant challenge alongside his equally strong desire to be present with his family as much as he could in the evenings – between seven thirty and nine thirty in the quote above. Tools like the laptop were critical for allowing him to bracketed off work to the late evenings. As he described in another interview, in addition to working at night after his kids and wife were asleep, he would also do this kind of work during the day when he had a day off – but again only when his kids were napping:

> I mean I was working for sure seven days a week. I probably went on a twenty day stretch. You know, regardless of whether I drove into work, I was probably working six days a week. And then on the one day off, **whenever the kids would go to sleep or take a nap, I'd jump on the computer and I would work like three or four hours.** And then, because I know– **I know Emma doesn't like it, but when she falls asleep, then I'll jump on the computer and do more work.** You know?

Here, the laptop might be seen as 'enabling' more work, but, importantly it also scaffolds the achievement of a particular ideal of family life – most nights Michael would make it home in time for dinner, even if it meant he had to fire up the laptop again after nine thirty at night. Without the appropriate technology for being able to work from home late in the evenings, Michael would have had to balance his "workaholic" aspirations and desires to spend time with his family in a different sort of way – he would have to choose between working late at the office or spending time with his family. Thus, the impact of the laptop is in facilitating a new array of choices – it shifts the context within which Michael has to make decisions about how to enact his life, about what might be reasonable or possible to ac-

complish. It also shifts others' expectations of what is 'possible' to expect of him, and what might be a 'normal' level of responsibility. Given the capacities of the laptop, however, the new choice seems to be to do both: to work late at night and to spend time with his family in the evenings – at the sacrifice, instead, of the less valued sleep and personal leisure.

Michael's accomplishments were clearly made possible through the use of mobile ICTs which allowed him to extend the workplace beyond the time or space of the office. At the same time, the stress that woke him up early in the morning as he worked to succeed at being all of these things he had taken on – the good father, the good husband, the good colleague, the good employee – could sometimes only be ameliorated by logging on to his laptop, in the kitchen downstairs, while his family slept, to get started on his day at 3:30am. Thus, the relationship between mobile computing and Michael's sense that he could never "disconnect from work" was far more complicated than any contemporary fixation on mobile ICTs and their "pings, rings, and updates." For Michael, ubiquitous computing was not so clearly a direct *cause* of or trigger to do work outside the office, as much as a tool for managing the otherwise excessive work that he was not just expected to do, but relished in completing.

However, as we saw in the previous chapter, this level of working – and its concomitant lack of sleep – left Michael often feeling fatigued, not just physically, but also mentally and emotionally. Emma, likewise, was exhausted. On a majority of my visits to the Taylor household, I saw at least one of them nod off on the sofa, while watching TV in the evening. Managing this situation was also made possible through further scaffolding and other technologies and techniques.

### 7.2.2 The TV: Just part of life as it is right now

When asked what technology had the most impact on their family life, Michael answered, the Television. Although I saw he and Emma both put in valiant efforts to engage their kids in the evenings – even after a twelve or thirteen hour day – sometimes the enthusiasm of the toddlers to constantly run around and play was more than either parent could match for more than a half an hour or so. Watching TV became

a way to entertain the kids when Michael and Emma were too "fatigued" to go outside. Emma, similarly, described the TV as the most impactful technology in their family:

> I know especially with the kids **it's my go-to if I need to do something else**; putting something on that they can be absorbed into – also known as distracted – **so I can be making dinner or calming another one down**.

She felt some conflict about whether their use of the TV was "too much," but overall it seemed like it was working well as "a part of life as it is right now"

> Sometimes I think about how much they watch it and I'm like, "It's too much TV." Like, we need to do something else. But I don't know. I think it's just unfortunately **part of life as it is right now**. So yeah… **I think that works well**, too, just to be able – like I said – like **just to get stuff done, so my house downstairs at least doesn't look like my floor upstairs does**.

For Emma, the TV was a useful resource for entertaining the kids when she was unable to do that directly herself – because even though she likely already spent ten or more hours working at her office, she sill might need to clean up the house, or cook dinner. Both parents also enjoyed watching TV themselves. The news was frequently on in the background while I was at their house, and it colored and inflected conversation. Michael enjoyed following particular sports teams. As a family, they enjoyed watching shows like the Voice, and the TV provided an important leisure and relaxation outlet for parents who had all but given up their personal pursuits in favor of performing highly as parents, professionals, and homeowners. When their son, Scott, tired of watching his parents' favorite TV shows in the evenings – and they, likewise, had watched all the Mickey Mouse Clubhouse they could handle – they would sometimes hand him Emma's iPhone, allowing Scott to pull up a Disney Jr. cartoon and continue cuddling and spending time with his parents while they put on the news or a show they enjoyed.

Again, however, the TV (and the iPhone) were important not just for a specific use case – entertainment or spending time together as a family – but the way that that they reconfigured the broader possibilities of action and accomplishment that the everyday environment seemed to offer up. Numerous other technologies also populated the context of everyday life for the Taylor family, offering up a variety of opportunities, and simultaneously solidifying a set of obligations and expectations regarding accepted standards of performance as both workers and family members.

### 7.2.3 Prepared Foods: Just pasta and sauce from a jar

On my first evening with the Taylor household, I asked Emma if I could help out with dinner at all. It was a few minutes past six, and we had just come inside from playing with the kids for the past half hour or so on the back patio. Their nanny/aunt was continuing to play with them while Emma had headed into the kitchen and was beginning to get things together for dinner. However, she said that no, she did not need any help, "It's easy. Just pasta and sauce from a jar." In the end, she also cooked a little sausage in a skillet, which she added to the sauce and cooked some frozen some beans and carrots on the side, but, it was pretty much a one-person job. Michael came in the door about fifteen minutes later – while Emma was in the middle of cooking – and by about seven, we were all seated at the table with places set, ready to eat.

This all sounds pretty routine and mundane – and it was. I draw attention to it here, however, because the kinds of pre-prepared foods – frozen and pre-cut beans and carrots, pasta sauce from a jar, dried pasta just needing to be boiled – were another important technology implicated in the successful accomplishment of everyday life within the Taylor household.

On other days with the Taylors, we had meals that were similarly composed. For example, one night Michael grilled some beef outside, and sautéed some fresh peppers and onions, and we had fajitas with canned salsa, sour cream, pre-shredded cheese, pre-made tortillas, heated up canned beans, and a prepackaged Spanish rice side. Although we did have just a simple frozen pizza one night, and picked

up food from Carl's Jr. another night, on most evenings the Taylor meals required some level of preparation, but never more than about thirty minutes.

Although Michael very much enjoyed cooking, and perhaps would have liked to make more complicated meals at home, or cook more things 'from scratch,' time was at a premium in this household as we have already seen. The Spanish rice from a box takes only seven minutes to cook. The beans from a can take a few minutes to heat up. Cooking either of these from scratch including the time to prepare seasonings (chopping onions, tomatoes, garlic, etc) would take well over an hour. What I want to suggest here is that the availability of frozen foods and packaged foods at various levels of preparation (e.g. the pasta sauce in a jar) is implicated within the situation of everyday life in a way that we might understand in parallel to the laptop or the television.

For example, the day on which we ate fajitas was a Saturday, and was technically one of Michael's days off for the week. However, without allocating more than 45 minutes or so to cooking, the day was already quite full. He had spent time playing with the kids (the nanny got a day off when Michael or Emma had a day off), he had gone grocery shopping, and he had found a way to squeeze in two hours working on his laptop from home. Although it was technically his day off, he had received word that there would be a meeting on Monday morning with the owners of his hotel property. Usually on Monday morning, Michael prepared the paperwork and plans for the upcoming week. Certain forms had to be completed in order to disseminate information to other hotel departments and other members of his own team so that they would know how to prepare appropriately for Michael's clients. However, since a meeting had been scheduled over the weekend for this Monday morning time slot, he would have to do all that paperwork and planning in advance – that is, on his day off.

Just as the laptop changes the scene of possibility for when to work and how much work one might fit into a day while still being able to spend time with one's family, the availability of preprepared food was also part of the conditions of possibility for Michael and Emma's achievement of everyday life. It meant that making a flavorful, well-rounded meal – including a main course and vegetable sides – could be prepared in 30-45 minutes, after a twelve hour workday, or after a day off that was already

filled with grocery shopping, playing with kids, and two hours on a laptop. What stands out about the pre-prepared food is less the moment of minimal preparation or the moment of eating it, and more the way that the pre-prepared food items are a taken-for-granted aspect of the context of everyday life. Knowing that they are a regular reasonable normal way to eat means that one also knows that dinner should reasonably take thirty minutes to prepare. It is this knowledge that then frees up the evening or the day off for other activities. Rather than working in the kitchen cooking a sauce or preparing pasta from scratch, one can go grocery shopping, play with the kids, fit in a couple of hours of work. These different pieces of everyday life fit together, over time, coming to be normalized and typical, such that, as in the above sentence, grocery shopping itself is another thing that one might have to do. Pre-prepared food being itself a product of the industrialized market availability of raw ingredients – eggs, milled flour, tomatoes, etc.

Thinking of ICTs in this way, as interlinked pieces of an assemblage of everyday life, suggests a different relationship between 'busyness' and 'new computing technologies' than a direct causal link, which would single out computing by itself. In this picture, new ICTs are no more (or less) complicit in regimes of excess work than the mundane frozen pizza.

### 7.2.4 The Car: It's my only quiet time

Having a home, with a yard, was one of the things that made Emma feel like she had achieved all the goals she had previously imagined for herself. However, the cost of living in Southern California was significant at the time of the study. Although Michael and Emma's combined income was around $180,000 at the time of the study, living close to Michael's job in a city downtown would have precluded the opportunity to live in a 3 bedroom house with a yard. In the suburbs, fifty miles away, they could afford more than just a two bedroom apartment. They not only had a home with a yard – as Emma talked about in her interview – but it was at the end of a cul-de-sac in a small subdivision with little traffic. The kids could play outside, riding their bikes and scooters and tricycles without fear of speeding cars,

or strangers. They knew the family across the street, whose little boy came over spontaneously to play legos on one of my visits – no special play date scheduling needed, the neighborhood arrangement afforded the happenstance meeting.

Living this particular form of suburban dream required, then, the complementary technologies of the automobile and the vast southern California road infrastructure. Without these kinds of technologies Michael could not have reasonably lived so far away from his workplace and Emma could not have reasonably held a job requiring that she travel between three different restaurants – between ten and thirty miles from home. The car made it okay, and the freeways made it bearable. Furthermore, the car-speaker-system bluetooth-compatible mobile phone further offered to turn this driving time – as much as an hour for Emma[7], if there was any traffic, and even longer for Michael – into a time for catching up with family or continuing to be productive. As Emma explained to me,

> If I'm in the car and calling people, it's usually work, or my family that doesn't live here… So when I communicate with my family is when I'm driving and they always know. "Are you in traffic? Or are you driving home right now?"

Calling the office while on the commute home – to check in with one of the three restaurant locations that she had not visited in person that day, for example – meant that she could complete her job without having to stay even later at the office – or detour to a second or third restaurant for the day. In addition to checking in with work, she also called her Mom, Dad, and a friend from her home state each about once a week. She made these calls home almost always while driving, because these commute hours are the only time all day when she is not either trying to be a mom, or trying to carry out her job. As she explained:

> I call on my way home. I actually called [my friend] yesterday on my way home. So it's just– **it's my only quiet time that I can actually have a conversation and not be interrupted**.

[7] "Without traffic it's like 25 minutes… It's with traffic that it takes me– So if I leave there after 4p, it takes me an hour."

For Emma, then, the phone + automobile combination became important as a way to maintain broader family ties, as well as to reach a level of completion with her work that getting home in time to cook dinner would otherwise preclude.

## 7.3 Shaping landscapes of possibility

Although stories of constant connection and resultant work-life blurring tend to figure ICTs as the central and primary causes of these phenomenon – and not just the blurring of boundaries, but the more colonizing extension of work into the home – I have shown in this chapter that a broader assemblage of technologies old and new come together in facilitating the achievement of an everyday life, in which work exceeds the bounds of a 9-5 schedule, and yet the expectations for what kind of practices and routines characterize being a good parent also demand more than a full time commitment. Working parents struggling to meet both of these totalizing ideals rely on communication technologies alongside automobiles and frozen dinners to make it all happen.

As Wajcman (2015) has argued, many assessments of contemporary life and its stresses and excesses revolve around only certain kinds of technologies – specifically ones that appear *new* and *electronic* and *digital*. In her own studies of why people feel "pressed for time" Wajcman gives the baby bottle as one example of a key "time shifting" technology that has yet been ignored in accounts of the 'speedup' of contemporary life.

What stands out when thinking about the bottle (and why it is a 'time shifting device' for Wajcman (2015)) is the way that it fundamentally changes the *conditions* of motherhood and parenting. The bottle means that babies need not be physically co-present with their mother (or another lactating female) in order to be fed. What was once available only to the elite – the freedom of the mother to be elsewhere if she had a 'wet nurse' – is now available to anyone with the additional assistance of the breast pump. Moreover, the baby bottle and breast pump combination has in recent years transformed standards

of both motherhood and professionalism. Without sacrificing the recommended nutritional benefits of breast milk, the new mother today can pump from her office[8] and leave a nanny, sitter, or daycare provider with real milk to feed her child via bottle while she puts in a full day at the law firm, software company, university, or science lab. The workplace also thus remains uninterrupted by the presence of a newborn that might take to crying or otherwise distract her colleagues were it present to feed in person. The tradeoff between 'good mother' and 'good worker' seems no longer at stake. Instead, the terms of what it means to succeed at each are redefined.

By contrast, when studying ICTs we seem seduced not only by their 'high tech' appearance, but also by a narrow focus that, as noted by others fails to attend to the object thoroughly "in context."[9] What seems obvious in attending to the way the baby bottle matters for daily life, is that it is part of bigger sociotechnical ensembles. It does not *cause* the mother to go back to work while her baby is still nursing, but it changes the landscape of possibility for whether a mother might go back to work – and how she will feel about it.

It is not just the topic of inquiries – and the causal links that are intuited from the bounding of research sites and questions – that are limited by an over-attention to only certain kinds of technologies. The analytical framing of how technologies come to matter in daily life that is also hindered. When studying computing we generally focus on circumscribed moments of *use*, or broader patterns of use over time and over social groups. Our analyses, even when turned out towards broader social implications, tend to stay close to the specific features of these devices, often isolating them down to one or two key elements. We focus in on communication acts and norms of responsiveness, availability, and "24/7" communication, or, with dramatic contrast, on wholesale rejections of technologies like Facebook, twitter, or email. By contrast, when thinking through the impact of the baby bottle on American life, few would stop at the interface between bottle and caregiver or bottle and baby.

[8] or bathroom as the case may be

[9] See, e.g. Harrison, Sengers, and Tatar (2011), boyd and Crawford (2012) for calls to attend to *more* context

The evidence presented in this chapter suggests that we could usefully apply a similar perspective to theorizing the relationships between computing and social life. Putting computing "in its place" (Harrison, Sengers, and Tatar 2011) might also mean putting it alongside a wide variety of other technologies of everyday life – ones often assumed to be mundane and, as part of the background, neutral. Wajcman (2015) argues that technologies like the baby bottle, accepted as mundane, are understood, not as agents of change, but as part of "the furniture of life." In the next chapter, I will suggest that we might also understand ICTs as part of this "furniture" – but, also, that this furniture matters in impactful ways for the conduct and experience of social life.

# Chapter 8

# Computing as Context

Context is a familiar term for HCI, and historically something that critical and socially-oriented scholars have endeavored to include *more* of. There have also been calls to understand context as entangled with human practice and emergent in inter-(or intra-)actions rather than being a clearly defined set of information (Dourish 2004). Yet, recent critical scholarship of IT continues to lament impoverished understandings of context, and the way that taking data 'out of context' undermines their meaningfulness (e.g. boyd and Crawford 2012). In outlining the nascent areas of work within 'third paradigm' HCI, Harrison, Sengers, and Tatar (2011) similarly note the importance of "putting computing in its place" and better attending to a diversity of contexts in design work (Harrison, Sengers, and Tatar 2011).

These calls for computing researchers to 'contextualize' often lean on anthropological foundations, and, especially, on promoting a kind of Geertzian "thick" description (e.g. Dourish 2004; boyd and Crawford 2012; see also Seaver 2015). However, as Seaver (2015) points out, the anthropological point is less about describing things *more* fully or attending to *more* detail, but instead about recognizing the multiplicity of positions from which one might understand human action. Those different positions – be they the position of the software engineer attempting to integrate location and social network data into a recommender algorithm, the individual making sense of a conversation, or the researcher trying to

understand the experience of computing – all involve making sense of other actors and actions by also identifying and leveraging relevant context in that process. Thus, the work of the anthropologist is not unlike the everyday work of their interlocutors: is not to articulate a particular 'better' definition of context nor to articulate a fuller picture of context, but to do the analytic work of articulating practices and their contexts in ways useful for a particular understanding, theorization, or political project. Ultimately, then, the lesson from anthropology is less about how to collect more, better, thicker data so as to articulate a more nuanced context (see also Healy 2015), and is instead about how to thoughtfully create distinctions and decide when it is useful – analytically, pragmatically, politically, or otherwise – to make cuts in the process of tracing a network of actors which might otherwise proceed feverishly and without end (see Seaver 2015; Strathern 1996; Bennett 2009). In this chapter, I argue that we might usefully re-position computing – it its materiality, symbolism, and afforded practices – as part of the context within which culture is situated, enacted, practiced, and ultimately, (re-)produced.

In part, my motivation for this analytic move is empirical. The evidence presented thus far in the dissertation has underscored the insufficiency of 'use' and 'interaction' for understanding the experiences and impacts of computing in the lives of my informants. One way to make sense of the observation that opened this part of the dissertation – that punctuated connectivity was coupled with the reported experience of constant connection – is to reconfigure the way that we theorize the relationship between computing, practice, and lived experience. Traditionally, HCI research has focused on understanding isolated moments of human interaction with computing *in* some *other* context. My research suggests that ubiquitous computing, in particular, is itself the background for more general human interaction – and its use or non-use is negotiated more fluidly and less intentionally than when technology is located centrally and attention is focused on choices to adopt or refuse. That is, these ethnographic cases suggest that we might usefully understand ICTs as the *context* for everyday life – as part of that material space within which the (re-)production of culture and value happens.

This inversion of the typical relationship between computing and human practice is also theoretically useful for de-centering computing in debates about the busyness and overwhelm associated with new

computing tools in line with scholarship in STS and HCI (Wajcman 2015; Sengers 2011; Lindley 2015). It responds to calls for reformulating HCI around something other than 'interaction' and the moment of use. For example, as Bannon (2011) argues, HCI should redirect its attention from 'the interface' to "the exploration of new forms of living with and through technologies *that give primacy to human actors, their values, and their activities*" (Bannon 2011, 50, emphasis added; for similar calls, see Verbeek 2015; Taylor 2015).

Taking the perspective of *computing as context* for human action helps us attend to the ways that computing is part of what is taken into account in the assessment of possibility, and a component of how culture is defined and produced – without being the central locus of activity. This analytical repositioning of computing is also informed and influenced by the earlier work of Agre (2002) who argued for the understanding "cyberspace *as* American culture." Writing in at the turn of the last century, Agre argued that although the Internet had often been interpreted as a separate space – called "cyberspace" – that was delineated and marked off from the "real world," that this perspective no longer made sense. Rather, Agre argued that the Internet had already become "deeply bound up in the specific arrangements by which people conduct their lives" (173). If culture could be understood as happening "in the routine patterns of action and interaction by which people coordinate their activities and negotiate their lives together," then the Internet needed to be recognized as a part of that culture itself (171). According to Agre, the Internet was already – a decade ago – "mediat[ing] relationships among individuals and communities in increasingly intricate ways" (182).

Previous chapters explored in rich ethnographic detail some of the scenes of daily life for the Southern California families and workers who participated in this research. These chapters highlighted the insufficiencies of focusing on either 'use' or 'non-use' for understanding how technology was implicated within their everyday practices and lived experience. In this chapter, I argue that one way to better account for the relationship between computing and social life is to think of computing as part of the context for the practices, experiences, and relationships that make up that life. Thinking of computing as context, means placing it in the realm of the "features and characteristics surrounding a phe-

nomenon" (Dilley 2002, 438) – opening up the possibility of foregrounding phenomena and practices that are bounded in ways that do not align with the circumscription of the moment of 'interaction' or 'use.' Analytically relocating computing *as the context* for social life, rather than *as a tool used in the context* of that life carries numerous implications for the ways that we theorize the relationship between computing, lived experience, everyday practice, and social life. Drawing on three short case studies that each center on a particular computing technology, this chapter highlights three interrelated dimensions of the relationship between computing and social life that we can see differently when we re-locate computing as part of the context for social life.

## 8.1 Emma's FitBit: Mom, did you get to five yet?

In the spring of 2014, I returned to the Taylor Household for a followup visit after having not seen the family for nearly a year. I had known Emma and her family as research participants since 2012. In the year since we had last talked, many things had changed for us both. I was just getting settled back in school and life in Southern California after hiking the Pacific Crest Trail in 2013. When we last spent time together, Emma had working a more-than-full-time job as a regional vice president for a set of franchised cafés. She had been struggling, then, to find time in her busy schedule to go to the gym. She now found herself to be a stay at home mom due to a coincidental confluence of events which all occurred in the last two months of 2014: her husband Michael had taken a new, higher paying job; she had been laid off in a restructuring of the company that owned the restaurant franchises she worked for; and her sister, who had been the kids' full time nanny, had gotten married and moved away to live with her new husband.

Since becoming a stay at home mom, Emma was finally getting more sleep – which she knew because of a FitBit which she received for Christmas:

> Yeah. I actually started this Fit Bit in January. … So it tells me how much I sleep. I actually haven't been doing it very recently. But **my average is like eight and a half hours a night now, whereas before [when I was working] I was like five. Six was great. So, yeah, I am definitely getting more sleep. Which I can tell I have way more energy during the day**

In a previous interview, Michael had worried that Emma was not taking enough time for herself between her full time job and dedication to her kids:

> That's the part that I worry about that is there enough there where she can disconnect from being a mom, and being a vice president of operations, and – shit! – just go get her nails done!

At the beginning of this period of transition, Emma was, in her words, "putting a little bit of effort into myself for once" by starting to get back into running again:

> and **for awhile I was running like every single** day. And I had put on a little bit of weight like during the summer and the fall, I think from my stress level. So I actually lost some pounds at the beginning of the year. So I am back to where I was, my very comfortable weight where like I can eat regular and I can work out sometimes and like I am good. It doesn't really go anywhere. So that's been good, too. Which it has been really nice actually. **I was putting a little bit of effort into myself for once, so that was good**.

However, after the first few weeks of being a stay at home mom, she had not been able to keep up with her daily run or any regular trips to the gym. As she continued to explain:

> It was nice [when I was exercising regularly]. I kind of need to get back onto it. I was thinking about it this morning, actually, as I was laying in bed. The kids were sleeping in and I was like, "I should have got up this morning." And I was like, "Oh, I should have got up." But Michael left at 6:15am… And that's the thing. Like I could, **I could [get] up at 5am**

> **and go to the gym and come back, but really, do I want to get up at 5 o'clock in the morning? No, I don't**. Like I did that for so long. I don't want to do that anymore. So I slept. Yeah.

Even though her own job situation had changed dramatically, Michael was still working long days. Now that she did not also have to get in to work in the morning, he had given over the morning childcare duties to her. Thus, even now that she was no longer juggling the demands of being a regional vice president, her responsibilities of motherhood and homemaking were easily expanding to fill any vacated time.

Although Michael had joined a local car club, which he got together with on the weekends, Emma did not have any personal activities. Aside from reading novels (on an app on her iPhone), she talked about enjoying exercise, but she had been finding it hard to work in a run or a regular trip to the gym around Michael's extensive work schedule. Her toddler kids were not yet in school, and so she was with them nearly twenty four hours a day. As she put it, "I think my kids are my things right now. They take up all my time."

On the weekends, when Michael was home, she felt guilty leaving to go to the gym because it was the only family time they had. His new job was even more demanding than his previous job, and he rarely made it home in time for dinner anymore. During the week, she struggled to justify the cost of having someone else watch the kids while she went to the gym.

However, now that she had started wearing a FitBit, her perspective on her more mundane everyday activities had changed – a re-interpretation of her everyday routines as already full of exercise negated the need to figure out how to make a regular gym routine work.

The FitBit was a device that Emma thought "worked" in her life, in large part because it demanded little direct attention from her. Although it had a significant impact on the demands she made of Michael and obligations she felt to herself about making time for exercise, she did not have to actively 'use' it very much, and this was one of its key benefits.

> I had asked for it [for Christmas] … [and my brother and sister in law] bought it together. … at the end of January is my brother-in-law's birthday. We went and saw them and I had lost like five pounds at that point, and they are like, "It's working, huh?" And I was like, "Yeah." So she got one, and he got one, too. I'm like, "Can you convince my husband over here?"
>
> And he's like, "**I don't have time to log my food and all that." But it's not even about that**. … So it basically counts your steps.

By comparison, Emma had tried a different app on her phone, that required more attention from her to use

> Like there is an app I have on my phone. And they have some other ones that you can do like in addition to. And I started to do one of them, and I didn't like it. I felt like it was too complicated, like too much information. I'm like, "I just need simple. Like just to pay attention." That's all I need it to do. I just need it to be like, "Hey, stop putting food in your mouth. That would be a good idea."

She liked the FitBit better because it operated much more in the background, even as it reconfigured the way that she interpreted her everyday routines, and subtly shaped the kinds of activities that became part of that routine

> And it's funny because he [Scott, her son] will be like, "Mom, did you get to five yet?" Because five is 10,000 steps. [looks at FitBit] And see I'm at– I'm at– I'm there today. [She shows me five out of five lights on her fit bit]. … Because walked over to their [the kids'] gymnastics class today because Michael took my car because he's over his mileage on his car, and– So Michael took my car and I took them over in their wagon, and then we walked back and we played at the park for awhile.

By keeping track of all the movement that she does as part of her daily routines of caring for her kids, the FitBit re-shapes the way that she interprets her own life and her own needs. She no longer had to feel guilty about not going to the gym anymore, because she was usually getting in 10,000 steps a day. This technology, then, impacts her life well beyond the moment of use or interaction. It shapes how she feels about her exercise, health, and sleep, and influences the way that she interprets her own daily life. Ultimately, it indirectly influences the expectations she has of herself and her husband with regards to whether she needs to demand, and he needs to help her find, the time to go to the gym.

Taking a perspective of computing as context draws attention to these ways that **the experience of computing exceeds the moment of interaction or use**. The FitBit is barely 'used' – indeed, for Emma, the lack of direct attention that it requires is one of its key features – yet it has a significant impact on how she structures and makes meaning about her day, her life, what she feels entitled (or obligated) to ask for, how she feels about herself, and how her practices of caring for her kids might also be interpreted as caring for herself.

## 8.2 Tom's iPhone: It's a smartphone world

When interviewing Tom, he reflected on some of the broad changes smartphones made in everyday life, and how he felt like they impacted his family's experience of each other and their social lives. His wife and his two teenage daughters both used their phones frequently, especially the Instagram app, and he had mixed feelings about the impact of this on their time together. In particular, he expressed some concerns about whether this Instagramming took him and his family "out of the moment" sometimes. In trying to explain these feelings to me, he referenced a movie, *The Secret Life of Walter Mitty*, that had recently come out in theaters. In particular, he described a scene in which a photographer chooses not to photograph a rare animal:

> There is a scene– Sean Penn is a photographer and there is kind of this far fetched notion that Ben Stiller's character, who works for *Life Magazine*, and how his transition of going to the digital to where they are folding the print portion of *Life* and going to the digital side of things. And he has to find this photographer– He doesn't have to, but he choses to go find this photographer and he ends up with this guy in like the Himalayas or something like that. **He is trying to photograph a snow leopard, this rare snow leopard that has never been photographed**, something like that. **Ben Stiller finally finds the guy on the side of this mountain. He's getting ready. He's located it. He's telling him, "Shhh. Shhh. Shhh." And he doesn't take the picture. And he kind of gives this little spiel about, again, he likes to be caught in that moment and just wants to, you know, remember for this**.

With Instagram and texting, then, he sometimes felt like his family was missing out on just being "in the moment." However, at the same time, he also thought described his feelings about being in the moment as somewhat romantic, and not something that he pushed with his wife or the kids. As we will see momentarily, the patterns of texting and sharing photos were also a central part of how family members cared for each other, and experienced moments of togetherness when they had to be separated from each other.

> So **I think there is a lot of that that I kind of romanticize a little bit** instead of constantly just being– You know, it's constant. And [my wife] will do it. The kids do it constantly. But you know you will just get into a spot, even **when you are trying to have that moment and everyone is pulling out their phones, and you know, shooting it and texting people. "Here is where we are at. Here is what we are doing."**

However, when I asked if his concerns and feelings about technology as taking them out of the moment were something that they talked about together as a family, he responded that ultimately, he felt like it was "not a big deal." As we will see in a moment, he saw his kids' use of technology as an important way for them to participate in their own social circles, and, in appreciating that they each had different

desires and obligations than himself, respected their ability to make their own decisions about technology:

> No. I'm probably passive aggressive about it. I probably talk around them a little bit about it. **I think they know where I stand on it, but I'm pretty easygoing** so it's not– **I say all this but it's not a big deal. I think the world of my wife. I think the world of my kids. So I think their decisions are probably pretty sound.**

As he described his family's uses of their phones and laptops later throughout the interview, he described a more pragmatic approach to new technologies, seeing them as something that had definitely changed everyday life, but also as something that was inextricably part of that life. Much like the findings of Ito and Okabe (2005) that mobile ICTs created fundamentally new techno-social situations in teenage life in Japan, new possibilities for micro-coordination changed the way that their family planned and coordinated their activities, especially on busy soccer tournament days.

> You know, [my wife] and [one daughter] right now area at a soccer tournament up in [another city]. So you know you kind of communicate, "What is the score? How are they doing? Blahblahblah." And [my other daughter] had a tournament here so it's a lot of constant back and forth on that. You know, when you guys [to interview us] are on the way over, you know, we'll get a text from them, "We are stuck in traffic. We are going to be a little bit late."

At another point in this interview, I asked Tom to count up how many text messages he had sent on the previous day. Before telling me, he explained that, the messages were "pretty excessive" on that particular day, because it had been over a weekend with multiple soccer games. As he put it, "When it's a two tournament weekend, it's chaos."

When they have two different kids' sporting events happening at the same time, Tom and his wife Nancy split up, each taking one of the two kids to a game. Nancy's mom lives close by as well, and takes

turns between attending the different games. So, on these weekends, they use group SMS messaging for "keeping tabs on everyone."

Over the two-day weekend of tournaments, Tom counted 37 messages sent back and forth to the group of himself, his wife, and his mother in law. He reads some of them off, a mix of play by plays of the game – "0-0, halftime" and "It's 2-0. We win!" – and questions about the rest of the day – "Any more games?" and "What time is that [the next game]?" In addition to the weekend tournaments, the kids had also been away the previous week at a camp in the mountains:

> So Nancy kind of had to go on Friday to pick both of them up, bring them home, and then [one daughter] had the tournament here. And then Nancy actually came back on Friday, brought them back, and then took [the other daughter] up on Friday night to [the other tournament location]. So it's been kind of wild.

In coordinating these various travels, and sharing what was happening at different locations – like pictures from the camp – he and his wife exchanged another 46 text messages over the two days. He also sent another 18 messages directly to his daughter at the distant tournament, too – "Love you" and "Have fun tomorrow!" "Congrats!" Although often short, these messages provided a way for him to express his care and concern for her even though he could not be at both games at once due to the family needing to "divide and conquer" for the dual-tournament weekend.

For Tom, these ways of participating in and coordinating family life through mobile ICTs marked a stark transition to a time that he can still remember when these devices were not available. This change, however, is not just marked by nostalgia for the past – and a romanticization of what it would mean to just be "in the moment." For him, it is also marked by newfound freedoms:

> I'm a lot older than the rest of everyone here. And that stuff just didn't exist before and **now it is just so carefree** and even with my in-laws, or even with my mom yesterday. **My mom is 81 and she drove to [a soccer complex] to watch [one of my daughter's] play a**

> **game, and just her pulling into the parking lot to try to synch us up together she will call me and kind of, "Hey, where you at?" on the phone and we will kind of meet up**. But you know not so many years ago it wouldn't have existed. So I think our lives revolve around that pretty good.

Along with these kinds of coordination and flexibility among family members that occurs as a direct result of technology use, the technology also shapes the moments *before* interaction. In giving another example of the ways that they use technology, Tom talked about how knowing that they had a GPS and Internet-access device in the form of a smartphone meant that they could get in the car first, before even looking up where a soccer game might be located, or figuring out how to get there:

> So I feel like that is just a constant. Every time I go out I will probably– What was it? **I think last week we just ran out of the house not even knowing where we were going. We were going to a game or something. And you just pop in the address as you go, right?** And it's just– It's a lot different.

What appears constant, here, is not necessarily the use of technology, but its potential for use. Because it is always somewhere in the scene, it changes the landscape of what actions might be possible. As the capacities of technology come to change these landscapes of possibility, it also begins to shape the enactment, experience, and meaning of shared social values. Because his daughters and wife were both avid Instagram users, Tom created an account for himself, too.

> I do follow them [on Instagram] and I do "like" them because **one thing I learned with [my wife] as well is that they like to have likes. So my liking them helps them.** So you can see [my daughter] just posted three hours ago her team's victory, and I just liked it.

He did not post any pictures on his own account. However, he recognized Instagram as a important "part of their generation" with regards to his two teenage daughters.

> I know it's part of their generation and that **it is important to them** … I know that that whole connectivity is very important for them. And from what I see they use it in a very positive light, but again it is important to them. **There is something that builds them up. It is important to them to– I've seen them delete posts on Instagram when it didn't receive as many likes as they thought.**

The potentials of Instagram for posting, sharing, and liking/commenting on photos provides an opportunity for Tom to care for his kids – on their terms – and to care for his wife. By liking photos, he was showing that he was paying attention, and was helping to make them feel good, and to "build them up." Alongside this form of caring through attention and liking their photos, other parts of the work of parenting were also enacted through the use of tools like Instagram – monitoring his kids' social networks and talking to them about who was liking their photos, whether these people were friends of the girls, and what kinds of things he and his wife thought were appropriate to share in a public media form.

Although Tom did sometimes worry about whether his teenage daughters' use of Instagram was sometimes superficial or self-centered, and that they might be rooting too much of their self-esteem on their ability to post well-liked selfies, he also saw Instagram as a tool that could, at the same time, have a positive impact on their lives. For example, he talks about how one of his daughters, in particular, made "very random" posts that were often about things like, "we all have our imperfect perfections" and then would show a "picture of her being silly." Similarly, he felt positively about his wife's current participation in a "100 days of happy" Instagram activity:

> So every day she posts something that makes her happy. So let's see. [Yesterday] she put "[my daughter] asks to sit by me at dinner tonight." And we had two soccer ones tonight. #100HappyDays. I don't know what day she is on. So that is kind of cool.

The one hundred happy days "challenge" has its own website, 100happydays.com which reports that "the challenge has been taken by more than 1,500,000 people from 220 countries and territories around the world." As the website claims:

People successfully completing the challenge claimed to:

* Start noticing what makes them happy every day; * Be in a better mood every day; * Start receiving more compliments from other people; * Realize how lucky they are to have the life they have; * Become more optimistic; * Fall in love during the challenge.

Much like practices of gratitude and gratefulness [1], the idea behind the 100 happy days project is to leverage computing technology to help one more fully experience a moment, and, in the process, to shape one's own emotional state via this experience. That is, even as Tom felt like Instagram could sometimes distract his family, taking people out of the moment, it also provided ways for these same people to reconnect with the moments of their life in a new way.

Knowing that his daughters, especially, might delete photos if they did not earn enough likes in a quick amount of time, meant that Tom was careful to try to like their photos soon after they were posted. Thus, what might appear to be a kind of 'compulsive' checking of Instagram – a sign of Tom's own addiction to this individual app – might instead be interpreted as an act of care for those people who are important to him. We could surmise that his daughter's use of the application is similarly caught up in their own participation in social life.

In considering technology as part of the broader context of everyday life – rather than as a specific tool enrolled in a specific practice – it makes more sense that it might embody such ambiguities and dualities. As Tom said at one point in the interview, "**it just feels like a smart phone world**."

From this perspective, the particular use cases of technology scaffold more than just the direct practices that they are involved in. These reconfigurations of practice and what kinds of actions one *can* enact also imply reconfigurations of what kinds of things one *should* do. All of these cases direct us towards a picture that is much broader than habits of use or norms associated with the 'new' features of these ICTs – availability, accessibility, or responsiveness. Values are not singularly defined entities, but rather

[1] See, e.g. www.gratefulness.org, greatergood.berkeley.edu

complex cultural constructs that shift over time as new habits of interaction, and ways of demonstrating and enacting those values, become the norm.

This story further underscores the ways that the experience of computing exceeds the moment of use. Taking a perspective of computing as context also draws attention to the ways that computing, as part of the context of social life, **is part of the ground from which culture and values are re-produced**. As part of the context for human action and sense-making, the capacities of technology form part of the landscape within which people determine what kinds of practices are reasonable and right.

When we think about the way that Instagram, for example, relates to the enactment of social values, we can see that it is helping to re-shape the very meaning of those values, influencing what it means to care and connect, what it means to be a good worker, parent, or individual. That is, what is clear in this instance is that the practice of engaging through this particular technology is an important culturally shared and understood practice for caring for someone. The question is not whether or not Instagram "truly" embodies care, but, rather, how this new technology is shifting the very meaning of what it is to "care."

## 8.3 Jenna's BlackBerry: We should get all our employees on 24 hour access

I interviewed Jenna, an SLH employee, and director of sales at a Business Traveler Inn in a Southern California city in April of 2012. Jenna, like many other working professional parents in this study, used her work BlackBerry intermittently throughout her personal time outside the office. Walking me through her previous day, which she described as typical, she reported waking up at five a.m. and then heading downstairs to check her email, while having coffee, breakfast, and watching the news before her kids would get up at six thirty:

> So I walked downstairs. I find my BlackBerry. I figure out if there's 'anything interesting in there,' as my husband calls it. I get my coffee. I get in the shower. After I get out of the shower I make whatever breakfast turns out to be for me. Then I go watch the news. I watch it on mute because the kids are still sleeping. [Laughs] I watch channels that have a scroll because that's obviously better than lip reading. Then I get my kids up about 6:30.

She explained that this early morning routine was important to her job for a couple of reasons. First, she frequently worked with international clients and was also the sales representative for large government bookings. All of these people were often working during her night-time hours, meaning that usually she had a fair amount of email to process in the mornings. Second, reading her email in the early morning was a way for her to prepare for her own day. Also, because some of her local colleagues went in to the office earlier than she did, checking her email at before six in the morning was a way to show them respect and care for them. She wanted to pass off tasks to them as soon as possible so that they could plan and start their own days:

> And **it's kind of like the way I try to figure out how crazy the day is going to be.** Because generally I can guesstimate how much I'm going to need to get done in the first couple of hours when I get to work. So quite honestly, **in the morning I check it when I get up. If not I probably check it in the course of chasing kids around the house about every 15 minutes to see if there's new things**. We have, obviously, different departments [and they] work different time frames. So **some of my stuff I can forward to [a colleague] that's here at seven** and have her– **that way she's got it so she can figure out what she wants to do with it in the day**. Things like that.

Her day typically ended with occasional late night work on her laptop, and always checking her email on her BlackBerry, before she left it downstairs for the night – what her husband jokingly called "kissing it goodnight." When I asked in the interview if she could think of a story about when her BlackBerry was particularly "helpful," she responded with right away:

> I landed 1,200 room nights and eight different teams through [Acme Corporation] for six weeks during the beginning of this year because I replied to an email at ten o'clock at night.

As Jenna further explained, the initial sale was for a booking of 200 room-nights for a training event with the option to repeat it six times assuming the first went well. Although a 200-room-night sale was not entirely unusual for someone like Jenna, the final 1200-room-nights sold to Acme Corporation was significant for the local hotel's bottom line – especially since she had closed the deal during a particularly slow quarter.

A couple of weeks later, the story of her late-night dealing was lauded at the annual property review meeting where executives from corporate headquarters had come to evaluate the local hotel's operations. No other single deal was called out specifically at the meeting, but Jenna's property had been running behind the budget until she secured the Acme Corporation booking. The feeling around the room at the property review, seemed to be that had Jenna not answered that email at 10pm at night, the entire hotel would have continued to run behind budget for at least the first quarter, if not throughout the rest of the year. As the VP of sales summed up the conversation, "so we need to have our sales people on 24-hour access!"

His comment at the review certainly came across as a little bit tongue-in-cheek. However, some level of outside-the-workday access was already expected. As Jenna explained to me:

> It's within I would say **six in the morning until nine at night** you can expect that **there may be an email that someone would want attention to** within that time frame.

It was during one of her final checks of the night when she had landed the big sales deal that came up in her own interview, and again later at the meeting. Jenna's hotel was a franchised property, and the referral had come through the hotel brand's referral network. Both Jenna, and a sales representative at another nearby BusinessTravelerInn had thus received the late night email. As Jenna explained, being

able to meet the customer's price point was definitely key to closing the deal, but she attributed her ability to beat out her local competition to her late night responsiveness:

> Typically if you would match me against [the competing BusinessTravelerInn property] I would lose because [its location] is just a better draw for tourists and stuff like that than [the part of town where my property is]. … **I know for sure that a lot of the reason why [I landed the deal] was that we responded quickly**.

Her slippage to '*we* responded quickly' here belies the others behind the scenes who were also responsive at 10pm at night in order for her to actually confirm the details of the deal with the client. Even as a director of sales – in charge of the entire local property's sales team – Jenna does not actually have the authority to set prices without consulting at least some subset of the property-wide general manager, the regional director of revenue, or the regional director of sales. By contrast, Jenna's language for talking about her technology use was highly individualized.

> I am super embarrassed to admit this, but I literally wake up, walk downstairs and look at my BlackBerry. Because then I think **I need to sign up for some BlackBerry Al-anon class. It's literally the first thing I do before I even try to find where the coffee is [laughs].**

Jenna's own framing of her technology use – a story primarily about her and her BlackBerry, and the allusion, even accompanied by laughter, to her possible individual problem of 'addiction' – aligns with the rhetoric of individual users and a focus on specific tasks and moments of interaction. However, such a framing of Jenna's story elides the ways that computing 'use' is never truly individual. This case further underscores the way that culture and values are produced within a context that assumes computational capacities as part of the assessment of what actions are possible. Taking a perspective of computing as context also draws attention to the way that taking advantage of these possibilities by **using computing becomes obligatory for full and appropriate participation in social life**. Understanding this obligation requires looking well beyond the site of the individual, or the single tool. As

context, the relationship between computing and social life appears more like the relation between the automobile and social life (see also Wyatt 2003).

That is, none of the participants in this research questioned their own use of an automobile in southern California within a frame of individual interactions. Owning and using a car was obligated by sedimented histories and social expectations: the investment in freeway infrastructure over time, the planning that has prioritized the development of suburban centers of living and metropolitan centers of work, the divestment in public transit alongside a history of lobbying by rubber/tire companies, a history and politics of racism, 'white flight' and new urbanism, the creation of gated neighborhoods in cul-de-sac enclaves along with separated and scattered malls and shopping centers, the miles of asphalt parking lots one must cross to reach the Target from the closest bus stop, and so on.

Just as the imperative to use and drive a car is imposed upon the people of southern California, so too is the imperative to use and 'take advantage' of a smartphone in contemporary America. Moreover, just as the car is just one piece of an entrenched system of technologies (roads, subdivisions, the built environment) and one manifestation of circulating values (ownership, autonomy, flexibility), so too Jenna's BlackBerry is just one piece of an entrenched system of technologies (email, personal computers, the internet) and one manifestation of (quite similar) circulating values (autonomy, flexibility, responsiveness).

Technologies like smartphones have become taken for granted, as part of the context for social participation, in a way that cars and roads have long been acknowledged. Smartphones – and FitBits – do not simply offer up possibilities for action and engagement, but actually obligate individuals to enact those possibilities. The capacities of technology shape routine practices of work and family, and also shared cultural fantasies and ideals defining what it means to be a good worker, a good parent, a good family member, or a good person. Successful participation in all of these realms of everyday life requires the use of technology in culturally appropriate ways. In addition to the implications this carries for how to understand computing and the production of value – a point to which I will return in the conclusion – this perspective also provides a new vantage point from which to understand 'non-use'

and ‘disconnection.’ In particular, it suggests that ‘unplugging’ would result in a dramatic *context shift* for individuals. In the second part of this dissertation, I show how this perspective helps us to attend to aspects of disconnection that have been understudied in prior works.

# Part II

# Non-Use as Context Shift: Accounts and Experiences of Disconnection

# Chapter 9

# A Means to Other Ends: Popular Accounts of Disconnection

> I considered fleeing to a remote island for a few weeks, but I realized I wasn't craving physical escape. I didn't actually want to be alone. I just wanted to be mentally free of obligations, most of which asserted themselves in some digital form. (Thurston 2013)

This quote is from a *Fast Company* cover story written by Baratunde Thurston for the July/August 2013 issue. The article is titled, "#UNPLUG: Why Baratunde Thurston Left the Internet for 25 Days and You Should, Too." In many ways, the article fits a familiar genre of writing that might be called 'disconnection travelogues' – personal accounts of what it was like to push back, refuse, or resist some kind of new media or computational technology for a period of time (e.g., Conley 2012; Maushart 2011; Miller 2013; Roberts 2014). Thurston's story, like others, begins with a first-person account of the busyness, overwhelm, and stress that characterized his pre-disconnect life. In addition to noting that he had flown over 128,000 miles, and spent 179 days away from his home during the previous 365, he highlights these statistics about his technology use:

> Facebook posts: 1,518 (four a day). SMS threads: 3,702 (10 a day). Photos taken: 4,845 (13 a day). Tweets: 11,541 (32 a day). Gmail conversations: 59,409 (163 per day).

Following the common rhetorical structure, and deploying a similar language to other disconnection travelogues, Thurston's version of the experience begins with a diagnosis of his problems as an "addiction to constant connectivity" (see Portwood-Stacer 2012a, on the rhetoric of technology addiction). He then describes his planned remedy for this situation as a "digital detox" and "cleanse" (In addition to Portwood-Stacer 2012a; also see Portwood-Stacer 2012b, on the rhetoric of asceticism). In these disconnection travelogues, the period of non-use is always temporary (Thurston's was 25 days); the subjective experience of daily life is somehow better during the period of non-use (Thurston describes his as "the long bliss"); and the writer typically concludes with a set of suggestions and tips for how the reader can take up the headline imperative "and you should, too" (In this case, *FastCompany* includes a "nine-point digital detox checklist" in a sidebar).

As noted in the literature review (see chapter 2, especially section 2.3), the emergence of this popular discourse – along with the increasing notoriety of events like the National Day of Unplugging (e.g. see Considine 2010; Donahue 2015; Kelly 2014) and Digital Detox retreats like Camp Grounded (e.g. see Baek 2013; Colin 2013; Haber 2013; Madrigal 2013) – has drawn the attention of an emerging group of scholars in media studies, information science, HCI, and related fields who have been analyzing these discourses of disconnection and unplugging [e.g. Rauch (2011); Portwood-Stacer (2012a); Portwood-Stacer (2012b); Portwood-Stacer (2012c); Portwood-Stacer (2013); Harmon and Mazmanian (2013); Foot (2014); Morrison and Gomez (2014);]. Along with these discourse analyses, other authors have begun examining practices and occasions of non-use (e.g. Baumer et al. 2013; Kaun and Schwarzenegger 2014; Lee and Katz 2014; Schoenebeck 2014; Oostveen 2014; Also see Baumer, Burrell, et al. 2015, for a brief review).

The headlines, shared rhetorics, and "digital detox checklists" of stories in this genre – and accounts of short-term disconnect experiments such as in Lee and Katz (2014) – all figure technology as the lynchpin of the experience. In alignment with these headlines, academic treatments have focused on the *non-*

*use* of technology as the center of their analyses. For example, Morrison and Gomez (2014) surveys a breadth of academic and popular writings drawing up a taxonomy of both reasons for and practices of media pushback. Following the conclusion of technology writer Paul Miller (see Miller 2013), Morrison and Gomez (2014) concludes their paper with the following indictment of technology, and the need for users to "take control back" by managing individual technology use.

Attending almost exclusively to the technology non-use, these works neglect to engage with what else non-use effects – beyond the fact that people are simply not using technology, and with any of the other changes to participants' lives that come as a result of – or alongside – the period of technology non-use. For example, Lee and Katz (2014) describes undergraduate study participants as enjoying a weekend retreat characterized by the non-use of technology without in any way attending to the fact that the weekend was also school-sanctioned *vacation*. The participating students had been given a legitimate excuse to not engage in any work, and to also take a break from any social obligations they may have had on campus.

As the above quote from Thurston (2013) makes clear, however, technological non-use is always intimately connected with sociality. Thurston's own 'unplugging' was *not* strictly about concerns with an addiction to a technological 'object.' Rather, in choosing to 'unplug,' he wrote that he was actually seeking to be "*mentally free of obligations*, most of which asserted themselves in some digital form" [emphasis added]. That is, as Thurston himself points out, the center of his difficulties were in the expectations and obligations that happened to reach him via digital technologies – but not necessarily with the technologies themselves.

As a case study of computing as context, and what it means for HCI to take up this analytic position, in this second part of the dissertation, I examine how this perspective reconfigures the way that we understand what it means to *not* use computing. ICTs are never pure tools, free of economic, social, or other entanglements, motives, and relations. In this part of the dissertation, I show that disconnection, likewise, is not just about techno-purification, but rather about short-circuiting some of these more multiply entangled relations and flows.

Disconnection is usually understood as a direct response to technology and technologically-centric concepts like 'constant connection.' It is understood as defined and characterized by the *non-use* of computing tools and digital media. However, in this part of the dissertation, I will suggest that it is about something else entirely – all of the activities for which technology use is the context. Thus, rather than an act centered directly on computing technology, I show how the experience and act of disconnection is defined by a farther-reaching context shift.

The perspective of computing as context provokes us to pay attention to what other human practices, actions, and experiences are central rather than halting analysis at the point of technology use or non-use. In this part of the dissertation, I argue that our understanding of disconnection has been similarly limited by a failure to attend to what else changes alongside and as a result of changes in patterns of technology usage. That is, in noticing that people express pleasure in periods of disconnection (see e.g. Morrison and Gomez 2014; Roberts and Koliska 2014), we need to go farther in asking *why* that is, rather than presuming its just because individuals are not using technology.

I begin this part of the dissertation with a re-reading of two prominent stories within the disconnection travelogue genre, as a way of opening up what else we can learn from disconnection and unplugging if we take a perspective of technology-as-context.

## 9.1 #UNPLUG: A 25 day break

In the *Fast Company* article quoted above, Baratunde Thurston writes about his experience 'disconnecting' for 25 days. Although the "#UNPLUG" headline and "digital detox" rhetoric direct attention to the Internet and an addiction to "constant connection," even the inside images depict a more multi-faceted event. The article is illustrated with cartoons showing a working professional skipping out of an open office door into a boulder field of plants and birds beneath a beautiful blue sky. It is clear, before even beginning to read, that this article is about much more than just technology.

In describing the break near the beginning of the article, Thurston does emphasize that the non-use of technology would be one of the key rules of his 25-day experiment:

> [F]or 25 days I would avoid all social media, including the original online social network: email. I would not read, write, or be notified of any electronic missive. I would not generate any activity whatsoever on any social network whatsoever, including, but not limited to, seeing, reading, downloading, syncing, sending, submitting, posting, pinning, sharing, uploading, updating, commenting, tagging, rating, liking, loving, upvoting, starring, favoriting, bookmarking, plus-oneing, or re-anythinging. (Thurston 2013)

He also, however, described taking a full twenty five day vacation from all things work-related, and significantly curtailing his social life. The whole process began when Thurston hired a personal "chief of staff" to help him orchestrate his day to day life.

> I was aware that my daily routine and lifestyle were unsustainable. That summer, I hired my longtime friend Julia Lynton Boelte to be my "chief of staff." I gave her the grandiose title because "personal assistant" was not big enough to capture her role in helping manage my business relationships, travel, communications, and time. (Thurston 2013)

Thurston attributes the impetus for his 25-day unplugging event to this chief of staff's assessment of his emotional state – he was "grouchy, perhaps even nasty":

> Come November, after a short five months of employment, she politely informed me that I was becoming grouchy, perhaps even nasty, under the combined forces of my will, schedule, momentum, and addiction to constant connectivity. Indeed, I had begun to resent the emails and the mobile notifications, the many ways that an odd and wide assortment of people dared to enter my life. Something drastic was required. (Thurston 2013)

Thurston's frustration seems to stem from a combination of reasons. In addition to an over-full schedule, Thurston seemed to have an over-full social life, where email and "constant connectivity" were but a

pathway by which "an odd and wide assortment of people dared to enter my life." Taking a break, then, required, first, scheduling that break so that it would align with other cultural norms:

> Julia and I started looking for ways I could take a break. I was worried about slowing down, or even stopping. I felt responsible for too many things: my business, my political interests, my "brand," my bills! Christmas seemed the only possible escape. With the exception of Mr. Scrooge, everyone slows down during the holidays, and so would I. (Thurston 2013)

By timing his break around Christmas, Thurston's vacation would fit in well with broader cultural habits and patterns. As Thurston, himself emphasizes, then, the break was more about getting away from his obligations – business, political, personal – and technology non-use was a means to that end:

> I considered fleeing to a remote island for a few weeks, but **I realized I wasn't craving physical escape. I didn't actually want to be alone. I just wanted to be mentally free of obligations, most of which asserted themselves in some digital fashion.** (Thurston 2013)

Because his friends and business relations all communicated with him through digital technologies, taking a break from technology proved a lever for taking a break from the overwhelming nature of these relationships. This story, then, illustrates that – even for Thurston, who had been critiqued as a "disconnectionist," someone unreasonably focusing too much attention on technology use when the problems of contemporary life were more systemic (see Jurgenson 2013) – disconnection was understood as a means to an end, rather than an ends in and of itself.

Although disconnection is often framed as an individual accomplishment – and lists of tips for readers to carry out their own disconnection make it seem easy for anyone to take up on their own – reading the article closely quickly belies the social and economic networks that made Thurston's accomplishment of the 25 day vacation possible.

Firstly, preparation was key to his disconnection. People would need to know that when Thurston did not respond, he was not being "rude or unprofessional"

> First, Julia and I pulled together a list of VIPs who deserved personal preparation for my disappearance. These folks included my agents, lawyer, cofounders, landlord, show bookers, close friends, and sister. An email, a phone call, or face-to-face interaction was required in each case.
>
> Then I started making a series of loud announcements, both on email and via the many social services I inhabit, about my impending departure. I wanted to do this in as considerate a manner as possible, since both personal and business matters are conveyed through these platforms. **I've gotten client proposals via Twitter direct messages and wedding invitations via Facebook updates. To simply walk away with no warning felt rude and unprofessional.** (Thurston 2013)

Secondly, even for someone who can take a 25 day vacation, going totally offline seemed unreasonable. Thus, Thurston also paid his 'chief of staff' to keep an eye on his accounts:

> The FOMO (fear of missing out) in me is strong. What if Kerry Washington (the Scandal star, whom I have somehow never met) wrote me confessing her love and I missed it because of some extremist view on vacation emails? To ensure an inbox-free vacation, **my chief of staff would log in every few days to check that I didn't miss anything urgent** such as a family emergency, holiday party invite – or that message from Kerry. (Thurston 2013)

Ironically – or, depending on one's perspective, unsurprisingly – Thurston's "disconnection" was ultimately accomplished by the hiring of a personal assistant – precisely that job that the smartphone predecessor, the PDA, was supposed to 'replace' and obviate the need for.

The key takeaway here, being, that Thurston's disconnection was never just about technology, and much more about the expectations and obligations that he aimed to get a break from. Hiring a personal assis-

tant – who continued to work for him after the event – meant that he had a new filter on these obligations. Important things could still reach him, but the obligation to determine what was important was made by someone else. Further, the event of his 'disconnection' gave him an excuse to not respond to some things that he might have otherwise felt obliged. In attending to discourses and processes of disconnection, it is important to attend to these complexities of the event, in order to move beyond reports that a certain percentage of participants found it to be a "positive" experience and unpack the question of why and how such events bring those feelings into the experience.

## 9.2 Reboot: A Year Long Sabbatical

In his October 2014 article for Outside Magazine, "Reboot or Die Trying," political blogger and journalist David Roberts reflected on having spent a year 'unplugged' from the Internet (2014). In many ways he recounts a similar story as Thurston. His disconnection was for a longer period of time – a full year – but, like Thurston, he also coupled it with a sabbatical from his job. The cause for his significant sabbatical – notably much more radical than other popularized week, or month long 'detoxes' – was a self-reflexive dissatisfaction with his current life. In part this was related to technology, and what he calls "lifecasting":

> My mind was perpetually in the state that researcher and technology writer Linda Stone termed continuous partial attention. I was never completely where I was, never entirely doing what I was doing. I always had one eye on the virtual world. Every bit of conversation was a potential tweet, every sunset a potential Instagram. (Roberts 2014)

This technology-entangled distraction from the present moment was coupled with a broader dissatisfaction with his current lifestyle and the effects it was having on his body and mental health. As he summarized, he was "wrung out."

> What had begun as blogging had become "lifecasting," a manic, full-time performance of Internet David Roberts. With some lamentable exceptions, I was, and am, proud of Internet David Roberts. But he had flourished at the expense of the slump-shouldered, thick-bellied, bleary-eyed shut-in Huck [David's son] saw sitting on the computer every day. That guy was wrung out. (Roberts 2014)

Although Thurston points to the "obligations" which made his life stressful and frustrating, Roberts more thoroughly unpacks where these obligations and expectations were coming from. Roberts, an environmental blogger for Grist magazine, seems long used to systemic arguments about politics and sustainability, and he brings this same attention to his reflections on his own disconnection experience.

Describing why he enjoyed his period of "rebooting," Roberts attends to what exactly his sabbatical was *full* of if not technology was was absent. He went on long walks in the mountains, and throughout his home city of Seattle. He spent a full month in a ski cabin. He started taking yoga classes and began trying to learn to meditate.

Upon returning to the Internet – and his real life – at the end of his year long break, Roberts found himself quickly falling back into old habits and routines. In trying to make sense of why his "budding mindfulness was proving inadequate in the circumstance I most needed it," he wrote:

> One striking feature of the digital-self-help literature is that **it treats distraction, overload, and frazzlement almost entirely as personal challenges**. **If you're stressed out and unable to concentrate, you're not enlightened enough**. Meditate harder. (Roberts 2014)

As Roberts continues, the problem he found with disconnection as self-help was its individual focus:

> The problem with this approach is that **it sidesteps what sociologists call political economy, the larger social and economic forces at work in our lives**. As author, activist, and documentary filmmaker Astra Taylor argues in her rousing new book, *The People's Plat-*

> *form,* **discourse about online technologies almost always elides "the thorny issue of the larger social structures in which we and our technologies are embedded."** (Roberts 2014)

In the emerging area of non-use studies, an over-focus on the technological aspects of the situation, has distracted from attention to what else is happening when people unplug, detox, and disconnect. However, a broader set of themes are already present within even popular accounts of unplugging experiments. For Roberts and Thurston, pre-disconnection, the Internet was a way of life. As bloggers and personalities, they made their living – and their life – through their social media networks.

Their stories – when attended to more fully – were not just about a technology cleanse. Their unplugging and rebooting practices were about more than taking a break from technology, and any particular obligations and expectations that might end there – an obligation to be *available* or *responsive* while on the go. Rather, their disconnections were about leveraging technology non-use to free themselves of a much broader set of expectations regarding the participation in their everyday social and economic lives. In trying to understand why people experience disconnection as powerful, it is crucial to pay attention to what else is also changing alongside and around the shift in usage patterns.

In the next chapter, I draw on a personal experience in attending a disconnection retreat to further explore the ways that 'disconnection' is not just a materially useful proxy – cutting one off from the ability to communicate – but also provides a culturally legitimate excuse to disengage from social life more broadly.

# Chapter 10

# ‘Digital Detox’ as Justification and Proxy: Camp Grounded

I first heard about Camp Grounded when attending “Wisdom 2.0,” an annual conference in the San Francisco Bay area which brings together mindfulness teachers with technology industry leaders. At the annual event, keynote speakers include the founders of Twitter and Zappos alongside longtime spiritual leaders like Roshi Joan Halifax and Jon Kabat-Zinn. The variety of attendees discuss and engage in a conversation centered on the question, “How can we live with wisdom, awareness, and compassion in the digital age?” They promote practices of meditation, yoga alongside new computational devices and software that aimed to help people find some relief in lives that were busy, overwhelming, and stressful.

In a breakout session, at the conference one year, Levi Felix, founder of DigitalDetox.org, seemed to be proposing a slightly different kind of solution to problems of overwhelm: turn off the technology. Hosting a series of retreats, including the heavily promoted ‘Camp Grounded’ ‘summer camp for adults’ Felix preached the power of ‘disconnect[ing] to connect.’

Felix’s own story was nothing short of amazing. In the session, he recounted his biography over the last half-decade as his life seemed to careen from an unexpected hospital stay at SXSW due to severe

internal bleeding from an ulcer partly caused by his over-committed "start up game" lifestyle to a 3-year off-grid sabbatical on a remote island where he took up spear fishing and "learned to breathe" to his return to the SF bay area where he founded yet another company, but this time it was a company that aimed to help people deal with the stresses of contemporary life that he had so viscerally experienced.

He described returning from his sabbatical, and stumbling into a series of books about the problems with new ICTs: *Alone Together* (Turkle 2011), *In the Shallows* (Carr 2011), and *Hamlet's Blackberry* (Powers 2010). He told the crowd at Wisdom 2.0 that we had "fast media," but what we needed was "media fasting." He decided he needed to start taking people "up into the woods."

At the breakout session, he was dressed in a new (he noted aloud to the audience) and freshly pressed chambray shirt, clean shaven face except for a well crafted mustache, twisted up on each side (though he lamented that he forgot his mustache wax that morning, as he twirled the ends during his talk). His partner in the venture was wearing red plaid flannel, seductively unbuttoned halfway down her chest. A well-polished slice of a tree branch, naturally edged by its bark, hung as a pendant around her neck. The particular aesthetic of disconnection as a form of reconnecting with nature was apparent, and the event and its marketing tapped into a more broadly circulating lifestyle aesthetic.[1]

Coupled with chemical addictions to our devices (dopamine, oxytocin), it was fear, in Felix's diagnosis, that drove constant, obsessive, compulsive, and unhealthy connection: a "fear of missing out," or FOMO as it is often abbreviated. At his Camp Grounded events, he talks about how it is precisely this FOMO that is banned alongside the digital devices that it enables/that enable it.

Camp Grounded has been something of a media darling for journalists and social commentators writing about disconnection. It seems everyone has something to say about it. Overworked writers, like Matt Haber for the *New York Times*, begin articles about the camp by describing their own lives in dramatic and harrowing terms, with technology (usually an iPhone) taking center stage:

[1] See also Portwood-Stacer (2012c) on the aesthetics of non-use; See Glascock (2015); Process Collective (2013); and "Kinfolk Magazine" (n.d.) as examples of a similar aesthetic centered on authenticity and nature.

> The work-life crises of the meth dealer Walter White on "Breaking Bad" and the advertising executive Don Draper on "Mad Men" (or, when I was feeling particularly dark, Dexter Morgan, the serial killer on "Dexter") were amplified, better art-directed versions of my own 24/7 grind. At night, the iPhone was docked beside my bed, making me feel that even as I slept, I was on the banks of the data stream just in case anything important – or anything at all – happened. (Haber 2013)

Following the same template of a disconnection travelogue, they describe their attendance at the technology free camp as blissful, silly, calm, and peaceful:

> I had my face painted, napped in a hammock and spontaneously danced – not an easy thing since, as friends and family can attest, I've never done anything spontaneously in my entire life. … And one night, I found myself lying on my back, gazing up at the night sky. The only other times I'd seen the constellations so clearly were when I glanced up at the ceiling in Grand Central Terminal. Somewhere outside of Camp Grounded, iPhones were buzzing with the breaking news of Rupert Murdoch's divorce and Kim Kardashian's baby. But I was looking for shooting stars, not reality ones. And for once, I was enjoying the silence. (Haber 2013)

Such depictions of the event have raised their own critiques within the popular media. Jurgenson (2013) highlights the event in his article criticizing "the disconnectionists," including in his summary, a provocative quote from Madrigal (2013)'s prior critique:

> Most famous, due to significant press coverage, is Camp Grounded, which bills itself as a "digital detox tech-free personal wellness retreat." Atlantic senior editor Alexis Madrigal has called it "a pure distillation of post-modern technoanxiety." On its grounds the camp bans not just electronic devices but also real names, real ages, and any talk about one's work. Instead, the camp has laughing contests. (Jurgenson 2013)

I was admittedly skeptical about the event when I first heard of its existence, feeling much more resonance with something like Madrigal (2013)'s critique of Camp Grounded than anything I had heard in Felix's presentation at Wisdom 2.0. Nonetheless, it seemed to sit right in the middle of the research I had been conducting, and I decided in late 2013 that maybe I should go and see it for myself, instead of just taking Madrigal, Jurgenson – or anyone else's – word for just what the event was really about.

In actually attending Camp Grounded, I came to realize that 'digital detox' was less the point itself. Instead, the removal of technology appeared more as a proxy for short-circuiting[2] the obligations and guilt of a contemporary life overflowing with demands of contemporary capital, social obligations, a feeling that one needs to be always networking, and a sense that there is never any 'down time.' Like Thurston's 25-day unplugging experiment, Camp Grounded seems to use technology removal as a means to multiple ends.

Removing technology made the event possible: without smartphone or computer access, attendees were, in fact, separated from almost every obligation of – and all the typical routines of participating in – our social lives: friends, family, work, neighbors, volunteer groups, utility bills, scheduling, to do lists, and so on. Discourses of the benefits of disconnection make the event legitimate and worthwhile – to individuals and to their colleagues, family, and friends from whom they are cut off during the weekend.

However, a broader set of rules and configurations of the context of the event – no work talk[3], no watches or clocks, no real names, and so on – were also central to the experience of the event, and underscore the importance of understanding disconnection events holistically. Camp Grounded was not just about turning off a smartphone, it was – as the camp brochure put it – about "leaving it all be-

[2] See Stewart (2007)

[3] This, in particular, presented a challenge for me, as a researcher. Although I did tell the camp staff in my initial paperwork that I was studying disconnection as part of my dissertation, I could not actually talk about this work to other attendees at the camp itself. As such, I tried to take advantage of the event as an opportunity for reflecting on my own participation and experience, and I did not take detailed observational notes on what others were doing around me, out of respect for the event itself. Therefore, this chapter proceeds in a more first-person perspective than the fieldwork conducted with families.

hind": work, family, friends, news, histories; all the social obligations to care about anyone but oneself and those in one's immediate presence.

## 10.1 Preparation: To Truly Leave it All Behind

A few weeks before the start of Camp Grounded, I received a welcome packet in the mail. I laughed when opening it and a yarn bracelet and small clipping from a pine tree fell out of the envelope, which also continued more typical preparatory information – such as driving directions, a list of recommended items to pack, a schedule for the weekend.

Opening up the handbook, the first few pages notably did not include any references to technology. The guide opens with a quote from John Muir:

> Thousands of tired, nerve-shaken, over-civilized people are beginning to find out that going to the mountains is going home; that wilderness is a necessity; and that mountain parks and reservations are useful not only as fountains of timber and irrigating rivers, but as fountains of life. (Muir 1901, 1).

Much like the espoused ideology of the Burning Man festival – which many of Camp Grounded's organizers had attended for several years – Camp Grounded was as much about a break from everyday "civilization" as it was about anything else. The 'technology cleanse' provided not only the means to make this break, but also the culturally legitimate excuse. Rather than focusing on technology non-use, the opening letter from Levi Felix on the next page of the handbook focused on a positive description of how this alternative to the everyday will be characterized. The weekend at camp would be about things like laughter, love, dancing, and singing.

There were, however, three full pages in the welcome guide dedicated to "preparing for your digital detox." Notably, almost all of these suggestions were about preparing *other people* and creating realistic expectations. The suggestions included:

- "Let others know far ahead of time about your Digital Detox."
- "Push deadlines back, focus on what's critical, and arrange an extension for work if needed."
- "Create boundaries and digital safety nets for those that reach out to connect with you; who can they contact in your absence, in times of emergencies or immediate demands."

The suggested out of office response in the handbook included more than just letting others know that one was going to be out of the office. Moreover, it explained that one was planning to take a "digital detox" and that even after returning, one might be slow to respond to any large accumulation of messages that had arrived during the time off:

> SUBJECT: On a Digital Detox at Camp Grounded – Summer Camp for Adults
> I'm currently unplugged and enjoying my time as a camper at Camp Grounded in the Anderson Valley redwoods. I will be away from all digital technology from (insert dates) , and will get back to you on my return.
> ** Due to an influx of emails I may receive while away, I will be responding to all emails received during my Digital Detox in a leisurely fashion. If your email requires a time sensitive response, please resend this email or follow-up with me again after (return date) to ensure we connect in a timely manner. Otherwise, I'll get back to you within 7-10 days of my return to the interwebs.
> **If your email is urgent or requires an immediate response, please email:** (phone number and email of your work or personal emergency contact)
> Thank you!

An explanatory note in the handbook about just *why* Camp Grounded was different than a regular vacation included the statistic that on a typical vacation, "61% of Americans will work." From just reading the handbook, it is clear that the event is not just about technology, but also about resetting social and economic expectations and obligations. Simply preparing for the camp event – notifying colleagues, putting up notices about absence on a Facebook page (they even provide profile images for attendees to use), giving the camp emergency contact number to someone – remind one of the sociality of digital devices. Who and what are you going to miss when you go "off the grid" for a weekend? Who is going to miss you? Preparing to exit one's life – if only for a weekend – brought into relief the various ties that would have to be severed, the effort of severing, and the promise of a self that might be experienced as distinct from the various entanglements of everyday life and the computing that is ubiquitous within it. As the handbook made clear to attendees:

> An important part of taking time off from technology is being able to truly leave it all behind.

The success of the event required that participants could feel confident not just disconnecting from technology, but more importantly, could be "comfortable and supported in their effort to temporarily detach from work, friends, and family." This would be more than just a technology cleanse; it was also, very explicitly, a social cleanse.

## 10.2 Rules: No Technology, No W-Talk, No Names, No Ages

Arriving at camp, after a round of typical check-in procedures, I was directed to a building outside of which people dressed in head-to-toe white suits were waving tennis rackets around each attendee's body and making beeping sounds at various points to indicate the presence of 'technology.' I then proceeded down a sort of decontamination zone – a hallway bathed in purple lights and enhanced by the presence

of a fog machine. At the end of the hallway, camp counsellors stood behind a table at the entrance to a storage room handing out paper bags.

I was instructed to place anything either valuable (there were no lockers anywhere for attendees to use) or disallowed at camp – primarily watches, phones, and wallets – in the bag. The bag was then stapled shut, labeled, signed, and handed over to be locked up for the duration of the event. There was much laughter and smiling and an open acknowledgement of the silly and performative nature of this detoxifying event, the fog machines, and the purple lighting. Yet, the walls of the hallway were also covered with quotes cut out from research articles about the effects of digital technologies, multi-tasking, and connectivity on social relations, and one's psychological and social wellbeing. These scientific studies, and the ways that their findings reverberate through the popular media and American culture more broadly provided the legitimate excuse for the retreat – and for one's more totalizing exit from everyday life over the course of the weekend than would have been typical on a more connected 'vacation.'

In addition to the material separations, the arrival process also included reminding one about the rules of camp grounded. Creating the right context for the event – to make it possible as a place where one could "feel free," "celebrate life," and experience "a time of exploration, growth, and true self-discovery" – required more than just removing digital technology.

There was only one word that was off limits at the event – "work." Referred to as "W-talk" by camp counsellors, my introduction to the weekend at the event itself reiterated this key rule from the handbook I had received several weeks prior: "Talking about work at networking is strictly prohibited at Camp Grounded." Banning "w-talk" meant that people could not network or treat the event like a 'conference.' Also banned were real names, the or the sharing of one's age. All of these things conspired to create a space in which the social habits of what Camp Grounded called the "default world" had to be re-negotiated. People had to come up with new ways to introduce themselves – suggestions were trivial, introducing yourself by a favorite food, explaining your camp nickname. Nonetheless, American habits of forming an identity almost entirely around one's career were hard to shake. Throughout the

weekend, I found myself in conversations in which someone would cut themselves off, “oh, I can’t talk about my ‘W.’ ”

## 10.3 Being There: An Inversion of Responsibility

Also disallowed at camp were any timekeeping devices. As the handbook had explained

> We find ourselves in a world where life often seems to revolve around the concept of time (or lack thereof). It is quite easy to become consumed with the past and the future, making it difficult to truly enjoy the current moments of now.
>
> Alarms, watches, and clocks tell us where we have to be, what we have to do, and how much time we have until the next task or appointment in our busy day. Our phones have stepped in to guide our stomachs, telling us that it’s time to eat.

By contrast, at Camp Grounded, the goal was for attendees to give themselves “the permission to step off-the-grid, forget about the construct of time, focus on being present.”

Ultimately, a camp that served shared meals in a dining hall could not completely live up to the idealized version of a fluid self-regulated day that the handbook described. However, what the banning of watches *did* impress upon me as an attendee, was a freedom from the responsibility to be my own monitor of time. Instead, the counsellors all had watches (which they kept hidden under wrist bands from prying eyes). Although sometimes feeling imperfect in execution, for the most part, as an attendee, I felt the weight of responsibility for getting myself to the right place at the right time was generally lifted off my shoulders.

Each day started at roughly sunrise, with a yoga class on the main camp lawn and a cart serving pour-over coffees from local Bay Area roaster Bicycle Coffee. Breakfast started at some hour after yoga was over, announced to matchless attended by the playing of a bugle. There was a singalong at all the meals.

The morning and afternoon were filled with ‘playshops’ (not ‘workshops’ because ‘work’ talk is not allowed) devoted to a mix of activities from archery, drawing and crocheting, to more contemplating guided meditations or creative writing instruction on the ‘typewriter range’ (a bank of typewriters set up in place of the camp facility’s usual rifle range).

One’s temporal place within the day’s planned activities was (with varying degrees of accuracy) noted by an arrow pointing to the portion of a pie chart representing the days’ schedule. On each evening there was an event. First, a dance – a 70s themed disco for which many people had come prepared with extravagant costumes. Second, a contemplative solstice dinner – eaten in silence for the first half our or so after an equally long and also silent walking meditation.

The juxtapositions of silliness and seriousness could feel disjointed at times – are we just play-acting at being kids, or are we more seriously reflecting on the situations of our everyday routines that attracted us to the event in the first place? However, as a whole, the event seemed to succeed for many participants, opening up a space for a kind of embodied thought experiment about what it might feel like to live somehow differently. This ‘differently’ was characterized in part by a lack of digital technology, but was also different in that social encounters could not easily be predicated on one’s economic status or job title. The obligations to participate in one’s regular social life – work, family, friends – were suspended.

## 10.4 We should be talking to one another

In this chapter, I have examined non-use as an event constituted by more than just the absence of technology. This examination further emphasizes the finding of the previous chapter that technology non-use could be a proxy for broader social disengagements. Technology removal materially separates one from everyday social life, because it’s simply hard to participate in a “smartphone world” (see also, section 8.2, Tom’s iPhone: It’s a smartphone world) if one is not using a smartphone at all. Technology is

deeply intertwined in many facets of everyday life such that cutting oneself off from technology serves as a powerful proxy for cutting oneself off from all the stresses of life. Thus, the fact that events like Camp Grounded seem successful in evincing a separation from social life underscores the ways that contemporary computing technologies are ubiquitous – less because of quantifiable proliferation, and more because of the multifarious aspects of life in which they are implicated. It follows from this, that we must understand "digital detox" events as equally about the 'social detoxes' that they entail. Understanding why they *feel* good to participants requires accounting, explicitly, for the broader context shifts that disconnection entails.

Secondly, this chapter emphasizes that technology removal is also a powerful symbol, a culturally recognize and socially legitimate excuse to disengage from social life. As Frank and Julie Davis, the Southern California parents we met in Chapter 5, reflected in an interview:

> Frank: I've thought about this quite a number of times and I think that were we pre electronics, if [my wife] went into her study and read I might be resentful and say, 'You're taking yourself away from the family. You're not interacting with the rest of us.' But now we've got an extra level. It's now an extra level… of disconnection and we're now, our generation feels the sorrow, the loss of the value of reading. So we're mourning that last chapter with this new chapter in front of us, but if we didn't have the new chapter, we'd say, 'Julie, why do you read so much? You're taking away–'
>
> Julie [interrupts]: We should be talking with one another.
>
> Frank: We should be talking with one another.
>
> Julie: Yes, we should be having face time.

'Unplugging' from computing technology itself feels like a *good* thing to do in large part because of the contemporary rhetoric of technology addiction and detox. Even if we might identify this rhetoric as partly *wrong* – i.e. as cultural critics like Madrigal (2012) have questioned, "Are We Addicted to Gad-

gets or Indentured to Work?" – we should not underestimate the rhetoric's power and usefulness for making possible disconnection events, which might actually be about work as much as any specific technology. As this chapter has shown, disconnection events can succeed as culturally sanctioned vacations precisely because of this rhetoric of technology addiction.

The discourses of technology addiction and the combination of aesthetic/ascetic motivations are critical for individuals to feel empowered to enact periods of 'disconnection.' Just as technology use can be a symbol for forms of overload (see Barley, Meyerson, and Grodal 2011), technology non-use functions in a similarly cultural and symbolic way.

The rhetoric helps to create the space for the context shift that occurs during the event itself – a sabbatical period during which the performance of normative values are temporarily suspended – e.g., demonstrating and enacting care through responsiveness on Instagram; or the demonstration and enactment of being a good worker through responding to a late night email. This context in which the landscape of possibility has been altered via the removal of technology, offers up the possibility to renegotiate the meaning of "care" or being a "good worker" and forces individuals to re-negotiate their identity. Even if only temporary, at Camp Grounded one is forced to experiment with identities that cannot be centered on busyness, work, or a career (see, e.g., Leshed et al. 2011, on the production of busyness as a value through the use of calendaring systems; Mazmanian 2013, on the re-construction of what it means to be a good worker and colleague in an age of ubiquitous email).

Individuals are allowed to ignore their work, ignore their friends, ignore their families, if it is in the name of the culturally-sanctioned ascetic project of disconnection. Importantly, then, just as e-mail is not the only cause of feelings of overwhelm, non-use in isolation is not the only cause of feelings of freedom and 'bliss' as described by disconnectors like Thurston (2013).

As we have seen in this chapter, disconnections from technology necessarily imply disengagements from social life – and thus from many of the other causes of feelings of overwhelm and anxiety that are the reported reasons for needing to disconnect. Because computing technologies are so integrated

within habits of interaction and social patterns of work, family, and leisure, the non-use of technology necessarily disrupts these habits and patterns. As Portwood-Stacer (2013) has noted, this can be a barrier for some to engage in an act of disconnection – because to disconnect from a service like Facebook would mean that one might not be able to maintain a connection with some valued friends. However, this same situation – the centrality of Facebook to the possibility for interaction with some persons – is also the productive force behind why disconnection can be a powerful event.

Secondly, disconnections from technology are almost always accompanied by other, more explicit disengagements from social life. Whether the participants are undergraduates away for a weekend (see, e.g. Lee and Katz 2014), or working professional adults going away to Camp Grounded for a weekend, or someone like Roberts (2014) combining a technology 'unplugging' experiment with a full-year's sabbatical from his job, individuals are uprooted from their everyday social and economic relations through more ways than just the cutting off of technology. When assessing the freedoms people feel during these sabbaticals and retreats, it is critical to recognize that part of these freedoms are the result of people simply taking vacations. The removal of networked technology from these vacations is the means by which the sanctity of the vacation might be kept, a way of physically preventing the possibility of conducting work while on the vacation – as 61% of Americans normally do, according to Camp Grounded.

Here, then, what stands out as different between the situation of everyday life and the situation of a disconnection or unplugging event, is not a particular moment of the "non-use" of technology, but the way that the entire context for the event is different than the context of everyday life. The removal of technology from this context is one important means of enacting the context shift, and changing the landscape of possibility for participants. The removal of technology effects a shift in the terms by which everyday life is enacted and obligated. Thus, again, we can see how ubiquitous personal computing might be understood as something contextual, rather than center or locus of these events itself.

These explorations of non-use events show that they were defined by much more than just the absence (or limiting) of technology use. Just as technology use is always entangled with the enactment of social relations and belonging within one's social life, non-use is also about human relations. Rather than un-

derstanding non-use as a pushback against specific technologies or unmanageable "information flows" (see Baumer, Burrell, et al. 2015), what these studies suggest is that non-use might be understood as a way of dramatically shifting one's context.

Removing technology from the scene of life is necessarily accompanied by a shift in the expectations of others and the obligations that one feels to act in certain ways. Removing technology removes the possibility for work. Disconnection in these events is a proxy for, and legitimating reason for, disengaging from social life more broadly. When non-use seems to impact people's lives, it succeeds as a proxy precisely because of how technology has been woven into all the many practices of everyday life.

Thinking of computational technologies as part of the context for social and economic life re-centers the discussion on more systemic sociotechnical configurations rather than individualized moments of interaction with 'glowing screens.'

In the next chapter, I turn to an exploration of a hybrid space that shares some aspects of its context with the lives of workers and families in Southern California, and some aspects of its context with the disconnection event. Through an examination of the experience of thru-hiking the Pacific Crest Trail (PCT), I explore a space that is characterized by heavy use of computing technologies but low levels of social obligation and expectation.

# Chapter 11

# Disconnection alongside ICT Use on the Pacific Crest Trail

> It's hard. I was not expecting it to be so derailing to settle back in. I don't know how you found it? I was like, this is taking a lot longer to settle back in than I was hoping. [Francine, former thru-hiker]

Every hiker I interviewed after completing the Pacific Crest Trail recounted a similar story of finding their "re-entry" to society to be dramatically difficult. Although the phenomenon of "re-entry" is well-known within the hiking community – a common topic of email lists, Facebook groups, trail memoirs, blogs, and preparation handbooks – no one ever seems quite prepared for what it is going to feel like.

The stories of re-entry that people shared with me surfaced concerns and struggles within everyday life that share similarities with those recounted in popular books about the "overwhelm" of contemporary life (see, e.g. Schulte 2014) and by Southern California working parent participants in this research. They revolve around questions of obligation, community, freedom, and fulfilling challenge. Yet, interestingly, they almost never included specific references to computing technology.

After having spent five to six months living in the mountains with somewhat limited connectivity, this transition back to a life within the context of more infrastructural availability – of both internet connectivity and electrical power – might be expected to provoke anxieties around "constant connection." Yet, no one that I talked to raised this concern in talking about their transition from the trail back to a different form of everyday American suburban or urban life.

Asking Francine about her experiences of re-entering mainstream American society, led to an extended reflection in which she compared her life on the trail to her life back at home in suburban California. Notably, since finishing the trail she had enrolled in a graduate degree program, which she was finding to be difficult to keep up with, in the same way that other members of her cohort were doing – and to even perform at the same level that she would have before the hike.

> It's made it much much harder to accept this level of intensity. Not because I can't do it, but it's like the – I constantly question, why? Like, what's the purpose? Why is it that to learn how to be a policy maker we need to put ourselves through this experience of extreme intensity? Like, why do we need to hurt ourselves? … I would not have questioned it [before hiking.] I would have assumed, like, oh, of course, when you're becoming a professional and pursuing what you want to do that you need to be working incredibly hard. But [my experience on the PCT] puts a different spin on it. Because on the PCT we were working really hard – like you work really hard in the sense that you like are walking all day, but it's a totally different – like you're not pushing yourself – what's the right word – against your own will. It's like you find a reserve and a pace and a state of calm that kind of moves you.

The intensity of the trail – which might have involved walking 25 or more miles in a single day, while carrying 20-40 pounds of gear, food, and water – felt like "the right kind of hard." By contrast, her new life as a graduate student, felt artificial:

> I think that sometimes – especially in academia, as I'm sure you can appreciate, we manufacture stress and we also do that in our lives. We challenge ourselves in a way that isn't necessarily rewarding, or to me, that makes sense.

The PCT had been "challenging in the most tangible way… it's not something artificial that you manufacture… you're being challenged as like your whole person instead of, um, being challenged in kind of artificial constructs." She missed the PCT for providing this fulfilling challenge, which she did not have in work or school.

> Like, in school I'm certainly challenged, but it's the kind of challenge where you're not taking care of yourself, you know you're not sleeping, you're not eating because you're trying to get as much done as possible, and like it doesn't fulfill you in the same way.

In response to her difficulties "settling back in," she had been trying to "calm down her commitments." When I asked what she meant by that, however, she reflected that she had not been the most successful at it:

> I guess that's not true, cause I'm in grad school and its really hard, which is kind of a mistake (laughing) but, um, if I were not in grad school right now – like I'm just more willing to take it easy and not consider that a bad thing.

On the trail, she had accomplished the goal of the hike while also finding time for rest. As her hiking partner described their hike:

> We took quite a few zeros I'd say. We did it in a good amount of time. We didn't like kill ourselves doing it.

This experience had changed Francine's attitude towards other kinds of challenges. Before hiking, she said that she felt like "rest was never okay." Whereas before her hike, she had not prioritized things like "unstructured free time," she now felt that it was a "very valid and important part of my life."

The context of her life on the PCT, had served to change the way that she now interpreted stresses that might otherwise be routine. As she put it, "[Thru-hiking] has changed the way that I look at stress and the things I deal with now. It's kind of like a contextualization."

> It's made me look at the intensity of all this in a totally different way. I'm kind of uncompromising. which has made it a little bit harder. So, I'm unwilling to kind of surrender to some of that intensity because I think that it's unnecessary. And it's definitely been problematic, like with grades. You know but there's certain sacrifices I'm like I just have to – gotta make. I've gotta make those.

Francine's struggles to meet the challenges of graduate school that demanded a kind of "not taking care of yourself" level of intensity recall the feelings of people like Chris and Michael from the opening chapters of this dissertation – living "at a breaking point" or under a "constant level of stress. Much like the stories of disconnection recounted by Thurston (2013), Roberts (2014) and Haber (2013), for Francine, the PCT had been "a really nice excuse" for her to "take a break from this life." Both Francine and Thurston (2013) describe their experiences – on the PCT and "unplugging" respectively – to be "blissful." That, Francine said, was the "best kept secret about the PCT":

> And, ah, which isn't ah, actually what it felt like on the day to day. **It's kind of like the best kept secret of the PCT in my opinion, is that everyone else is like, 'you're really challenging yourself, and you're roughing it, and it's really hard.' And you're just like, 'this is just bliss**, like, I can't lie to you. I'm having a great time, and it's like the right kind of hard.'

If disconnection is ultimately about evincing a context shift, then it stands to reason that the context for one's social life could also be shifted through other means. Much like Camp Grounded, thru-hiking the PCT provided a way for people to dis-engage from their everyday social lives – yet, as I will show in this chapter, we did not have to entirely surrender our digital technologies in order to do so.

## 11.1 The Monument

On the afternoon of April 21, my friend and colleague Lynn Dombrowski drove my partner, Luke, and I to the southern terminus of the 2,650-mile Pacific Crest Trail (PCT). We exited the I-8 freeway just a little less than an hour outside of San Diego. Shortly thereafter, we passed through the small town of Campo, CA, and then lost cell service – just as the road signs also disappeared and we found ourselves in a veritable maze of gravel and dirt paths through what appeared to be an unwelcoming and empty desert landscape.

While Lynn drove, I was trying to navigate us to the trailhead – also known as "the monument" because of the approximately six foot tall four-tiered wooden marker that designates the southern terminus of the PCT. Though I had never been quite sure where the endpoint of the trail *was* on the Google Maps app on my smartphone, losing cell service still left me feeling somewhat uneasy[1]. I was also trying to read and navigate from the directions on my printed Halfmile maps[2] – the standard set of maps used by PCT hikers (See Figure 11.1. These maps will be discussed further in the next section.).

Over the next several months, the Halfmile maps – along with an accompanying smartphone app (see Figure 11.6), and crowdsourced water report (see Figure 11.3) – would become my guide to nearly every activity and moment of my days on the trail[3].

Driving out of Campo, however, the maps appeared to be a messy jumble of lines to my eyes that were previously accustomed to the austere simplicity of a Google Maps aesthetic (compare Figures 11.1 and 11.2). The terminus was labeled clearly in the lower right side of Halfmile's map, and a box in the lower left corner had written directions that described how to get from the town of Campo to the trailhead

[1] The terminus is now marked on Google Maps, as are some (but not all) sections of the trail itself. This drive would undoubtedly be a different experience just two years later.

[2] see pctmap.net

[3] For example, where to find water, where to camp, what kind of climbs and descents would mark the day, how far I had walked between breaks, what side trails were worth a detour, where I could find a hiker friendly or hostel in a trailside town, how to find the post office to pick up a resupply package, where to buy food and whether the post office or grocery store would be open on any given day and at what times.

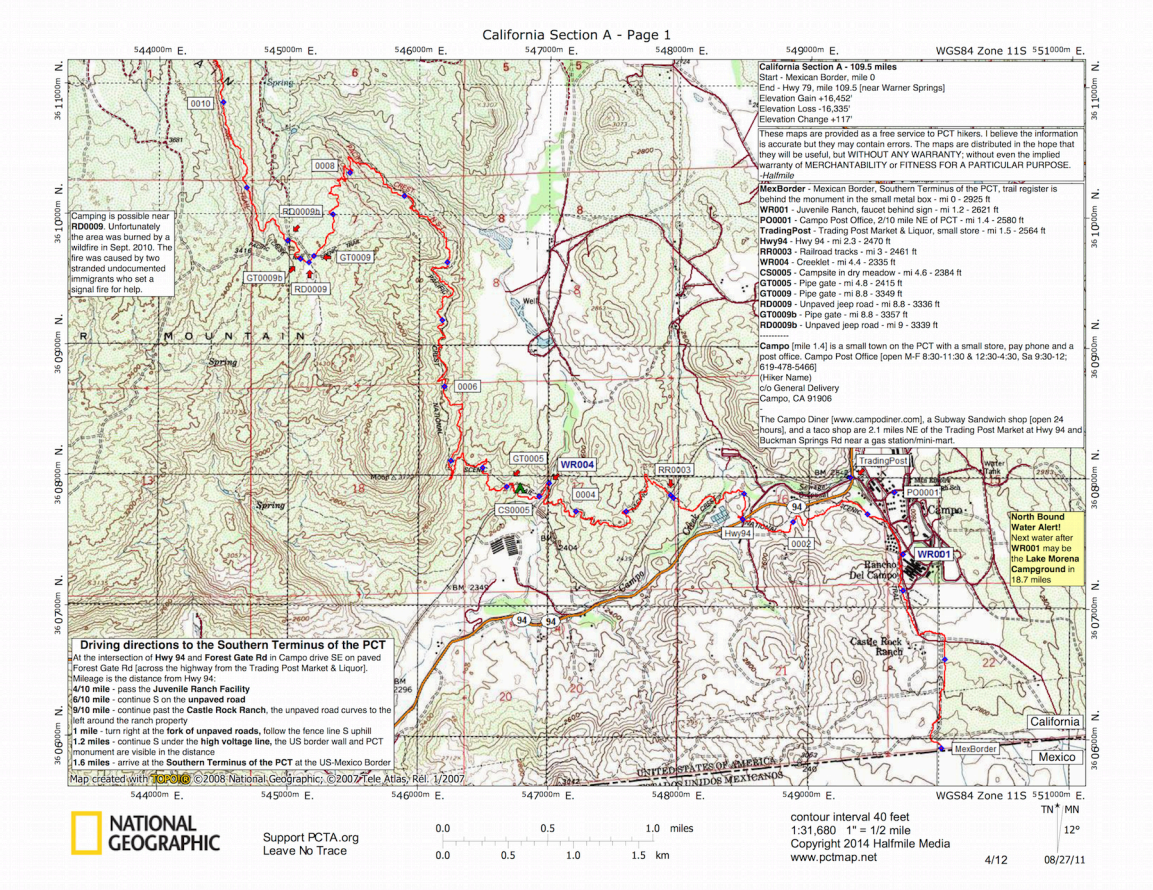



Figure 11.1: Page 1 of the Halfmile map for California Section A. The area depicted includes the southern terminus of the PCT. Source: https://www.pctmap.net/.

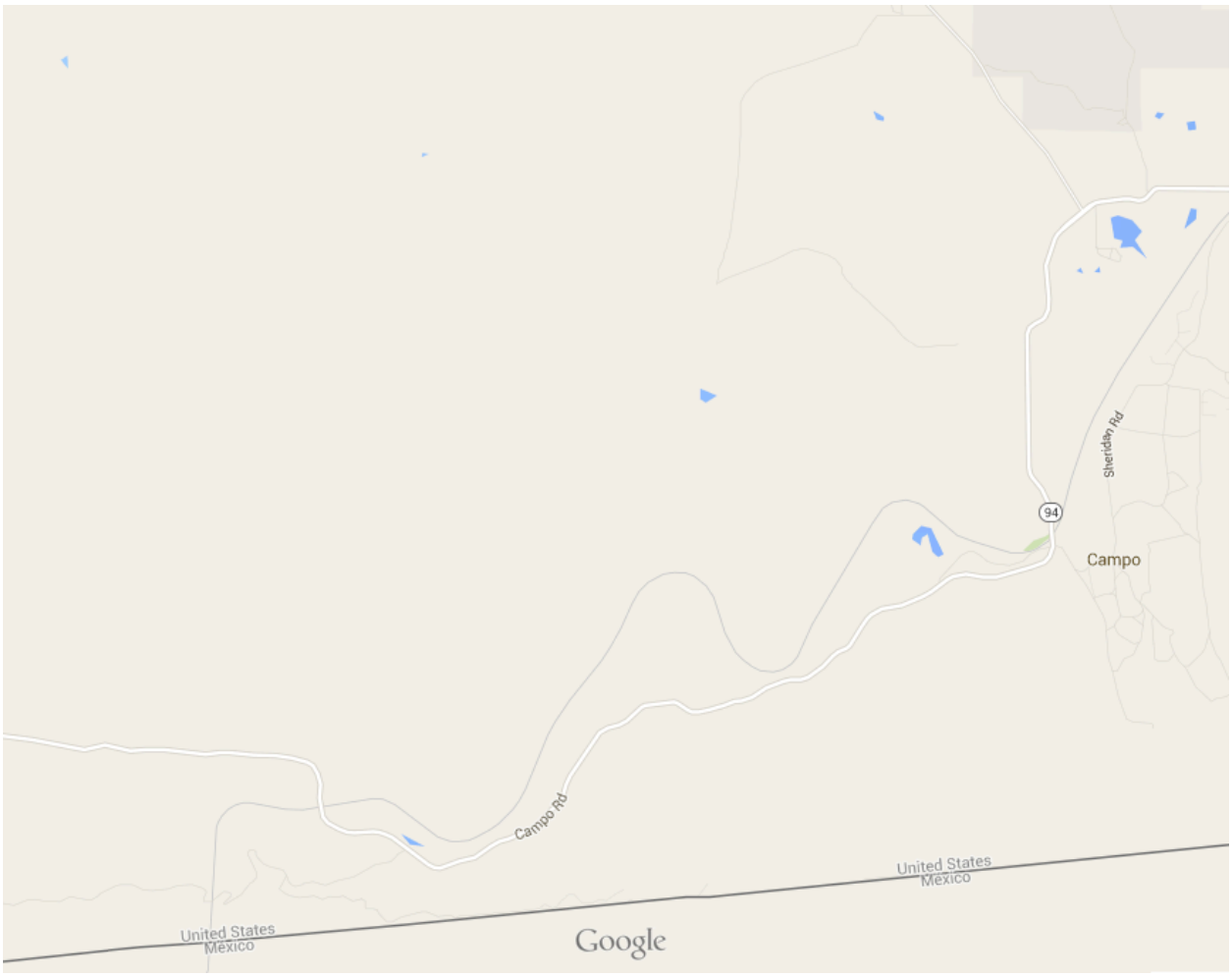



Figure 11.2: A screenshot of Google Maps interface showing the same location as Figure 11.1 for comparison. Map data © Google, INEGI.

(see Figure 11.1). Yet, I did not feel entirely confident about matching up our current location in the car to anywhere specific on the papers in front of me.

The map identified all variety of landscape features: various types of roads, trails, land ownership boundaries, water sources, topography. These features were distinguished by equally many colors and lines: shaded areas in greens, browns, grays, and blues; dashed lines, double dashed lines, solid lines of varying thicknesses; yellow lines, black lines, blue lines, brown lines, red lines, slightly more purple red lines. All together, these many notations were somewhat meaningless to me at the time, and felt a bit overwhelming.

Exacerbating my sense of information overload, the National Geographic TOPO! software that had been used to produce the maps has a particular format that overlays vector-art tracings of some, but not all, roads on top of underlying base imagery – imagery that had been scanned in at far too low of a resolution and was woefully out of date. For traced areas, the overlaid routes were more accurate and current than the underlying imagery, and thus the lines diverged at places in ways that my eyes had not yet learned to ignore. Yet, not every road had been traced. So, it seemed unclear which lines on the base imagery depicted old gravel roads that no longer existed, and which depicted roads we might actually encounter, but had not been deemed important enough to trace.

Thus, we proceeded with quite a bit of hesitation out of town, wondering at several junctions which particular fork on the map corresponded with the piece of road in front of us.

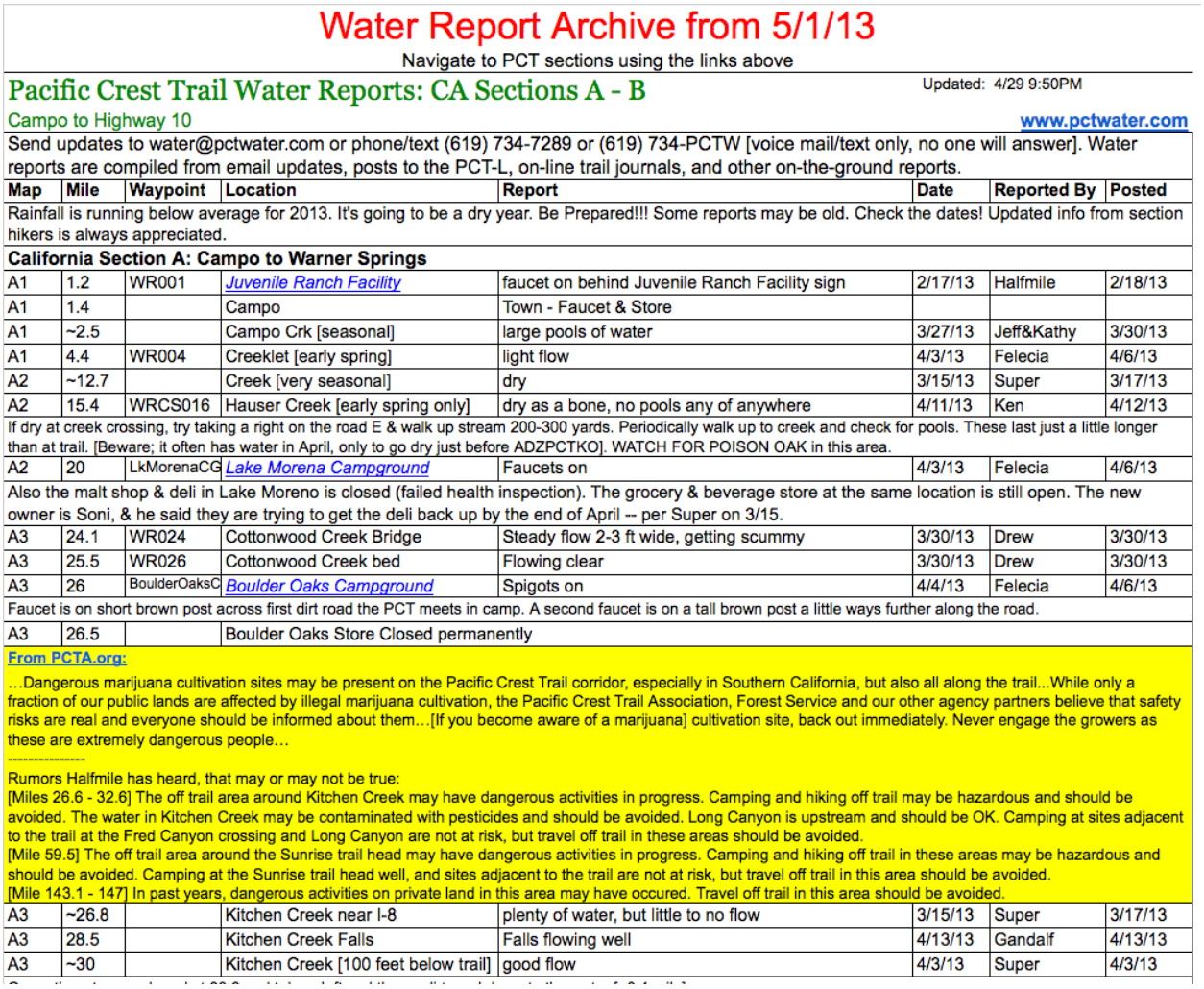
As we neared the US/Mexico border, we began to see numerous white and green border patrol SUVs parked on the side of the road, in driveways, and in DHS stations. Dirt roads and paths – presumably traveled almost exclusively by these DHS vehicles – criss-crossed the desert and appeared, in person, much more numerous than my maps would have led me to imagine. We were in a mid-2000s white Pontiac sedan (not very desert-sport in appearance), and were stopped along the way by one of these vehicles, whose driver asked authoritatively 'Where are you going?' These roads, it seemed, were not totally public and I was worried we had taken a wrong turn. "We're going to hike the PCT!" I said. Lynn

– driving the car, and dressed in some generic California city clothes – got a skeptical look from the agent, but he let us continue. I did not ask – and he did not offer – whether or not we were on the right road.

Finally, after gambling on turning down one of the unmarked dirt roads we came to, we passed under the power lines that my directions said to look for. We saw the monument marking the trail's terminus ahead and to our left, up on top of a small hill. We got out of the car, and I asked Lynn to take a picture of us on *her* phone and post it to Facebook when she got back to Irvine. I was not sure when we would have cell service again and I wanted people to know that we had made it to the starting point, at least. We snapped a couple of pictures by the car and Lynn waved goodbye and headed back towards suburban civilization. Luke and I decided to trek up the small hill to touch the official starting point and officially begin the five month hike.

While we were standing around at the monument, taking photos, another hiker showed up with a friend to scout the place out in preparation for her own departure later in the week. She planned to start out in the early morning, while it was still dark out, to beat the desert heat and sunshine. She seemed skeptical about our 2:00pm departure time, but I assured her that we were planning to take it slower than most hikers. We would take two days instead of one to cover the first twenty miles of trail, and so we wouldn't be walking too fast or too hard through the sunshine. We did have an up-to-date copy of the water report both on paper and cached on our smartphones (see Figure 11.3); and, thus, we were well-aware that there was no water at Hauser Creek, the only potential water source in those first twenty miles. She took a photo of both of us at the monument with my smartphone, and also clued us in to a small metal case attached to the back side of the monument. It contained a paper notebook where monument visitors – mostly just PCT thru-hikers, as this was not a particularly noteworthy section for wilderness hiking – could sign in. I realized that she clearly had some experience with the PCT.

She then told us about her uncompleted attempt at a southbound thru-hike the previous year – foiled by late snow in the Washington Cascades when starting out and further weather complications as she continued south. Having had this experience, she was nervous about whether she was getting started



# Water Report Archive from 5/1/13

Navigate to PCT sections using the links above

## Pacific Crest Trail Water Reports: CA Sections A - B

Updated: 4/29 9:50PM

Campo to Highway 10

www.pctwater.com

Send updates to water@pctwater.com or phone/text (619) 734-7289 or (619) 734-PCTW [voice mail/text only, no one will answer]. Water reports are compiled from email updates, posts to the PCT-L, on-line trail journals, and other on-the-ground reports.

| Map | Mile | Waypoint | Location | Report | Date | Reported By | Posted |
|---|---|---|---|---|---|---|---|
| Rainfall is running below average for 2013. It's going to be a dry year. Be Prepared!!! Some reports may be old. Check the dates! Updated info from section hikers is always appreciated. | | | | | | | |
| **California Section A: Campo to Warner Springs** | | | | | | | |
| A1 | 1.2 | WR001 | *Juvenile Ranch Facility* | faucet on behind Juvenile Ranch Facility sign | 2/17/13 | Halfmile | 2/18/13 |
| A1 | 1.4 | | Campo | Town - Faucet & Store | | | |
| A1 | ~2.5 | | Campo Crk [seasonal] | large pools of water | 3/27/13 | Jeff&Kathy | 3/30/13 |
| A1 | 4.4 | WR004 | Creeklet [early spring] | light flow | 4/3/13 | Felecia | 4/6/13 |
| A2 | ~12.7 | | Creek [very seasonal] | dry | 3/15/13 | Super | 3/17/13 |
| A2 | 15.4 | WRCS016 | Hauser Creek [early spring only] | dry as a bone, no pools any of anywhere | 4/11/13 | Ken | 4/12/13 |
| If dry at creek crossing, try taking a right on the road E & walk up stream 200-300 yards. Periodically walk up to creek and check for pools. These last just a little longer than at trail. [Beware; it often has water in April, only to go dry just before ADZPCTKO]. WATCH FOR POISON OAK in this area. | | | | | | | |
| A2 | 20 | LkMorenaCG | *Lake Morena Campground* | Faucets on | 4/3/13 | Felecia | 4/6/13 |
| Also the malt shop & deli in Lake Moreno is closed (failed health inspection). The grocery & beverage store at the same location is still open. The new owner is Soni, & he said they are trying to get the deli back up by the end of April -- per Super on 3/15. | | | | | | | |
| A3 | 24.1 | WR024 | Cottonwood Creek Bridge | Steady flow 2-3 ft wide, getting scummy | 3/30/13 | Drew | 3/30/13 |
| A3 | 25.5 | WR026 | Cottonwood Creek bed | Flowing clear | 3/30/13 | Drew | 3/30/13 |
| A3 | 26 | BoulderOaksC | *Boulder Oaks Campground* | Spigots on | 4/4/13 | Felecia | 4/6/13 |
| Faucet is on short brown post across first dirt road the PCT meets in camp. A second faucet is on a tall brown post a little ways further along the road. | | | | | | | |
| A3 | 26.5 | | Boulder Oaks Store Closed permanently | | | | |
| From PCTA.org:<br>…Dangerous marijuana cultivation sites may be present on the Pacific Crest Trail corridor, especially in Southern California, but also all along the trail...While only a fraction of our public lands are affected by illegal marijuana cultivation, the Pacific Crest Trail Association, Forest Service and our other agency partners believe that safety risks are real and everyone should be informed about them…[If you become aware of a marijuana] cultivation site, back out immediately. Never engage the growers as these are extremely dangerous people…<br>---<br>Rumors Halfmile has heard, that may or may not be true:<br>[Miles 26.6 - 32.6] The off trail area around Kitchen Creek may have dangerous activities in progress. Camping and hiking off trail may be hazardous and should be avoided. The water in Kitchen Creek may be contaminated with pesticides and should be avoided. Long Canyon is upstream and should be OK. Camping at sites adjacent to the trail at the Fred Canyon crossing and Long Canyon are not at risk, but travel off trail in these areas should be avoided.<br>[Mile 59.5] The off trail area around the Sunrise trail head may have dangerous activities in progress. Camping and hiking off trail in these areas may be hazardous and should be avoided. Camping at the Sunrise trail head well, and sites adjacent to the trail are not at risk, but travel off trail in this area should be avoided.<br>[Mile 143.1 - 147] In past years, dangerous activities on private land in this area may have occured. Travel off trail in this area should be avoided. | | | | | | | |
| A3 | ~26.8 | | Kitchen Creek near I-8 | plenty of water, but little to no flow | 3/15/13 | Super | 3/17/13 |
| A3 | 28.5 | | Kitchen Creek Falls | Falls flowing well | 4/13/13 | Gandalf | 4/13/13 |
| A3 | ~30 | | Kitchen Creek [100 feet below trail] | good flow | 4/3/13 | Super | 4/3/13 |

Figure 11.3: A screenshot of page 1 of the water report for Section A, archived in mid-2013. This crowd-sourced spreadsheet maintained via Google Docs will be discussed further in the section on the water report. Source: http://pctwater.net.

too late, and wondering how we felt about the timing. I had carefully planned our journey – like other hikers I would meet on the journey, I had spent hours crafting and refining spreadsheets before we left – and I felt confident both that it was not too late to start, and that we did not need to rush. This conversation about hiking speed and daily mileage, however, would follow us up the trail for the rest of our journey. No matter how close we got to the Canadian border, the question hung over decisions about taking days off in town or trying to push just another two miles at the end of an already long 25-mile day – at our current pace, would we be able to finish before the first snowfall?

Aspiring thru-hikers had taken to signing their names in the monument register that she had pointed out, noting the date that they began their hike, and keeping up a self-numbered list. We added our names as thru-hikers numbered 251 and 252 on the year. It seemed that even with our 'early' start a week before the semi-official PCT Kick Off event[4], we were not that close to the front of the "pack" – the name with which people referred to the main crowd or "bubble" of northbound thru-hikers as they made their way up the trail between April and September. I had an idea from statistics being discussed on various web forums that around a thousand people had registered for thru-hiking permits in 2013.

After one last look around at the monument, we said goodbye to the other hiker, and walked back down the hill, across the gravel road, and out in to the desert. The trail wound its way north following the road (and crossing it several times, which we found confusing, not yet accustomed to how to use the half mile maps or application quite right yet). Just before reaching the town of Campo, it cut west, away from the towns and towards the Cleveland National Forest. We wouldn't enter the forest until the next day, just south of our first milestone - Lake Morena County Park at the 20 mile mark.

Although I had been unsure of having much connectivity on the trail, my Instagram account shows that the photo of Luke and I at the Southern Terminus appeared online at precisely 2:00:01 pm – evidence that we, in fact, had cell service right away, as soon as we left the road, and walked up to the top of the small hill where the monument stood. Arriving at Lake Morena County Park on the following day, we

[4] See http://www.adzpctko.org/

would have both spotty cell service, and free WiFi at a small nearby convenient store that catered to thru-hikers – well stocked with ice cream, chips, beer, gatorade, and snickers bars. From the convenient store patio – they had small tables in the edge of the parking lot – I would write on my blog to friends and family:

> There is a surprising amount of cell service. I have been seeing all your likes and hearts on Instagram, but I'm having a hard time getting a strong enough cell signal to upload more photos[5].

Scholarship on wilderness, nature, and hiking – especially as related to computation – often focuses on things like the "restorative" aspects of the wilderness (for over-technologized city-dwellers) or the encroachment of technology on a sacred, and otherwise-defined, space (see e.g., Li 2010). As Richard Coyne writes in "Smartphones vs. Nature," the pressing question for many researchers in HCI revolves around a question of "Do ubiquitous digital media help or hinder the benefits of natural environments?" (Coyne 2014).

Coyne himself seems interested in locating a middle ground between those who argue that technologies detract from the natural environment and those who argue that technologies improve one's experience. His way of doing this is to draw attention to the ways that the other-ness contemporary culture assigns to technology is itself the benefit it brings to nature.

> The proliferation of mobile apps brings into sharp relief the power of digital technologies to disrupt, and therefore reveal, aspects of our experience of the natural world.

That is, the redeeming value of contemporary technologies is that they make us value anything other than those technologies themselves. For example, "communication on the Internet makes you value face-to-face personal contact even more."

[5] Lightly edited for grammar and clarity. Typing posts on my smartphone's virtual keyboard did not always result in the most well-written pieces.

Like Coyne, I am interested in locating an alternative stance to the opposing ideas that technology either helps or hinders the benefits of 'natural environments.' However, unlike Coyne, I am not interested in a middle ground which re-articulates a taken-for-granted distinction between nature and technology, or technology and humanity.

I am rather interested in a more radical re-positioning that puts computing technology "in its place" (cf. Harrison, Sengers, and Tatar 2011) – with all the other human technologies and artifacts that are simultaneously part of the possibility of human life and all of the imperfections, obligations, and varied experiences that constitute living that life – eye glasses, maps, music, automobiles, frozen food, agriculture, language.

What I would like to suggest about the PCT is that the thru-hike provides another case for thinking about computing technologies as context – less as disruptors and tools that outside of either human "focal practices" (Coyne's borrowing from Borgmann) or true engagement and connection, but rather are sites through which life happens.

When I was first beginning this hike, many people asked if I thought it was a bit "ironic" to be planning to take notes on my own smartphone while out on the PCT as a researcher studying mobile ICTs. The assumption often being that if I studied ICTs "critically," then I must be critical of them. But, this is not the kind of critical scholarship that I have found most useful in theorizing the sites and scenes of my fieldwork.

As we have seen in the previous chapters, many of the discontents associated with contemporary ICTs are thoroughly entangled with more general excesses of contemporary life – as related to the cultural expectations of work and family. Furthermore, technologies are not just tools of excess and obligation, but also integral to practices of care and belonging and leisure. Following technology scholars like Haraway (1997), I am thus not interested in either a purity argument that vilifies technology or an argument that tries to leverage the same assumption of technology's inherent 'difference' as a positive feature. As Haraway writes:

> Located in the belly of the monster, I find the discourses of natural harmony, the nonalien, and purity unsalvageable for understanding our genealogy in the New World Order, Inc. Like it or not, I was born kin to Pu239 and to transgenic, transspecific, and transported creatures of all kinds; that is the family for which and to whom my people are accountable. It will not help – emotionally, intellectually, morally, or politically – to appeal to the natural and the pure" (Haraway 1997, 62)

As Haraway noted at the turn of the last century, our contemporary world, is already "so enmeshed in technoscience, with its threats and promises," that she (and I) cannot stand outside of it, or critique it based on its otherness (44). There is no "pure" humanity that we might achieve by cleansing ourselves from a growing closeness with personal, pocketable, almost wearable smartphones.

The starting point for this chapter, then, takes technologies to be always-already human, and people as "natural born cyborgs" (see also Clark 2003). Thus, my goal in this chapter, is not to assess the proper 'place' of particular forms of computing with relation to nature, nor to evaluate the act of hiking or walking with regards to fantasies of purity or something more 'authentic' than city life (cf. Coyne 2014; Gros 2014 [2009]). Rather, I'm interested in subjecting the space of the PCT to a similar analysis as that of the families and workers in southern California. How can we understand the ways that the particular technologies of the present are part and parcel of this scene of human life? And, what does that mean for the subjective experiences of long distance hikers?

Moreover, by attending to the ways that a disengagement from the excesses of social life might be accomplished *without* the total removal of technology, we can begin to disentangle two often tightly correlated features of contemporary American social life: that ICTs are part of it and that people experience their lives as 'busy,' 'overwhelming,' 'intense,' or happening in 'fast forward.'

In this chapter, I will first show how computing technologies were still part of the thru-hiking experience, shaping social life, human interactions, and lived experience just as they shaped life for the families and workers we met in the first part of this dissertation. However, the specific ramifications

were different – the kinds of things that were and were not enabled by ICTs, in part because of the infrastructural limitations of the trail – there were no power outlets, and cell phone signals were intermittent.

In the next chapter, I discuss the ways that hikers were sometimes able to leverage both these constraints and the symbolic nature of the PCT and the long-distance hike as a way of changing their social relations. Nonetheless, ICTs were still often a point of inflection between on and off trail life, that required some negotiation. This negotiation was eased by the symbolic aspects of the PCT and the thru-hike – as a particular kind of culturally-understood place, and a worthwhile self-improvement endeavor, respectively.

## 11.2 my maps, my music, my everything

Leading up to the start of the thru-hike, I joined many of my fellow aspiring hikers in a Facebook group for the "PCT Class of 2013." This site allowed us to connect with each other and ask questions of former thru-hikers who frequented the page to offer up advice and trail wisdom. Numerous questions about smartphones and similar personal ICTs were intermixed with questions about resupply plans, what tent was the lightest and most well-suited to a PCT hike, and whether or not an ice axe would be needed in the low snow drought year.

Some aspiring hikers wondered if it really was a good idea to bring a smartphone out on the trail – related to aforementioned concerns about technology intruding on the sanctity of nature. However, previous years' hikers who checked in on the group page were generally quick to herald the benefits of these small computing devices for a long-distance hike. A list of eight reasons to carry an iPhone posted on this page summarized many of the reasons I would hear from hikers on my own travels over the next year: GPS tools and the Halfmile application; backups of map data, resupply information and contact lists; music and podcasts which, according to the poster, "saved my hike through burning hot, boring

NoCal;" the phone includes a "pretty great camera" that does not require extra cables and chargers; voice recorder for making notes, and remembering "the sounds of the woods;" maps application for navigating in trail towns; buying replacement gear and supplies online; and, lastly, Facebook, which the author expands upon thusly:

> You may be saying "What?" but, this year, info regarding fires, trail angels, mountain lions stalking campsites and angry hoteliers was able to travel up and down the trail in real time.

As previously mentioned, almost all of the hikers I met carried a smartphone on the trail[6]. Despite the sporadic cellular connectivity available on the trail[7], personal mobile ICTs were still commonplace and useful for a variety of activities.

Hikers used these personal computing tools as cameras, journals, maps, information sources, music players, and simply phones for calling home. For example, one hiker that I met and interviewed early on the trail described the set of digital technologies that she was using on a daily basis as such:

> I have been sharing whenever able on my Wordpress blog. That's been the most consistent thing, but not very consistent either, just whenever there's Internet available or a signal available. But also Instagram and some on Facebook. I'm using a SPOT just for family to know sort of where we are. That's different, but it does use – they get the email messages.

Echoing statements of other hikers I met, she described how the material form of her iPhone, in particular, made it well-suited to capturing her daily experiences with its built in camera and microphone.

> I have another camera too. … [but] **I've been using my phone more than I thought I would because it's right – I'm carrying it in this pocket [points to chest pocket on shirt]**.

[6] and several people who did not have a smartphone, carried an iPod touch – which, in any case, duplicates all of the relevant features available on an iPhone given that thru-hikers keep them in airplane mode almost all the time. Even when in "town" for a resupply while hiking the PCT, WiFi was sometimes easier to come by than a cellular signal in the small locales that were closest to the trail's route.

[7] Which caused difficulties for many apps designed in urban and suburban centers where any interruption in connectivity seemed unanticipated to the app's designers

> So it's right there. Plus then I have some photos to put in my blogs… [I also use it for] voice memos… just to remember a little thing here or there.

On airplane mode, she was finding her phone's battery to last a couple of days. Thus, in order to do all these things on her phone, she carried a solar panel on her backpack to allow her to charge it in between town stops:

> It [the solar panel] works pretty well. I've even had it where I've got this [solar panel] on the back of my backpack, and then my phone's sill plugged in in my pocket. Just so that I can take pictures even when I am having to charge it.

Another hiker I spoke with early in the trail similarly maintained daily postings to a Wordpress blog via her smartphone (she spent about an hour typing them each night from her tent), in addition to posting daily photos on Instagram. However, instead of using a solar panel to keep her phone powered up, she had specifically chosen a phone with replaceable batteries, as part of her preparation for her hike:

> To keep my phone charged – I picked the Samsung Galaxy S3 because the back comes off and you can replace the batteries. So, I just got three batteries [and charge them all up at every town stop] … So far, one battery on airplane mode lasts maybe around a day or a day and a half. … I shut it off at night, but otherwise during the day I leave it on.

Having a way to keep one's phone charged was important for more than just communication and photography. For many hikers, it was also an important motivational tool to help out on days when hiking had become boring or difficult.

Most hikers certainly took great pleasure in their experiences of the surrounding scenery and environment – to the point that many found it frustrating to communicate the majesty and awesomeness of these experiences to others off trail in their various blogs and other means of communication:

> I'm trying to do an entry [on my blog] every day. I think I'm still trying to get a feel for how to reflect on my blog. I feel like it's going to change a little bit, but I'm trying to at least do something each day to try to preserve some of the more spectacular moments. **Like when we saw the moon rise over the mountains the other night. It was like, how can I even write about that? How can i even express what that was like? Nobody is going to really get it**.

Despite such memorable moments and days on the trail, completing a thru-hike in a single season is also a significant mental challenge for many people. It requires continued physical exertion through days when one simply does not want to keep hiking. However, stopping for too long is not an option for those whose goal is to make it to Canada before the snow starts falling in Washington. Completing a thru-hike in between the late spring and early fall snowfalls on either end of the trail requires a sustained average pace of around eighteen miles a day – with higher actual mileage on most hiking days in order to account for some extra time needed when resupplying in town.

Inevitably, at some point, one will sprain an ankle or scrape a knee. In the beginning of the hike almost everyone has a good blister story. The trail can be physically painful, in ways that make continued walking simply unpleasant, and some people do leave the trail due to injury each year – often "overuse" injuries like severe shin splints that wouldn't heal even after several days of rest, or stress fractures in feet or ankles.

However, perhaps more challenging than physical injuries for many hikers, is the mental stress of continuing to hike day after day. Although the mountains of the west coast are certainly majestic, they have a way of becoming boring and mundane when one is spending every day walking through them. The mid summer emergence of mosquitoes tends to coincide with the arrival of uncomfortably hot temperatures for athletic exertion as well as the geographic transition from the dramatic vistas of the Sierra Nevada to the heavily logged and aesthetically repetitive pine forests of northern California right

around the midpoint of the trail 1300 miles in.[8] As a way of dealing with the emotional struggle, many hikers turned to techniques of distraction. I met one group of hikers, for example, who brainstormed movies or books that only one or two of the larger group had seen or read before. They would then spend their days hiking with that person recounting and describing the plot of the movie or book to the others. These reenactments and tellings were performed in much detail – such that a single book or movie might provide days worth of entertainment. More commonly, many hikers used mobile ICTs to listen to music or podcasts to pass the time in northern California, in particular. As one hiker reflected after the trail:

> I didn't hike with music in southern California just for fear of rattlesnakes and that kind of crap. And then **I hiked with it a little bit of music in the Sierras, on the shit mosquito days… You just put those [headphones] on and just zone out**. And I think part of that was that by that point I hadn't listened to music for a month or whatever. So that was like novelty plus. I wasn't using it as a crutch. It was more of a special thing. At least that's how I treated it until then, so **that made it [the hiking] go a lot better**.

Having this pick-me-up was important for many hikers to get through the parts of the trail that simply were not that enjoyable, and that someone would not otherwise hike, if they were not attempting to complete a continuous journey from Mexico to Canada:

> **I mean mosquitoes and heat, that was the worst. You know, Northern California – just – I would not do that again**. Like I wouldn't do it. That was shit.

[Interviewer: Yeah, I mean, when we were there it was like 104 degrees! The day we came into Castella. It wasn't just hot. It was like totally out of control.]

[8] This is not to say there are no beautiful sections or no awe inspiring mountains after the Sierra. It is just important to recognize that thru-hikers, who have been out for several months at this point, often get bored during this section, and I met a handful of hikers, who left the trail completely soon after completing the Sierra. Their specific reasons were varied, but most were in some way related to a sense of simply not enjoying the hike anymore.

> It sucked. **It sucked. And so days like that, I think I used podcasts even more than music in a way**. Because podcasts, that's the perfect time to listen to something educational because you have nothing distracting and **if you force yourself to pay attention to that than the miles just go away** … I had my headphones in a lot through northern Cali. But rarely in Oregon. And a couple times in Washington. Definitely.

Other hikers used music more generally, often to help power through the last few miles in a long day, to reach a scenic vista in time for a sunset, or to wake up in the morning – much the same way that people use music when going for a jog or making the morning commute more pleasurable.

Finally, all of the hikers quoted above used several information technologies specific to the PCT – GPS applications for finding one's location on the trail and various digital forms of what was previously called a "data book," a mileage based list of information about campsites, water sources, and resupply points. Thus, for many hikers, the smartphone took on the role of an essential piece of gear – as one hiker summarized, his smartphone was "my maps, my music, my everything."

The set of PCT-specific digital navigation and information technologies warrant a more in depth exploration as these particular tools significantly shaped the context of the thru-hike for all of the thru-hikers whom I met.

## 11.3 Halfmile & Guthook's PCT

I came across this particular sign (see Figure 11.4) mid-afternoon on July 13 while hiking through Lassen National Park in Northern California. The sign marks a T-intersection where the PCT meets a side trail, with which it will intersect again in a couple of miles to form a loop around either side of Boiling Springs Lake. Like many other junctions on the PCT, it is fairly unclear from the signage alone which way to


Figure 11.4: Directional sign on the PCT in Lassen National Park. I took this photo from the trail, looking north. The sign is located at the junction marked TR1345 on the map shown in Figure 11.5, and the side trail rejoins the PCT approximately 2 miles north, at the point labeled TR1347.

proceed to continue hiking on trail.[9] The sign simply conveys that one can reach some other point, approximately 4 miles away, by apparently going either left or right. As such, and much to the chagrin of the trail maintainers (see Hendricks 2013), the signs are often augmented by presumably well-meaning individuals with PCT-specific arrows.[10] On this particular sign, someone had drawn in the dust with their finger "PCT →" on the lower right corner; on the lower left corner, someone [else] had stuck a piece of tape on the sign, labeled with "← Halfmile and Guthook's PCT." The graffiti on the sign was striking to me, because I after walking over half the length of the PCT by carefully following Halfmile's

[9] Interestingly, this is somewhat intentional as the Pacific Crest Trail Association (PCTA) explains in Hendricks (2013). In part, the official Comprehensive Plan for the PCT states that "Signs on the Pacific Crest Trail will not have the identifying words 'Pacific Crest National Scenic Trail' or the acronym 'PCNST.'" A different kind of sign – called a "reassurance marker" which consists of the PCT logo and is hung at approximately eye level, usually on trees – is meant to mark the route of the PCT. According to this guide, posted directional signs like the one pictured above should only contain names of intersecting trails or destinations lying ahead. Furthermore, as Hendricks (2013) writes, "The PCT, routed as much as possible through designated Wilderness, was envisioned to provide a more primitive trail experience, one in which the traveler is expected to be self-reliant in route finding. Today, because the PCT is so well-established, blazers [frequently-placed reassurance markers] are rarely used and some trail managers recommend removing the existing ones in order to de-clutter the trail" (5–6).

[10] In addition to thru-hikers, who are interested almost exclusively in where the PCT goes, the trail is a major corridor in this area, and is marked with a bold and separately colored line on the official National Geographic maps used by most day hikers and weekend backpackers. Thus, for a majority of people hiking in the area, the PCT is either a trail that they are trying to follow, or a key landmark around which they are trying to orient themselves. The comparative respect and reversibility with which this sign was augmented (writing in dust and on an attached piece of tape) is the only thing that marks it as particularly unusual. More typically, signage additions (or corrections, as is sometimes the case) are etched more permanently with rocks or knives, or written with a permanent marker.

maps and smartphone app, I found it hard to imagine what *other* PCT might exist other than Halfmile's.[11] As the Halfmile website, pctmap.net, puts it:

> Halfmile's Pacific Crest Trail maps are the most current and accurate Pacific Crest Trail maps available and widely used by thru-hikers and section hikers. Halfmile and many other volunteers have spent months with a GPS logging the trail and marking PCT landmarks from 2007 – 2014.

It is Halfmile's maps that the PCTA recommends first to hikers[12] and it is Halfmile's maps that Yogi, author of the historically definitive guide to preparing for a thru-hike "Yogi's PCT Handbook," also recommends.[13]

I got my own printed Halfmile maps several months before the start of the journey. An aspiring thru-hiker – who I did not know at all – started a thread on the Class of 2013 Facebook page for people to commit to buying maps as a group. He then volunteered to get them printed in bulk at a local printshop in Portland that was familiar with printing the Halfmile maps for hikers and would offer a group discount. So, I sent, via PayPal, $35 to a complete stranger with no guarantee of maps actually being delivered, but no surprise to me, they showed up several weeks later at my office. This kind of blind trust and assumed community and camaraderie – with strangers whose only qualification was that they (said that they) were also walking from Mexico to Canada – would come to characterize interactions with other hikers throughout the rest of the hike more generally.

Halfmile also – as of 2012 – offered a companion smartphone application that integrated all the data points on his maps (campsites, water sources, side trails) with the GPS features of contemporary smartphones. I had previously hiked the Appalachian Trail (AT) in 2008, using a printed "data book" as my

[11] "Guthook" – also mentioned on the sign graffiti was the author of a smartphone app that competed with Halfmile's app and maps. Like Halfmile, his maps were based on carefully logged, recent GPS coordinates. However, because he charged a significant price for the app, and Halfmile offered his maps and smartphone app for free, few people I knew used it. For the purposes of this discussion, the differences are probably inconsequential.

[12] see pcta.org/discover-the-trail/maps-and-guidebooks/

[13] see yogisbooks.com/pacific-crest-trail

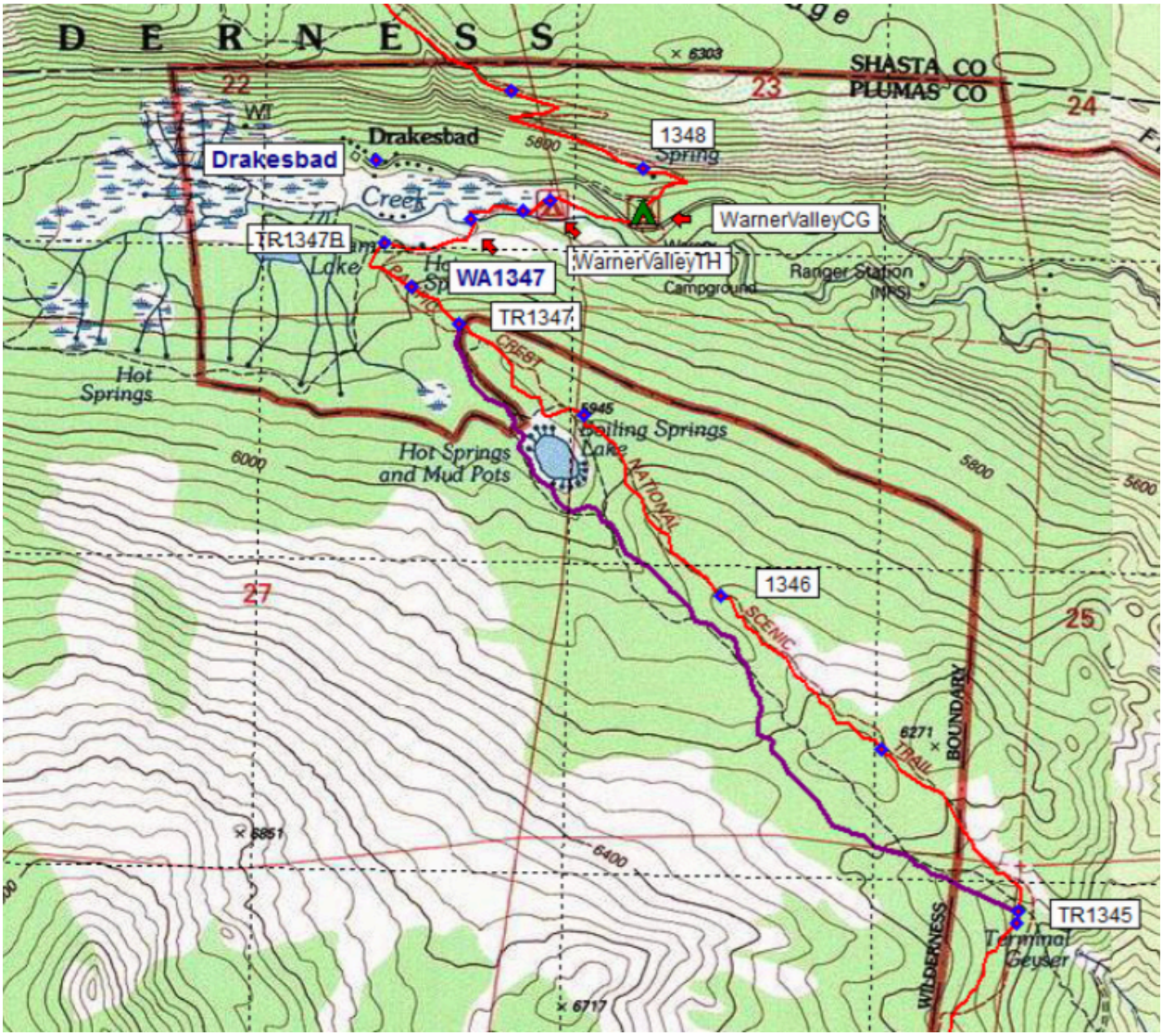



Figure 11.5: The section of Halfmile's map for the trail around the sign shown in Figure 11.4. Source: https://www.pctmap.net/.

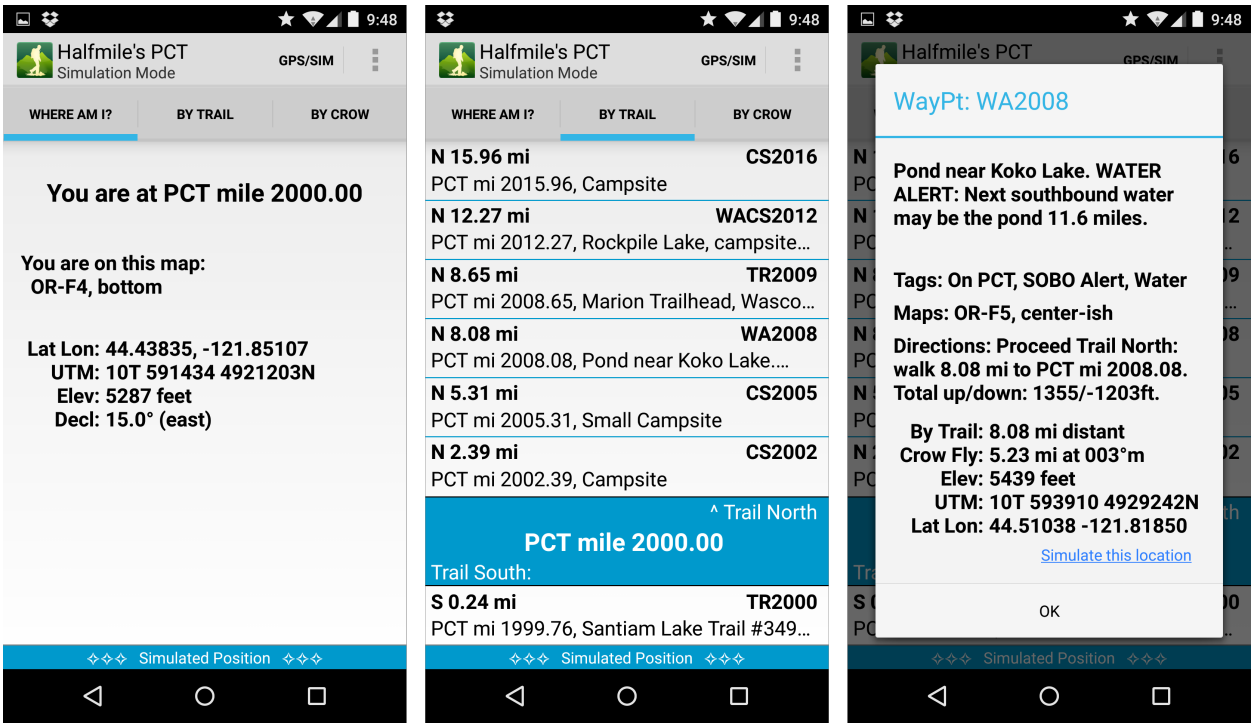
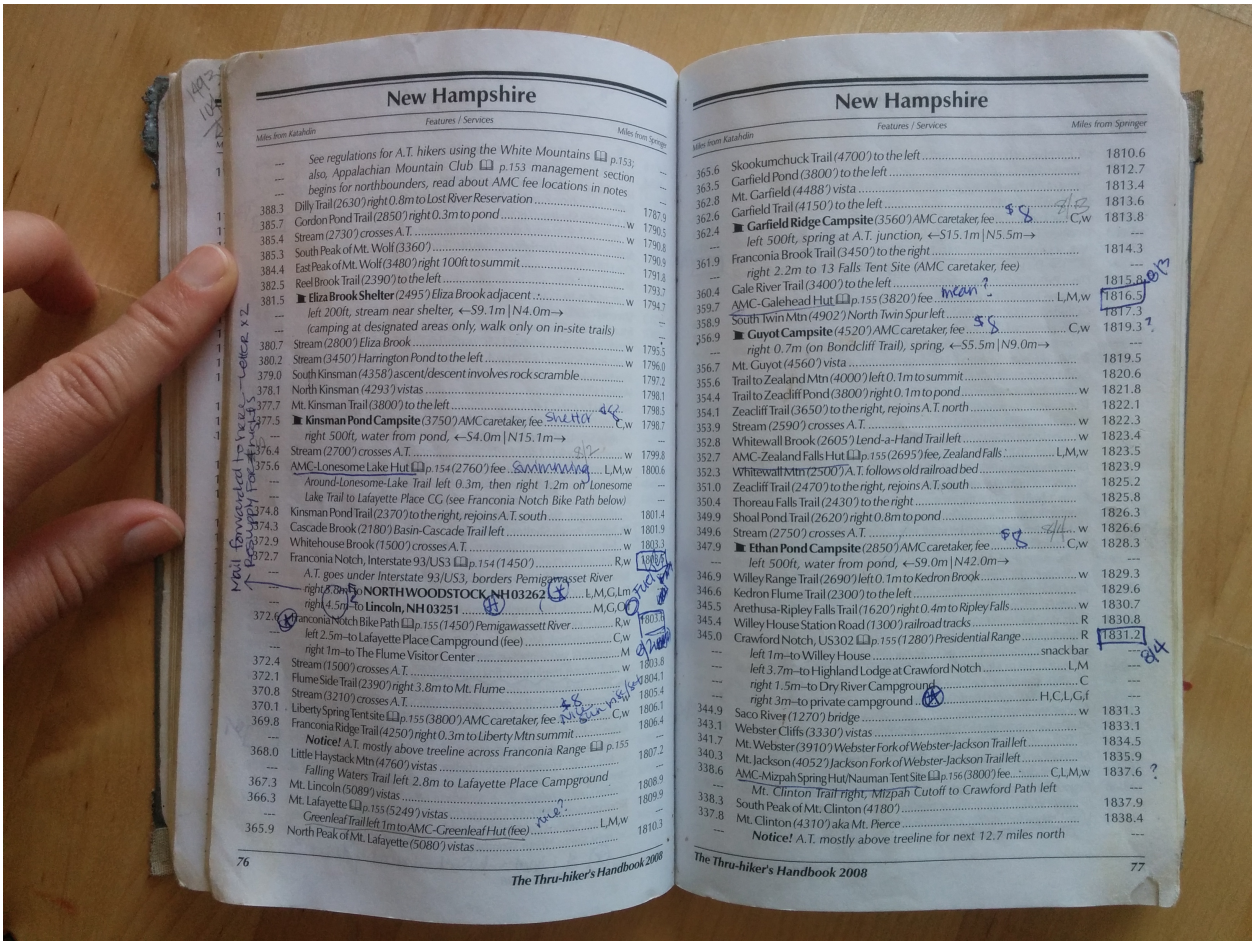



Figure 11.6: A screenshot of the Halfmile smartphone data book app.

primary guide – on the well-marked and well-trodden trail, this simple list of mileage points proved more useful than any maps I had used on previous shorter hikes (and for better or worse I ultimately did not carry any maps when I hiked the AT). The data book listed water sources and camping sites – all the things that Halfmile's app did. However, using the data book required that I try to guess where I was on the trail based on how many minutes since I'd passed an easy-to-identify landmark; it required a lot of mental calculation on my part to figure the distances between things; and I was constantly flipping back and forth between the descriptive details located in the back half of the book, and the mileage list in the front (see Figure 11.7). By contrast, the Halfmile app could show me exactly where I was on the trail using the GPS tool on my smartphone; it did all the calculations for me; and simple pop-up boxes provided more detail about any particular location on the trail. As many hikers described, the app's affordances impacted the ways that they approached navigating on the PCT. When they thought they might be lost – or the trail signage was unclear – they would simply walk a few yards ahead and then "just check halfmile" and see if it located them on or off the trail.



## New Hampshire

| Miles from Katahdin | Features / Services | Miles from Springer |
|---|---|---|
| --- | *See regulations for A.T. hikers using the White Mountains* 📖 *p.153; also, Appalachian Mountain Club* 📖 *p.153 management section begins for northbounders, read about AMC fee locations in notes* | --- |
| --- | | --- |
| 388.3 | Dilly Trail *(2630')* right 0.8m to Lost River Reservation | --- |
| 385.7 | Gordon Pond Trail *(2850')* right 0.3m to pond | 1787.0 |
| 385.4 | Stream *(2730')* crosses A.T. w | 1790.5 |
| 385.3 | South Peak of Mt. Wolf *(3360')* | 1790.8 |
| 384.4 | East Peak of Mt. Wolf *(3480')* right 100ft to summit | 1790.9 |
| 382.5 | Reel Brook Trail *(2390')* to the left | 1791.8 |
| 381.5 | ⛺ **Eliza Brook Shelter** *(2495')* Eliza Brook adjacent w | 1793.7 |
| --- | *left 200ft, stream near shelter, ←S9.1m \| N4.0m→* | 1794.7 |
| --- | *(camping at designated areas only, walk only on in-site trails)* | --- |
| 380.7 | Stream *(2800')* Eliza Brook | --- |
| 380.2 | Stream *(3450')* Harrington Pond to the left w | 1795.3 |
| 379.0 | South Kinsman *(4358')* ascent/descent involves rock scramble w | 1796.0 |
| 378.1 | North Kinsman *(4293')* vistas | 1797.2 |
| 377.7 | Mt. Kinsman Trail *(3800')* to the left | 1798.1 |
| 377.5 | ⛺ **Kinsman Pond Campsite** *(3750')* AMC caretaker, fee C,w | 1798.5 |
| --- | *right 500ft, water from pond, ←S4.0m \| N15.1m→* | 1798.7 |
| 376.4 | Stream *(2700')* crosses A.T. w | --- |
| 375.6 | AMC-Lonesome Lake Hut 📖 *p.154 (2760')* fee L,M,w | 1799.8 |
| --- | *Around-Lonesome-Lake Trail left 0.3m, then right 1.2m on Lonesome Lake Trail to Lafayette Place CG (see Franconia Notch Bike Path below)* | 1800.6 |
| 374.8 | Kinsman Pond Trail *(2370')* to the right, rejoins A.T. south | --- |
| 374.3 | Cascade Brook *(2180')* Basin-Cascade Trail left w | 1801.4 |
| 372.9 | Whitehouse Brook *(1500')* crosses A.T. w | 1801.9 |
| 372.7 | Franconia Notch, Interstate 93/US3 📖 *p.154 (1450')* R,w | 1803.3 |
| --- | *A.T. goes under Interstate 93/US3, borders Pemigawasset River* | 1803.8 |
| --- | *right 4.5m–to* **NORTH WOODSTOCK, NH 03262** L,M,G,Lm | --- |
| --- | *right 4.5m–to* **Lincoln, NH 03251** M,G,C | --- |
| 372.0 | Franconia Notch Bike Path 📖 *p.155 (1450')* Pemigawassett River R,w | 1803.8 |
| --- | *left 2.5m–to Lafayette Place Campground (fee)* C,w | --- |
| --- | *right 1m–to The Flume Visitor Center* M | --- |
| 372.4 | Stream *(1500')* crosses A.T. w | 1803.8 |
| 372.1 | Flume Side Trail *(2390')* right 3.8m to Mt. Flume | 1804.1 |
| 370.8 | Stream *(3210')* crosses A.T. | 1805.4 |
| 370.1 | Liberty Spring Tent site 📖 *p.155 (3800')* AMC caretaker, fee C,w | 1806.1 |
| 369.8 | Franconia Ridge Trail *(4250')* right 0.3m to Liberty Mtn summit | 1806.4 |
| --- | ***Notice!*** *A.T. mostly above treeline across Franconia Range* 📖 *p.155* | --- |
| 368.0 | Little Haystack Mtn *(4760')* vistas | 1807.2 |
| --- | *Falling Waters Trail left 2.8m to Lafayette Place Campground* | --- |
| 367.3 | Mt. Lincoln *(5089')* vistas | 1808.9 |
| 366.3 | Mt. Lafayette 📖 *p.155 (5249')* vistas | 1809.9 |
| --- | *Greenleaf Trail left 1m to AMC-Greenleaf Hut (fee)* L,M,w | --- |
| 365.9 | North Peak of Mt. Lafayette *(5080')* vistas | 1810.3 |



## New Hampshire

| Miles from Katahdin | Features / Services | Miles from Springer |
|---|---|---|
| 365.6 | Skookumchuck Trail *(4700')* to the left | 1810.6 |
| 363.5 | Garfield Pond *(3800')* to the left | 1812.7 |
| 362.8 | Mt. Garfield *(4488')* vista | 1813.4 |
| 362.6 | Garfield Trail *(4150')* to the left | 1813.6 |
| 362.4 | ⛺ **Garfield Ridge Campsite** *(3560')* AMC caretaker, fee C,w | 1813.8 |
| --- | *left 500ft, spring at A.T. junction, ←S15.1m \| N5.5m→* | --- |
| 361.9 | Franconia Brook Trail *(3450')* to the right | 1814.3 |
| --- | *right 2.2m to 13 Falls Tent Site (AMC caretaker, fee)* | --- |
| 360.4 | Gale River Trail *(3400')* to the left | 1815.8 |
| 359.7 | AMC-Galehead Hut 📖 *p.155 (3820')* fee L,M,w | 1816.5 |
| 358.9 | South Twin Mtn *(4902')* North Twin Spur left | 1817.3 |
| 356.9 | ⛺ **Guyot Campsite** *(4520')* AMC caretaker, fee C,w | 1819.3 |
| --- | *right 0.7m (on Bondcliff Trail), spring, ←S5.5m \| N9.0m→* | --- |
| 356.7 | Mt. Guyot *(4560')* vista | 1819.5 |
| 355.6 | Trail to Zealand Mtn *(4000')* left 0.1m to summit | 1820.6 |
| 354.4 | Trail to Zeacliff Pond *(3800')* right 0.1m to pond w | 1821.8 |
| 354.1 | Zeacliff Trail *(3650')* to the right, rejoins A.T. north | 1822.1 |
| 353.9 | Stream *(2590')* crosses A.T. w | 1822.3 |
| 352.8 | Whitewall Brook *(2605')* Lend-a-Hand Trail left w | 1823.4 |
| 352.7 | AMC-Zealand Falls Hut 📖 *p.155 (2695')* fee, Zealand Falls L,M,w | 1823.5 |
| 352.3 | Whitewall Mtn *(2500')* A.T. follows old railroad bed | 1823.9 |
| 351.0 | Zeacliff Trail *(2470')* to the right, rejoins A.T. south | 1825.2 |
| 350.4 | Thoreau Falls Trail *(2430')* to the right | 1825.8 |
| 349.9 | Shoal Pond Trail *(2620')* right 0.8m to pond | 1826.3 |
| 349.6 | Stream *(2750')* crosses A.T. w | 1826.6 |
| 347.9 | ⛺ **Ethan Pond Campsite** *(2850')* AMC caretaker, fee C,w | 1828.3 |
| --- | *left 500ft, water from pond, ←S9.0m \| N42.0m→* | --- |
| 346.9 | Willey Range Trail *(2690')* left 0.1m to Kedron Brook w | 1829.3 |
| 346.6 | Kedron Flume Trail *(2300')* to the left | 1829.6 |
| 345.5 | Arethusa-Ripley Falls Trail *(1620')* right 0.4m to Ripley Falls w | 1830.7 |
| 345.4 | Willey House Station Road *(1300')* railroad tracks R | 1830.8 |
| 345.0 | Crawford Notch, US302 📖 *p.155 (1280')* Presidential Range R | 1831.2 |
| --- | *left 1m–to Willey House* snack bar | --- |
| --- | *left 3.7m–to Highland Lodge at Crawford Notch* L,M | --- |
| --- | *right 1.5m–to Dry River Campground* C | --- |
| --- | *right 3m–to private campground* H,C,L,G,f | --- |
| 344.9 | Saco River *(1270')* bridge w | 1831.3 |
| 343.1 | Webster Cliffs *(3330')* vistas | 1833.1 |
| 341.7 | Mt. Webster *(3910')* Webster Fork of Webster-Jackson Trail left | 1834.5 |
| 340.3 | Mt. Jackson *(4052')* Jackson Fork of Webster-Jackson Trail left | 1835.9 |
| 338.6 | AMC-Mizpah Spring Hut/Nauman Tent Site 📖 *p.156 (3800')* fee C,L,M,w | 1837.6 |
| --- | *Mt. Clinton Trail right, Mizpah Cutoff to Crawford Path left* | --- |
| 338.3 | South Peak of Mt. Clinton *(4180')* | 1837.9 |
| 337.8 | Mt. Clinton *(4310')* aka Mt. Pierce | 1838.4 |
| --- | ***Notice!*** *A.T. mostly above treeline for next 12.7 miles north* | --- |



Figure 11.7: A photo of the paper data book I used on the AT in 2008.

### 11.3.1 The Water Report


Figure 11.8: My paper copy of the water report, just before being discarded in Independence, CA. This photo is titled in my Flickr album: "bye bye water report. you were a good friend for the first 700 miles."

Upon reaching Independence, California – a small town on US Highway 395 on the eastern side of the Sierra Nevada mountain range, and a popular resupply point for hikers traversing the wildernesses of Sequoia, Kings Canyon, and Yosemite National Parks – I finally threw away my water report. My most recent paper copy of this document (pictured above) was dirty, hard to read, creased into a small rectangle, and worn into a slightly curved shape after having been carried in the small hip-belt pocket of my backpack for several weeks. Although I hadn't quite been ready to part with the document a week earlier – when I had first exited the desert section of the PCT, and entered the water-rich Sierra at the fabled Kennedy Meadows (mile 700) – I hadn't used the water report at all since, and it had the transition, and since passing Cottonwood Pass at mile 750, the water report no longer existed. So, in Independence,

I finally decided that I should really just dispense with it. I took this photo of the folded up document on the bed of the hotel room before tossing the disintegrating piece of paper into the bathroom trashcan. When later uploading this photo to my Flickr account, along with other images from the journey, I titled it "bye bye water report. you were a good friend for the first 700 miles."

Both my comment on the photo later, and the fact that I felt the need to take a picture of a wadded up piece of paper before I could bring myself to throw it away reveal the personal importance of the 'water report,' which might otherwise be described as a spreadsheet printed out from the Internet. This little piece of paper – and several predecessors to it, as well as a digital backup copy that I cached on my smartphone at every opportunity – had been an integral part of my moment-to-moment experience on the PCT for the first third of my journey. We will return to the significance of this paper-computer-hybrid information artifact for my experience of the first 700 miles of the trail momentarily. But first, a brief history and description of the thing.

I had first heard about 'the water report' well over a year before. In mid April of 2012, in preparation for the 2013 thru-hike, my partner and I attended the "annual day zero pct kick off" (abbreviated ADZPCTKO, sometimes pronounced ad-zah-pah-sit-co, or referred to more simply as "kick off"). Kick off has been held annually since 1999 at Lake Morena – a small southern California county park with a large campground conveniently located on the PCT, just 20 trail miles (or 1-2 days) from the southern terminus where most long-distance hikers begin their journey (see Riess, Hummel, and Reynolds 2002, for a brief history by the event's co-founders). The event is organized by former thru-hikers and other members of the PCT community, is meant to welcome the new year's class of hikers to the trail, to provide an opportunity for previous years' hikers to share their knowledge with these newbies, and, to more generally, build camaraderie and community. In the words of its founders, "It's all about kindness. That is the ADZ, kindness. Humans being kind to other humans. Nothing more and nothing less."[14] Each year, members of previous years' thru-hiking classes return to the desert to rekindle friendships and share memories – like any reunion event. Traditionally, a "class video" has been made at the end of

[14] See the ADZPCTKO website's about page, as of November 5, 2015, this is available at http://adzpctko.org/about/default.html

each thru-hiking season which compiles photos – and more recently videos – taken by members of that year's long-distance hiking cohort. At the next years' kick off, the video is debuted.

In addition to this camaraderie, one of the main features of the event is knowledge sharing. The day is organized like a mini-conference with panels and workshops on different things a thru-hiker might need to know. Having backpacking experience primarily on the forested & river-covered mountain ranges of the US East Coast, of particular interest to me, in 2012, were the panels about how to hike in the desert. It was in one of these panels that I first heard about the water report. It had a long history dating back to reports shared by a PCT celebrity, Meadow Ed, who was known, in particular, for hosting hikers in Kennedy Meadows for many years. In current practice, the water report is a crowdsourced information resource.[15] Its current existence is facilitated by, though not predicated on, the Internet, taking the form of an online Google Docs spreadsheet which can be edited by a limited number of people, but available for anyone to view. Updates can be given to the editors via email, voice mail, and SMS.

Many hikers I met in 2013 cached the report on their smartphones – either by downloading a PDF version, or through the use of a complementary smartphone app, PCTHYOH, which had been created solely for the purpose of caching files: from the water report to current weather and fire reports.[16] For hikers on the trail, maintaining an up to date copy of the water report was a crucial aspect of being responsibly prepared for the journey – reinforced by the easy availability of paper copies of the report in local town stops. Local libraries – popular with hikers because of the public Internet they usually have – and the homes of trail angels often had recent copies pre-printed for hikers to pick up.

Regardless of what material form it took for any given hiker, this information artifact structured the days of almost everyone on the trail. On Day 14 of my hike, my partner and I stopped at the junction to a side trail down to a spring for lunch and a refill. I wrote in my journal, at the time:

[15] See http://pctwater.net

[16] The creator and maintainer of this app passed away in 2014. Links are no longer available to the Apple or Android app stores.

> Everyone here had much debate about where to fill up. From the highway and roadside café, it's ~6 miles to a spring that is ~1 mile off the trail; then another ~4 miles to this spring (also ~1 mile off); then 8 more miles to the first on-trail source – a creek that is just 2 miles before the Devil's Slide Trail [The trail that leads just 2.5 more miles into Idyllwild, a planned town stop for just about everyone].

The excessive notation of just how far it is between each spring, and just how far off trail each option is, gives some sense of just how occupied I had been with the water report all day. All of us new hikers were obsessed with the thing – especially on a day like this where all the sources required extra side trips just to fetch water – an extreme annoyance for people who were trying to push their mileage (to prove that they could, to stay on schedule, to get to town faster) while hiking through nasty southern California sunshine. We stopped at every trail crossing to debate with other hikers about which spring was best to visit, which ones we could skip, which ones were running well, how much water we had left, could we make it to the next one, how much to fill up so that we would make it comfortably to town.

In the midst of my writing about this experience at our lunchtime water break, a couple of day hikers came up from another side trail that connected with a nearby parking lot. They said that they were heading down to the spring as the 'destination' for their afternoon jaunt – and had not the slightest idea if it was running or not!

For thru-hikers, this side trail to a spring was encountered within a context of calculated tradeoff against having to get water elsewhere. The existence of this particular always up-to-date information resource makes that calculation possible and reliable. Yet this information infrastructure that seems to determine trail conversations, as well as the locations of campsites and lunch breaks, is totally invisible to non-thru-hikers.

By the time I encountered the sign graffiti directing me to either "Halfmile's PCT" or some strange other PCT, I had become fully normalized to the routine of structuring my day through these mile-points and markers. Because Halfmile was in charge of the water report and used the mileage from his own maps

for identifying the location of the water sources, his mile-measurements were generally taken as a sort of 'gold standard' for one's location. One might say that they're camping at a campsite "near mile 1348 tonight" and unless any disclaimer was given – "that's according to the Guthook app" – it was assumed that you meant Halfmile's mile 1348. Regardless of any discrepancies in measurement, everyone shared a language of mile points as waypoints. However, when I first began the hike, I found the language of mileage to be confusing. I wrote in my notebook one evening during the first few weeks:

> Everyone refers to campsites and water sources by mile number. I'm so confused. I always think of them by name. Is this a result of Halfmile's maps?

I spent a lot of time in those early weeks confused about what places people were referencing, but by day twenty-seven of the hike, I had become thoroughly enculturated into seeing the trail through mile-points – and Halfmile's points, in particular. On this particular day, when I stopped for lunch – at a designated water source – I ran into someone who said that they were a friend of another hiker who I had met earlier in the morning. This friend did trail maintenance in the area, and was out that day looking to meet up with his friend and join him for the afternoon's hike. I wrote in my journal that talking with him was another reminder of the different knowledges about the trail:

> He kept referring to places by names that we'd never heard of! Glued to our water reports, and looking just from one water stop to the next, we rarely break out the topo maps to see the names of features anymore. We just knew we camped on a ridge last night somewhere above Islip saddle, which was the name of the road crossing a couple miles before the place we stopped for the night. It took us quite a while in our conversation with him to realize that this was the same place he was talking about when he kept asking us if we had enjoyed the views at 'Mt Wiliamson'!

On another lunch break early in the hike – also at a designated water source – someone asked if anyone knew how far we were from a road crossing coming up ahead. Without looking it up, someone else

– who had clearly internalized the location of the current water source, and the location of the road ahead – said, “7.4? 7.5?” Jokingly, someone else pulled out a phone and said, “Well, actually, 7.45.”

Knowing who Halfmile was, using his maps, using the water report, learning the language of mileposts, was a part of not only being responsible – not dying for a lack of water or being the cause of an expensive search and rescue mission – but also of simply becoming a member of the thru-hiking community.

## 11.4 ICTs in place on the PCT

In this chapter, I have shown that ICTs are an important part of the context for the daily lives of thru-hikers on the PCT. Although the specific use cases of computing differ across these contexts, the characteristics of the relationship between computing and social life mirror the ways that technologies were an important context of life for families and workers in suburban southern California.

We see, again, that the experience of computing exceeds isolated moments of use, and that the potentials it offers up indirectly shape other activities and moments of life. For example, tools like the water report served to structure social interactions on the trail, well outside moments of active use. The potential to simply “check Halfmile” when hikers thought that they might be off trail meant that they did not have to be always aware or certain of their location – not unlike Tom, jumping into his car without first finding directions to a soccer game (see section 8.2, Tom’s iPhone: It’s a smartphone world). We can also see the way that ICTs are part of the ground from which culture and values are produced. Knowing about the existence of Halfmile maps and the Water Report was an important part of *being* a thru-hiker. To not know about them both rendered one as an outsider, and was looked down upon as being irresponsible. Thus, ultimately, the use of computing is again obligatory for full and appropriate participation in the social life of the PCT.

In the next chapter, I explore some of the ways that communication technologies, in particular, were also a point of inflection between hikers’ “on trail” and “off trail” life. I consider why some hikers

– even while on a five-month journey through the wilderness wished to be even *more* disconnected. I argue, however, that the infrastructural limitations of the PCT coupled with the site of the PCT as an event, allowed for a significant separation between the two realms of on and off trail, evincing a disengagement from many aspects of hikers off-trail life.

# Chapter 12

# Context Shifts: Constrained Computing and a Separation in Place

In this chapter I examine what constituted the context shift that marked the PCT experience as distinct from hikers' "off trail" lives. I show that ICTs were sometimes felt as a point of inflection between on and off trail life, much like in the case of workers and families in southern California where ICTs were part of practices which bridged the realms of 'work' and 'home' and symbolic of work, even when not in active use. However, I argue that on the PCT, the infrastructural constraints – of lacking power and cellular access – as well as a broad cultural recognition of the PCT as a place distinct from "the real world," facilitated hikers' achievements of a disengagement from their off-trail social lives, even without requiring a full disconnection from ICTs.

## 12.1 I don't like the outside world intruding on my trail life

When I interviewed Sam, the thru-hiker quoted in the previous chapter who described his iPhone as his "everything," he had just finished a third long-distance hike. At a small cafe in Washington, he re-

flected about his experience on the PCT – and several prior long distance hikes. On the Surface, Sam's life appeared very different from that of any of the working professionals I described in the first part of this dissertation. Their responsibilities centered on taking care of their family, home, and clients. By contrast, Sam told me about how his life on the trail represented a freedom from all of these things. Although he had once been a husband, white collar worker, and homeowner, he was now single, without many material possessions much less a home, and worked only seasonally in between long hikes. Despite the challenges of this lifestyle – of "scraping by on eight dollars an hour" – he found freedom and security in his independence. "My decisions aren't affecting anyone else. I'm gonna be fine."

Yet, in striking ways, Sam's talk about his iPhone often echoed the feelings of people like Mark Davis, who we met in Chapter 5. Sam described his iPhone as something which brought "intrusions" into his life on the trail. The iPhone seemed to be a point of inflection where a desired separation between his "off trail" and "on trail" life was threatened:

> When I'm in town, you know, I don't want to deal with the phone. And obviously I don't want to deal with it when I'm on trail. **I hate it when I have to get my phone out and make a call or whatever. It's horrible.** … Is it like calling my parents to check in, you know? Or is it having to deal with you know a gear vendor about some piece of gear that's falling apart? Or ordering shoes? It's like that's not what I want to be doing.

Despite these frustrations associated with his iPhone, in the course of a nearly three-hour interview, neither he nor I could think of meeting a single person on the trail who hadn't brought some kind of phone along. He did recall meeting (just) one hiker who brought a "dumb phone" along, instead of the more typical Android or iPhone device. In recalling this, Sam said to me, "I *wish* I could be that disconnected."

Much like a working parent struggling with the intrusion of work emails around a family dinner table, Sam saw the intrusion of his "off trail" social life to be troublesome in the space of his thru-hike. He felt pressure from his family to "text them periodically," but explains that "I was really bad about that." As

he explained further, “I just don’t want to deal with any of that. I don’t want that stuff intruding in my life on the trail… I don’t like the outside world intruding on my trail life I guess is what it comes down to.”

Like many other (but not all) hikers I met, his time on the trail was as much about being out of mainstream American society as it was about being in the mountains. Both symbolically and materially, the iPhone was a point of inflection where a neat separation between his “off trail” and “on trail” life was threatened. It was an object through some of the obligations and ties of his off-trail social life might find a way to reach him during the 5 months of the hike – from friends and family wanting to check in on him to more mundane trail-related chores that had to be accomplished in a town stop, like calling a gear manufacturer about replacing an item that wasn’t holding up to the rigors of thru-hiking. The phone, of course, also represented much more than just these off-trail “intrusions,” as he called them. In imagining a “dumb phone” as a less connected alternative, it’s clear that his unease with his iPhone were about much more than just the communication that he might conduct through it.

Although smartphones were noticeably present on the PCT, there are many periods of “non-use” woven into the daily routines of hikers. As was the case for almost all of the hikers who I met on the trail, Sam’s iPhone was almost always within easy reach while hiking. In addition to functioning as a communication device, it was also his music, maps, and camera. However, it was hardly something he was looking at all the time. Even when turned on, his phone was usually kept in airplane mode, to conserve battery and prevent the phone from searching for a signal that it is unlikely to find reliably.

For Sam, the limited use that was forced by the infrastructural limitations of the trail – taking a photo is possible, immediately posting it on Facebook is not, receiving a call or SMS is punctuated by town stops and moments of turning on the phone to look for a signal – was less purposeful or totalizing than the kind of technological arrangements that people like Julie and Mark enacted by leaving their phones behind before heading out. However, it still made for a kind of less-than-full-use, and he only attended to the phone sporadically throughout the day.

The trail as a culturally understood place – a part of the wilderness, a place Americans have long understood as a site of respite both from modern technologies and modern civilization – allowed him to have a fairly legitimate excuse, to be "really bad about that" when it came to calling and texting family and friends back home.

The trail, however, was not a place of total disconnection – from social life or from technology. When I asked whether he ever communicated with other thru-hikers, he responded, without hesitation, "Oh, yeah. Yeah, sure, absolutely." And, when I asked if *that* felt intrusive, he responded quickly,

> No. It doesn't. And we did that a lot. We were texting [a friend] and [another friend], 'Hey where are you guys at?' And [another friend] and I, we didn't hike together for [several weeks] and we decided to get back together. So, text message. 'Hey. Where ya at?'

With his fellow thru-hikers, he carried out the same kinds of short interaction patterns generally associated with text messaging typical of coordination in daily life – finding out about others locations, making plans to meet up on an upcoming town stop or at a particular location on the trail. Such communication with other hikers, it seemed, wasn't stressful at all, "because its other trail people. It's not outsiders, you know?"

As Sam's story clearly illustrates, the PCT as a place comprised an alternative social life, complete with its own set of norms, boundaries of inclusion, and so on. Constructing and keeping up this separation required varying degrees of more and less active work by thru-hikers.

### 12.1.1 I broke my no internet on the trail rule

When I first met Carrie, she told me that she was hoping to break a Facebook addiction while on the trail. However, this did not mean totally abstaining from Facebook use. Instead, it was about leveraging the setting of the hike to constrain her use. For example, describing a recent town stop, she told me that

she "just checked our hike page[1], and the PCT group"[2] and she was happy about that. What concerned her about her Facebook usage was something that she felt happened when she was off the trail, and would take away from the experience of hiking: "I would totally get sucked in, be sitting there for two hours on Facebook."

For Carrie, then, her concern with Facebook was not strictly about not using it, nor about attempting to enact a totalizing separation between her on and off trail life. Maintaining a blog and keeping up some connections to her friends and family back home while she hiked was really important to her. However, the act of hiking the trail provided a singular activity that she felt justified and clear about wanting to focus on. Although she wanted to maintain some relationship with others' through Facebook, she also clearly prioritized the hike – and the people who were immediately a part of that experience – as more important in the moment than anything that someone else was sharing on Facebook. The trail provided the opportunity to mark clear boundaries, and cut off relations – ultimately without the risk of too much alienation from the social realms to which she would return after the hike. Unlike Thurston (2013) (see Chapter 9) who hired a "chief of staff" to at least keep an eye on his Facebook page and email while he was on his 25 day detox, and worried about others perceiving his non-responsiveness as "rude" or "unprofessional" the scene of the hike as a place in nature, made Carrie's separation from the relationships that she might otherwise maintain through Facebook acceptable, even laudable – both to others, and to herself. By contrast, for the workers we met in the first part of this dissertation, a clear prioritization was hard to achieve. What was more important in any given moment – finishing a report that a friend-colleague was waiting on? cooking dinner for the kids? cleaning up the house? getting some exercise? reading a book?

In addition to limiting her Facebook use while stopped in towns for a resupply, she had also made a plan to not use the internet features on her smartphone while out on the trail hiking. Thus, she had planned to keep the phone in airplane mode not only to conserve battery, but also to demarcate the trail as a

[1] She and a hiking partner had set up a Facebook group for friends and family to follow along, using it much like a blog.

[2] The class of 2013 Facebook page where information about water sources, fires, and other timely information was shared among fellow thru-hikers

separate place. A few weeks later, we crossed paths again on the trail, and ended up sharing a campsite located on top of a small knob with a view down to a valley below. Recalling our prior conversation about my research, she volunteered over dinner, "I broke my no Internet on the trail rule."

I replied saying, "no big deal. I killed my battery texting my mom today"[3]. We laughed over this together, and she went on to explain what motivated her rule breaking. She told me that she had been frustrated with the Wordpress app that she used for blogging. As I had experienced myself and heard from other hikers, it was notorious for losing pictures in draft mode, and generally misbehaving in unpredictable ways when it had a non-continuous connection. She explained that since we were camped up on this high mountain, she thought she might be able to get a signal – and she did, which meant that she successfully finished her blog post for friends and family back home, and mostly refrained from using any other features of the device, although notifications from apps like Instagram and the receipt of new text messages were hard to ignore completely.

Although cell service was somewhat easy to come by in the first week of hiking, it was also easy – as I had learned that day – to drain a battery in only a few hours searching for service that did not exist. Thus, out of pragmatism often more so than any ideological conviction, most hikers kept their phones in airplane mode a vast majority of their time on the trail.

A side effect of keeping one's phone in airplane mode – in addition to losing blog posts that had been painstakingly typed out on a smartphone keyboard, or, less traumatically, the occasional Instagram upload – was that all of the information about emails and SMS messages and so forth would collect in pools of notifications that threatened to drown one when finally turning on the phone over a town stop.

[3] I had been suddenly overwhelmed with obligation and anxiety that my mom was going to visit my San Francisco apartment for a week's vacation, by herself. I was relying on a friend – who was a stranger to her – to meet up and hand off a key. All morning I had been turning my phone's radio on and off trying to get a signal to check in that everything went smoothly. Of course, when I finally did get a signal, I found out everything was totally fine. Adults can, in fact, handle themselves. All my turning on and off of my phone's radio, however, had absolutely destroyed my battery, so I was left also unable to take any photos that afternoon, until I was able to charge it up again

### 12.1.2 You just waste the whole first night

For many hikers, town stops then became their own points of inflection between their on and off trail lives. All along the trail, hikers lamented the obligations that came along with coming into town. These were often socially-related, and things that people felt were personally important and enjoyed and experienced as more than just 'chores' – to call a grandmother, to send an email to a parent, to re-connect with a significant other who was not quite as excited about spending six months hiking as their partner and therefore had stayed home.

Nonetheless, the accumulation of these obligations landing all at once when one stepped off the trail could be overwhelming Town stops could often feel packed with too many activities: a need to do laundry, possibly shower, go grocery shopping, repair or replace some broken gear, get to and from the post office to pick up a resupply package – all without a car of one's own, and ideally within a short period of time. Depending on whether or not one planned to spend the money on a hotel or hostel room – and take a "zero" day, or rest day during which one hiked zero miles – one's time in a trailside town could last anywhere from 4-48 hours. Moreover, the primary thing most hikers really wanted to spend their time doing in town was eating. One can build up a serious appetite when walking twenty, thirty, or more miles for days in a row and trailside restaurants promised a meals comprised of something other than ramen and Clif bars. Add to these responsibilities and desires, the need/desire to catch up on email, or even "just thumbing through Instagram," and "you just waste the whole first night."[4]

One of the strategies hikers had for mitigating these feelings, was to prepare their friends and families in advance for their absence – often attempting to over-emphasize the disconnection that they would be forced to deal with on the trail. Those who had experience completing a long-distance trail in the past

[4] These two quotes came up in a casual lunchtime conversation one afternoon – not initiated by me, nor provoked by anything specific about my research. I was told about the desires and stresses of needing to call a grandmother when I and a few other hikers stopped in the middle of the trail one afternoon to take a small break while another thru-hiker played a song on a small backpacking guitar that he was carrying. These kinds of concerns were generally circulating among hikers throughout the journey.

often made explicit rules in advance – enacting a similar strategy to that Camp Grounded suggested to attendees in its welcome handbook.

## 12.2 We warned everybody, if you don't get a message, don't worry

A retiree who had hiked the Appalachian Trail (AT) a few years prior to his PCT hike, talked about how he had been working very hard to prepare his family for the PCT hike. He expected it to be different from his AT hike, because towns on the PCT are fewer and farther between than the AT. He also understood, however, that this was hard for his family to understand. He, himself, was grateful for the advent of cell phones during the time that he was raising his kids. As a parent, he had felt secure knowing that his daughters could always reach him if they were in trouble. Conversely, he could always reach them if he was worried they might be. Recognizing that over his own life the expectations of people for each other's accessibility had changed dramatically over the years, seemed to make it even harder to carry out a long distance hike without leaving loved ones in a worried position.

For many hikers, a way of assuaging the concerns of others – and feeling secure themselves – was to carry a personal locator device. The SPOT service, in particular, was popular in 2013. The device itself is a small GPS unit that could send limited messages via satellite. In advance of going on a hike, the user sets up the device with two pre-programmed messages and a list of email addresses to which each should be sent. Theoretically, one message is for saying "I'm OK!" and updating one's GPS coordinates on a website. The second message is supposed to be a "I need help" call, but goes only to a specified email list, meant to be used in situations where one's life was not in danger, but one might need the assistance of just friends or family. These messages could each be sent by pressing one of two hardware buttons on the device. A third hardware button sent a mayday message and one's GPS coordinates to Search and Rescue dispatchers, and was meant to be used only in emergencies.

Again, then, this technology required advance preparation. As one hiker explained:

> We weren't going to do the spot every day either. And, it has become a part of the night time routine when we're setting up camp… [but] we warned everybody, you know, if you don't get a spot message, don't worry. Because it may not happen all the time. That [warning] was more or less because it can be sort of difficult to get a signal sometimes with [SPOT devices] from what I've read. It's worked so far, but … we don't want to get so hung up on 'we have to send a SPOT message out' that if something doesn't go well that we are frustrated.

One of the peculiarities of SPOT – as it was then designed – was that the sender of the messages (the hiker out in the woods) had no idea whether or not their messages were going through, and the receiver of the messages (the friend or family member back at home) had no way of letting the user know they were not getting messages without being able to contact them otherwise. Almost everyone I met on the trail had had at least one encounter with their SPOT device not properly functioning. Sometimes this was unavoidable – GPS and satellite communication was not always possible in a heavy storm or deep in a ravine – other times it was unclear what went wrong. Preparing others for imperfect technological performance was an important part of keeping the hike a pleasant experience, rather than a frustrating one for both hikers and family and friends who might otherwise panic. The trail provided the excuse for this preparation – even as it was often enacted in a more uneven way than any excuse would suggest. A mother might get a nightly SPOT update, a boyfriend might get a long call at every town stop. Others might simply be told 'I'm going to be completely unavailable for five months.'

### 12.2.1 I think it was less idealism and more laziness

For example, one hiker, Trent, told me about several instances of working very hard – walking particularly long days – to keep up a certain hiking pace that was required in order to meet his girlfriend and parents at a pre-determined location and on a planned date in the middle of his hike. However,

he would often completely ignore SMS messages with friends – even fairly close friends – for a week or more at a time, and did not feel pressure to sync his hiking schedule with everyone:

> I mean I called and texted friends of mine and stuff at different times. You know and then I'd get their text the next resupply later or whatever. Kinda have a long correspondence. And that was fun. Probably five or six people were texting me, like, 'hey where you at?', you know and um.. so I did text talk to a couple buddies of mine who were supposed to meet me at different points and you know it just didn't work out. Because the sporadic schedule wasn't really– you know you can't hit everywhere on the weekend.

This aspect of the PCT stands in sharp contrast to the lives of southern California families. In these working professional families, adults were often trying to juggle *everything*, and to not let anything slide – their parenting, their work ethic, their productivity, their friendships. By contrast, the trail provided a space where this particular normative social ideology was flipped – hikers routinely ignored people from their off trail life, even people who were very important. Talking about Facebook, for example, Trent explained that he did not use it very much while hiking. This lack of use was less because he was unable to, or thought that Facebook was a 'bad' thing, and more because he just did not feel like he *had* to. The trail provided an opportunity for him to be "lazy" about his social relationships back home, which otherwise might expect him to pay attention to them more closely:

> But yeah not doing any kind of social media really. I did Facebook a couple times. Like you know in Chester and Ashland [two more developed towns on the PCT] and all but I didn't really – and **I think it was less idealism and more laziness**. I didn't want to have to you know deal with all that crap.

I met another hiker at Kennedy Meadows who also told me about enjoying the sabbatical away from his typical obligations. He had found that his own inattention to his email – again not strictly because he *could* not attend to it, and more because he simply *was* not attending to it – was having a side effect

of others not sending him messages any longer. The PCT, of course, provided the legitimate excuse for this social inattention.

### 12.2.2 It was a more legitimate break

As many hikers found, the 'space' of the trail allowed individuals to more fluidly navigate their social (dis-)engagements via technology – and thusly, only some of their technology use experienced as problematic, rather than the entire communication device being marked as a thing from which one needed to 'unplug.' Francine – whom we met at the beginning of the previous chapter – explained the reasoning for her trip thusly:

> [The PCT is a] really perfectly laid out trail with which we can do all the things that we love and see all the wilderness areas that we really like, and **not have to talk to anybody for five months**

She then continued, explaining that while she wouldn't choose a long trail again, she came to recognize that the particular activity of the PCT granted legitimacy to her choice to take the extended break from social life that she desired:

> After the PCT, **I would probably [rather] pick a wilderness area and just sort of like roam and wander**. Because, sometimes the linear aspect of it was just – not to say that it took away from the experience – but I realized how much it was, like, goal-oriented in that sense. You're like, wait why, a starting point and a finishing point? **But, yeah, at the time, I think it was a more legitimate break. … it was easier to explain [to family and friends] that I'm doing this thing, that would be an accomplishment, right**? … It made it much easier to talk to people, because they'd be like– 'Wow! What an accomplishment. Way to challenge yourself.'

Francine described the trail in other parts of an interview as “the right kind of hard” – it was certainly a physical and mental challenge for everyone I met, more and less of one at different points on the trail. However, this challenge or sense from others that completing the trail was really hard was not how she actually experienced it, day to day. As mentioned in the Introduction, Francine thought that the “best kept secret of the PCT” was that, in reality, the experience was less one of being “really hard” and more one of “bliss.”

Keeping this something of a secret, allowed the hike to be leveraged as a legitimate, non-offensive, excuse to disengage from social life, even as a total disengagement was less often enacted (or desired). The trail provided an apparently impersonal way for hikers to prioritize and filter their interactions in ways that were actually highly personal, but did not come with the risk of suffering social repercussions.

## 12.3 Oh no, we have obligations to be here

> So we had an Excel [spreadsheet] that had daily mileage. Both of us are really close to our families, like they want to come visit and have to plan in advance for like hotels. We did it well because we ended up keeping to our schedule. But in the beginning it was really stressful because you like get blisters, you get behind, you’re like oh no, we have obligations to be here and like – You want to just enjoy it and go day to day, but at the end of the day you’re also like, there’s a window of weather, like you have to – you guys know this, you have to like floor it.

Beyond apparently computational-communication related points of inflection, processes of scheduling and coordination were also stressful sites of on and off trail conflict. As the hiker in the quote above explains, having a schedule for the trip was both necessary and frustrating. Ultimately, there is a limited seasonal window for completing a thru-hike, as most hikers are not prepared for winter snow camping. Completing a 2650-mile journey in between the late snows of spring and early snows of fall requires

that hikers keep up a certain pace on the journey. Moreover, for hikers with close friends and family, figuring out how to include these people in their hike – meeting up for a weekend break in a cabin somewhere along the trail, or to hike together for a few days – was often a stressful challenge.

Meeting this challenge was often complicated by the lack of access to cell phones – something that one's off-trail friends and family are accustomed to using, as the following vignette from my own experience at Walker Pass in southern California makes clear. That is, the constraints of technology use in the remote areas through which the trail past left hikers in positions to be out of sync, and not matching the expectations of nearby friends and family even when at a highway crossing.

> We are trying to hitch to Lake Isabella with [two friends I met on the trail] from Walker Pass because [one of their] parents has a cabin there. When Luke and I first agreed to join them for a likely zero and hanging out at their cabin, we were under the impression that their family/friends would be able to give us a ride. But, apparently we have arrived early to the road (it was only ~1pm when we got there) and they have no idea when their family might show up. No one seemed to have any cell service, and so we are trying to get the long hitch (~50 miles) all the way into town, but not having much luck at all, and there is very little traffic on the road. Our friend can tell that he has voice mails on his phone, but he cannot seem to listen to them. This is a common phenomenon on the trail where phones seem to get enough signal to say that there is some communication waiting on you, but not enough signal to get that communication the rest of its way to you. It creates a lot of anxiousness, nervousness and frustration. He had assumed they would have service at Walker Pass when planning this exit originally. He had tried to get through on the phone last night at their campsite, and had partially picked the specific site they camped at because it was up on a ridge-line and he thought there might be service, but no such luck (they instead got crazy ants!)
>
> Finally I stand in just the right place and check my phone again – and voila! It has service! It is pretty shocking that my T-Mobile phone has service somewhere that their Verizon

> phones don't! Maybe the only time this, like, ever, happens on the whole trail. But... my phone is nearly dead, of course. I tell Luke to come stand over near me, and take his phone off of airplane mode. He is able to catch a small signal, too.
>
> When our friend first gets in touch with his Dad, his Dad is like, 'what! You're there now? I didn't know you were coming today.' Clearly there had been some prior miscommunication. It turns out that his dad is still at home, several hours away. The voice mails that we were unable to listen to were from his dad, from last night. He was not there yet, because he had been waiting to hear back from our friend.

Eventually we got a ride partway to town, and were able to coordinate via text message for his family to pick us up at a gas station about halfway between the trail and their cabin. While this case of scheduling difficulty – compounded by communication constraints – was resolved with only a few hours delay in our arrival to the cabin for a hiking vacation, scheduling stresses at other points on the trail were often more difficult to manage.

Nearly everyone I met had some story of struggling to meet up with friends and family, and, remarkably, these incidents rarely seemed to improve the farther we made it up the trail. Around a thousand miles of hiking later later, when coming through Seiad Valley – the last city before crossing the border from California to Oregon – we met not one, but two hikers struggling with family obligations.

After finishing an extended breakfast and lunch at a small cafe, I came out to find a friend stumped by the payphone outside the joint Post Office / Store / Cafe in this small town, which had no cell service. The Pay Phone did not take quarters, and he did not have a calling card. He did, however, need to get in touch with his parents because he was trying to coordinate with them for help getting to his step-brother's wedding over the coming weekend. He tried calling collect but could never get it to work, and spent several minutes talking to the operator who assures him that without a calling card, using the pay phone to call his parents would be impossible. Finally he decided to try to text his parents to call him on

the pay phone. After several tries, he manages to stand in just the right place, to get just enough signal to send the SMS, and finally, the payphone rang.

In the meantime, I am also perusing the fine food offerings of the small store, and trying to find fuel for the camp stove. Inside the store, I run into Tim, another hiker, who is also attempting to do some coordination work while in this small 'town.' He has had longstanding plans to meet his sister in Ashland – the first town across the Oregon border – in several days. He and his sister have a tradition of meeting in Ashland every summer to attend their annual Shakespeare festival, and in many ways he is looking forward to seeing her and continuing this tradition. Yet, in the context of his hike, he is also feeling stressed about the whole situation. Feeling guilty about feeling upset about the personally-valued meeting he says to me, "I don't know why it stresses me out so much!" Nearing the California/Oregon border, he is excited about making progress and getting ever-closer to Canada. His body is strong from months of hiking and he is ready to put in some miles. Yet, in order to make the meeting with his sister, he will have to slow down. He has been stopping early every night for several days, ever since the last town stop, trying to drag out the miles so that he does not arrive too early in Ashland, and get stuck with an expensive hotel bill for extra nights in town.

In a post-hike interview, another hiker recounted another story of meeting up with someone in Ashland – a fairly large town on the PCT and right on I-5, so it's accessible. His meeting was with his girlfriend, and he took three full days off of hiking, "which was awesome." Getting there, however, was not so awesome:

> So we met in Ashland and that was like my deadline that I regret doing because I did set a date fairly far in advance and that was just stressful. It was like oh shit you know. Like, you do a low mileage day and you're like whaaaat? And then you pound out miles and you just feel like you're trudging to a destination.

When I caught up with Tim later along the trail, I found out that he was able to connect with his sister, and it was a great visit. However, he was already saddled with another obligation. She and his dad wanted to meet him at the border in Canada, and were anxious to start planning their trip.

While all of these stories have revolved, in part, around struggles to communicate across the on trail / off trail divide, a difference in technologies of communication were not the only differences between on trail and off trail life.

## 12.4 My hike's not about that anymore

I met Andy at the annual Kick Off event that I attended about a week into my hike. I was looking for people to talk to about what technologies they brought on the trail, and he said that one of his important technologies was a small voice recorder that he carried. He used it to journal on the trail because he didn't like writing or typing into smartphones. He had hiked the AT the year prior, and had not owned a phone since then. He did, however, buy a smartphone before starting the PCT. He said that not owning a phone for the last year had been partly a result of his AT hike and he did find it annoying when people brought phones out, for example, in the middle of a conversation. However, he also said that he wasn't feeling conflicted about having purchased a phone for the PCT, because his hike, this year, "isn't about that anymore."

When I caught up with him at a campsite on the trail a couple of weeks later, he explained in more detail that what he learned on the AT was that "you don't need all that stuff that society says you need to be happy." Although this sometimes seemed related to things like having the latest gadget – and was why he had not had a phone since his AT hike – for him, it referenced something much bigger and more systemic. His greatest fears were not about being addicted to technology, or not connecting authentically with other people. Rather, he was more concerned about getting "stuck" in a job "with three kids and a mortgage."

Like Sam, who opened this chapter, Tim had once worked a regular salaried job, and valued the kinds of comfort that came with it, but the lesson he took away from his AT hike – and was hoping to continue to develop on his journey on the PCT – was that "comfort" and "living comfortably" were not the same as "having lots of things and working all the time." The trail provided a respite, then, from these more broad-based social habits and customs. It was a place where he could get by with only what he carried on his back – but without being an outcast that was living 'on the streets.' The trail provided a community that espoused a slightly different set of values, and provided a slightly different set of everyday habits. This will be explored further in the next chapter, which will conclude this second part of the dissertation.

# Chapter 13

# The Perfect Disconnection

Through the Sierra Nevada mountains, the PCT shares much of its footpath with the John Muir Trail which traverses the mountain range from Mt. Whitney – the tallest point in the lower 48 – to Yosemite Valley. This section of trail is often regarded as one of the most dramatic and impressive portions of a PCT hike. The PCTA describes it on their website as "one of the premier trail experiences in the world"[1] and "what many backpackers say is the finest mountain scenery in the United States"[2]. As it also traverses through two national parks – Yosemite and Sequoia-Kings Canyon – thru-hikers often find themselves talking with some of the many JMT hikers, day hikers, and weekend backpackers who are also out enjoying the mountains.

One afternoon, in the Sierra, I ran into a friend, Derrik, who had just had an encounter with some of these short-term wilderness tourists.

> Somebody just told me I should hike the JMT because that's the best part. **I was like, you don't get it. You don't have to quit your job to hike the JMT**.

[1] See http://www.pcta.org/discover-the-trail/geography/
[2] See http://www.pcta.org/discover-the-trail/john-muir-trail/

For Derrik, the point of the trail, was, in part, its separation from everyday life. He had a hard time explaining this to this wilderness tourist, out to see the sights of the national park, regarding the importance of nature as being related to its aesthetic beauty. He could not understand why someone would want to hike the *whole* PCT all the way from the deserts of Southern California and through the semi-logged forests of Northern California, and so forth. The point of the hike for Derrik – and many people that I met on the trail – was not just to see the beautiful mountains of Ansel Adams and John Muir. The point of the hike, was to get out of everyday habits and routine lifestyles for a significant period of time. The length of the trail dictates that a thru-hike will easily take up five months of time. This alone necessitates that one quit their job, often sell a house, and generally "uproot" as some hikers would describe it.

The trail itself would come to mark a pivot point in the lives of many hikers I met. The end of the trail was met with either a re-rooting in society – but often a fresh start somewhere new: a move to a new city or state, a new job, a new set of friends – or, for others, a transition to a more vagabond lifestyle – unable to face a life dominated by a 9-to-5 workday any longer, people moved into vans, arranged winter seasonal work to save up money to hike again the following summer.

## 13.1 So much for disconnecting!

When I had reached Agua Dulce, CA – just over a month into the PCT – I had felt like I had reached an important milestone. Although I was only 454 miles into the 2650-mile trek, this small desert town in eastern Los Angeles county was the home of Donna Saufley – one of the most famous 'trail angels' on the PCT.

In an unprecedented act of compassion and generosity in contemporary neoliberal America, she and her husband had – for 16 years – opened their home freely to the hordes of thru-hikers that pass through

their town each spring [3]. When I hiked, in 2013, nearly 1000 people registered for a thru-hiking permit. Although only a much smaller number of people would finish the trail – statistics are not well-tracked, but best estimates put the completion rate at around 50% – most people were still at it when I came through the Saufley's house in late May. They reached their cap of 70 hikers at a time camping in their backyard every night for weeks both before and after I came through.

Their home has long been aptly known as 'Hiker Heaven.' When I first arrived, Donna Saufley warmly greeted me – a smelly, dirty stranger – with a huge hug. I was dirty in a way that only walking 20 miles a day through a nearly waterless desert can make you – my skin caked in days worth of accumulated wind-blown sand, sweat, and salt; I had only one set of clothes which were just as filthy as my skin. I also had blisters on my feet; I needed new shoes; I needed new food; I was weeks behind on updates to the blog I was trying to maintain. I was in need of a break. So, there I was, 454 miles into the trail, and I had made it to the promised land, Hiker Heaven. There were power strips upon power strips for charging up devices. There was shade. There was water, ice cream, beer, music, WiFi, and a laptop station to free my fingers from typing on a tiny virtual smartphone keyboard. There were port-a-potties! There was a shower!

I spent a blissful 48 hours in town taking what's called a "zero day" – or rest day, in which one hikes zero miles. I soaked my sore and blistered feet in salt baths; I conversed with other hikers about final plans for the upcoming Sierra Nevada mountains – Who planned to bring an ice axe given that it was a dramatically low snow year? How much food could one really fit in the required bear canister? How much food was needed to get from Kennedy Meadows to a resupply point? Was Independence or Bishop better for resupply? Were we falling behind schedule or would we be able to make it to Canada before the fall snow?[4] I also gave a sore knee a much needed day off from hiking, bought new shoes, washed

[3] The Saufley's stopped hosting hikers before the start of the 2015 hiking season. A brief history of their story can be found in S. Friedman (2015).

[4] Others who have read this chapter have asked that I discuss how this "incredibly stressful" sounding planning related to the stresses I described earlier in the dissertation. However, the only thing notable here is that none of this planning and conversation seemed stressful at the time. Conversations about gear and planning dominated social lives of thru hikers, but were rarely accompanied by much anxiety. All of these things about ice axes and food and scheduling made up the mundane kinds of questions of a thru-hike. Moreover, even at this point, just a few hundred miles into the trail,

my clothes, updated my water report, and picked up a food resupply before heading back out to the trail. As I packed up my gear, I remembered that it was the day of a friend's PhD defense, and so I sent her a text early in the morning,

"Have an awesome defense today! Thinking of you :)"

She wrote back – having seen my Instagram post from the day before about riding in a van into LA to purchase new shoes at the REI:

"Thank you!!!!!! Thinking of you and all the traffic"

A couple of hours later, I was still at the Saufley's, trying to finish up a few more blog posts at the laptop station, set up under a shade tent in the driveway. I saw on email go through the lab mailing list congratulating her on a successful defense. So, I sent another SMS.

"Hey!! I hear you passed! (Of course ;)) congrats!!!!"

To which she responded,

"Thank you!!! So much for disconnecting!!"

It's true, the Saufley's house, in many ways was the antithesis of 'disconnection.' I was reading email, sending SMS messages, calling my mom, posting things to a blog, uploading photos to Instagram, mailing packages home, and soaking up information from the well-maintained bulletin boards in the garage-

most hikers had developed a level of confidence and certainty in their abilities. Planning was a reasonable thing to do, and being informed and exchanging opinions with other hikers was probably a good thing. Discussing and ordering new/better gear, or finding ways to cram even more calories into a bear canister was potentially exciting, and debating the number of days left to the Canadian border and attempting to predict the future and speculate on when the first snowfall would arise was a continual source of activity. However, there was a general sense that (1) no one was really at risk of dying as long as you were not being incredibly ill-prepared and reckless (and reckless people tended to not be stressed for other reasons that drew them to being reckless in the first place; ill-prepared people probably did not realize they were ill-prepared) and (2) you would either get to Canada before the first snow or not, there was only so much agency/control one might have. This, then, marks some difference in the thru-hiking experience, the desire and attempt to be "in control" was significantly lessened from typical American life, but is somewhat beyond the scope of this dissertation's focus on understanding computing as context. The point of including these questions here was merely to give a sense of what typical thru-hiker conversations were like/about.

turned-post-office-and-town-center; and almost everything celebrated about the Saufley's was a celebration of civilization – showers! toilets! washing machines! beer! restaurants! a bed!

Yet, at the time, receiving the SMS prompted me to reflect in my notes that day that it really felt like "the perfect disconnection" because I felt like I had no obligations to reach out to distant others. The fact that I was hiking a long trail provided a socially and professionally legitimate excuse to be fairly non-responsive to anything that I deemed 'unimportant' at a very personal level. The length, scale, and definitive project of the hike (it is a socially recognizable activity – complete with a name, a community, and a mythos) allowed a large degree of leeway in how I negotiated my participation, via digital media, in various realms of social life. At the same time, it draws into relief the ways that, unlike the experience at Camp Grounded, the relationship between technological disconnection and disengagement from social life on the PCT is not one of total overlap.

While hiking the PCT, my mobile-phone-internet-connectivity was far less questionable than many people assumed, especially in the southern California sections of the trail. Certainly in town stops – places like Agua Dulce where I would resupply once every 4-6 days – Internet access was plentiful. But, more to the point, the first 700 miles of the PCT are never far from the roads that crisscross so much of sprawling southern California. They carry not just people in cars, but also land that offers a right of way for infrastructure and already carry power lines from inland wind farms to the Los Angeles metro area. Roads are an already de-naturalized space where cell towers can be constructed, and where the construction of cell towers is anticipated by the expectations of motorists and GPS apps that no one driving a car should ever be too far from Internet connectivity.

Yet, the perception that I might not be reachable – compounded by a moral sense that other shouldn't disturb my journey – meant that I felt no obligations to use this infrastructure. In large part, however, I could use it when I wanted to – to pay attention to a friend's PhD defense, or a few months later, to find a ridge-line at some point during the day with a good line of sight down to the developed desert below to call my mom on her birthday.

Thus, on the PCT, I experienced a kind of social dis-engagement, without necessarily a concomitant technological dis-engagement. The geographic distance and temporal scale of my trip distanced me from social entanglements in a manner much like the premeditated constraints of Camp Grounded. However, on the trail this experience lasted for months and I did not have to entirely give up the use of computing technologies in order to achieve some amount of separation from my off trail social life.

## 13.2 What if I don't want to be that separate?

Across all of the examples of thru-hikers taking advantage of the way that the trail provided the legitimacy for a disengagement from social life, few people enacted a total disengagement. Indeed, what the hike seems to suggest is that the "perfect" disconnection is one that is partial, and related more to the lowering of the stresses of obligation rather than a totalizing isolation from community. Some hikers found new communities on the trail, and worked hard to keep their off trail life as contained as possible. For others, the trail provided the legitimacy to be more selective in their social engagements off trail as well. For hikers like Christina, the binary of "on" and "off" trail could be frustrating, itself:

> I feel like a lot of people you meet on the trail are like '[I] don't want to hear about career aspirations. Just be in the moment. Don't even call your family.' And you're like, **maybe some of us like the rest of our lives and this can be a part of it, it doesn't have to be separate**.

Attempts to participate in non-trail relationships was often facilitated by artful engagement with digital technologies that could enable one to maintain a sense of partial participation and belonging in realms of social life beyond the trail. For these people, technologies facilitated a bridging between the symbolic and geographic gap between their family and friends back home and their own experience of hiking thousands of miles. For example, Christina talked about how having a blog was an important part of her trip, allowing her to feel connected with friends and family:

> What I missed most was definitely my friends at home and my family. And kind of like the community I have [at home] … **it's amazing to hike, but it also feels really selfish.** And, I was like, this is the time to do it, and people understand, but **I was glad that we also had the blog – like we kept a blog the whole way and made it accessible for people … that helped to talk to people, because you didn't feel you had to catch them up all the time because they could read and know what's going on and you could hear about what they were doing instead.**

Christina was thankful for the blog and the way that she and her hiking partner strove to integrate their on and off trail lives. However, in an interview several months after finishing the hike, she still talked about experiencing a difficult transition from her life on the trail to her life back at home.

> Depending on who you talked to, some people just didn't want to hear about life off the trail, and saw it as like a black or white thing. And **I think we did a really good job of integrating it even though it is hard to go from living one to another.**

The definitive project that is hiking the PCT sets the stage for practices of dis-engagement, in a manner similar to the "how to prepare for your trip" tips included in the Camp Grounded materials. The fact that practices of dis-engagement are both deeply connected to the symbolic, functional, and ideological capacities of digital devices and, as the PCT example illustrates, distinct from them, suggests the complexity of the sociomaterial entanglements at play.

While our access to the infrastructure associated with ubiquitous connectivity was partially constrained – cell towers are not present every moment of every day on the trial, and moreover, a lack of electric infrastructure made it important to ration one's battery between town stops – this external limiting of use was not the full story. Feeling like I had disengaged from the obligations and expectations of my life as a friend, a daughter, a doctoral student, etc. was key to the relaxation, separation, and peace associated with my time on the trail. Yet, I still took daily photos for Instagram, and many hikers kept a daily blog. We shared reports of water sources and wildfires through crowd-sourced Google Docs

spreadsheets and commentary on a group Facebook page. Our disengagement from society was made possible because these expectations of those we cared about, felt obligated to, and needed to keep up with had all changed (even as we did have cell access on many more days than these others may have realized).

What felt like the "perfect" disconnection on the PCT was one that was partial, and related more to the lowering of the stresses of social obligations rather than a totalizing isolation from either computing or community. Practices of disengagement across these different accounts – from Thurston (2013) and Roberts (2014)'s sabbaticals, to Camp Grounded, to the PCT – were intertwined with the symbolic, functional, and ideological capacities of digital devices. The intentional arrangement of – and or constraints inflicted upon – computing technologies and other aspects of one's context as perceived by self and others – made various kinds of social disconnection both practically possible and socially legitimate.

The Camp Grounded and Thurston (2013) and Roberts (2014) accounts show that social disconnection can be achieved through the use of technology as a proxy. However, they also underscore the importance of recognizing what else changes between the scene of 'everyday life' and a period of 'unplugging' – the context shift , and concomitant social disconnection, that technological unplugging facilitates. This, however, is not the only way to evince a contextual shift. As the case of the PCT shows, disengagement can also be achieved without fully removing technology from one's life.

We can thus understand the event of 'disconnection' through revisiting the three implications of an analytic perspective that takes 'computing as context' that were presented at the end of Part I (see chapter 8, Computing as Context).

Understanding computing as context helps us to see the ways that the subjective experience of computing exceeds the moment of 'use' and ICTs shape practices that do not themselves include ICT use. The subjective experience of disconnection similarly exceeds the moment of 'non-use' and is rooted in the broader social shifts that result from and accompany the technology's constrained, partial, or non-use – not the object's absence alone.

Understanding computing as context also emphasizes the ways that the collective use of ICTs shapes what it means to enact shared social values, and provide part of the ground from which cultural norms and expectations are produced. In the case of disconnection, non-use means *not* meeting some of those norms, and this often requires explicit negotiation with others (e.g., an email auto-response, a warning about the possibilities of a SPOT device failure), and a legitimating excuse. Providing an excuse and negotiating one's roles and responsibilities explicitly can sometimes be about preventing failure (e.g. Thurston (2013)'s concern with not being perceived as "rude" or "unprofessional"). It can also be about a dissatisfaction with the norm itself (e.g. for hikers like Sam, he would prefer to *always* have the reduced obligation to communicate with his family and participate in certain realms of his social life that he finds an excuse for on the trail).

Finally, and relatedly, viewing computing as context helps us see that some use of ICTs are obligatory for appropriate or full participation in normative social life. In the case of disconnection, we can see that cutting off technology can serve as a proxy for cutting other ties. Non-use is always accompanied by some other form of social disengagement (whether an explicit sabbatical, or the recognition that one simply cannot be a friend to some people without interactions through Facebook). Attending to these social cuts that practices of disconnection include is essential for understanding how and why non-use appears impactful.

Taken together, the stories in this second part of the dissertation emphasize that what is at stake in disconnection events is not the technology use (or individual 'addiction') alone, but rather a more diffuse and indirect shaping of social interactions, expectations, obligations and shared values. Events deemed virtuous or worthwhile (the long distance hike, the ascetic technology detox) are acceptable reasons to disengage from aspects of one's social life that are otherwise stressful, overwhelming, and anxiety-laden.

# Part III

# Conclusion

# Chapter 14

# Conclusion

This dissertation opened with the presentation of an apparent paradox. In interviews, participants in the first phase of research – like participants in prior studies – described their lives in terms of "constant connection." They also often expressed desires to disconnect, and to use various computing tools – especially their smartphones – less frequently. Yet, during the course of the ethnographic fieldwork, the same individuals who lamented constant connection, were observed *not* using computing technologies much more often than they were observed using them. This initial paradox provided a jumping off point for examining more closely what participants meant by "constant connection." To what they were referring when they expressed desires to disconnect, and how was mobile computing implicated – or not – in these phenomena?

Both popularly and academically, constant connection has been understood to mean 'constant use' and desires for and practices of disconnection have been understood primarily in terms of technological non-use. This dissertation has proposed an alternative analytic framing that relocates computing as part of the context for lived experience and social life. Empirically, the analysis presented in the last ten chapters tempers reports of totalizing forms of "constant connection" and argues for an alternative understanding of non-use as a proxy for cutting social ties rather than a phenomena centered on mitigat-

ing any inherent threats of computing technology itself. As my research shows, experiences described in terms of constant connection are not just about frequent technology use – indeed some individuals describe the stresses of connectivity as being "in my mind" more than in any practice. Concomitantly, disconnection is not just about getting away from "pings, rings, and updates" but rather is related to severing ties and disrupting the flows and circuits of everyday habit and obligation.

In this concluding chapter, I briefly review the arguments made in the dissertation thus far, linking them back to the concerns which motivated the initial research and summarizing the empirical and theoretical contributions of the work. I then close by presenting a set of two broader implications for HCI researchers and designers that the dissertation provokes in its analytic re-location of computing as the context for, rather than locus of, human lived experience and social life.

## 14.1 Constant Connection and Punctuated Use: Computing as Context

Mobile connectivity is one of three key "technology revolutions" that Pew Research identifies as occurring over the last fifteen years – impacting American life by "mak[ing] anytime-anywhere access to information a reality" and "making just-in-time and real-time encounters possible" (Pew Research Center 2015c). This revolution, is in part, what the initial research for this dissertation set out to investigate. In particular, along with my co-researchers, I was focused on understanding the ways that mobile ICTs related to a kind of anytime, anywhere connectivity. A broad array of academic researchers have described contemporary life as characterized by "constant connection" (Wajcman and Rose 2011), "perpetual contact" (Katz and Aakhus 2002), or "absent presence" (Gergen 2002) – all of which are defined by sustained periods of near-constant computing use, often to the detriment and exclusion of other forms of human (inter)action (See also, Turkle 2008; Bittman, Brown, and Wajcman 2009; Grant and Kiesler 2001; Chesley 2005; Green, Harvey, and Knox 2005; Mazmanian 2006; Towers et al. 2006; Boswell and

Olson-Buchanan 2007; Turkle 2011). Previous research has described participants who were, for example, so tethered to their email and mobile devices that they could not imagine even taking a cigarette break without these computational tools – a mere five to ten minute period of unavailability was deemed inappropriate (Wajcman and Rose 2011, 955).

Conducting fieldwork with southern California working professionals and their families from 2011-2013, however, I found myself taking photos of iPhones abandoned on the sidelines of kids soccer practices (see chapter 1), and talking to working parents who had routines of plugging their phones in as soon as they came in the door (see chapter 4) precisely to avoid the "pings rings and updates" that were popularly understood as characterizing everyday life (Richtel 2012). Indeed, participants' ICT usage patterns were punctuated and variegated – patchy, rather than constant. In making sense of why they felt "constantly connected" – even in the face of non-constant technology use – I argued that we must attend to the way that the experience of computing exceeds these moments of use and interaction. Rather that adjudicating, then, between participants' descriptions of the subjective experience of computing as one of constancy and my own observations of more punctuated patterns of computing use, I suggest that we might understand "constant connection" as a referent to the ways that computing was always part of the background of daily life (see section 4.3). The possibilities of mobile computing technologies – for communicating with others, furthering a work project, or just playing a simple game of solitaire – appeared latent in the environment and the individual, haunting scenes of daily life as a kind of continuous potential, even if only sometimes directly implicated through moments of computing interaction and use. As one participant put it, "constant connection" was sometimes a phenomenon that was "more in my mind" (see subsection 4.3.1). In part, computing often served as an important symbol and reminder of the more diffusely rooted stresses and excesses of participants' social lives. These excesses often revolved around quantities of work that could never be fully completed, and always seemed to beckon (see section 4.3, chapter 6, and section 7.1). Excesses of work were further compounded by busy family schedules that sometimes required parents to "divide and conquer" in order to successfully accomplish a weekend (see section 8.2). In addition, this dissertation has shown that the new and most celebrated features of mobile computing – forms of immediate communication – were not clearly a direct cause of

the kinds of excesses of which "constant connection" was symbolic. For workers like Chris and Michael, the ways that work exceeded the bounds of the office was often not about responsiveness or 24/7 availability – the kinds of things to which much prior work has attended (see, e.g., Mazmanian and Erickson 2014; Wajcman and Rose 2011). Rather their working-at-home – often through the use of computing – seemed more about more simply having more work to do than could be accomplished within the bounds of a 'regular' work day (see chapter 6, especially section 6.2, and section 7.1). As I described in chapter 5, participants' strategies of *arranging computing* were one way to keep these excesses at bay, constrained and contained to only certain periods of an evening or weekend – and contributed to the state of 'punctuated connectivity' that I observed. Moreover, computing was implicated in strategies for achieving a successful life and managing these excesses – along with broader ensembles of technologies and techniques that made the achievement of the everyday possible, from pre-prepared food to automobiles and highways (see section 7.2).

The key contribution of part I of this dissertation is to add empirical texture to prior depictions of "constant connection" as a key effect of the arrival of "ubiquitous computing." It responds to Wajcman (2015)'s call for continual research on the effects and experiences of ubiquitous computing (Wajcman 2015) and Kolb, Caza, and Collins (2012)'s call for more specific attention to degrees of connectivity that are not truly "constant." In contrast to more predominant stories focusing on totalizing forms of constant technology use and 24/7 availability (see, e.g., Roberts 2014; Morrison and Gomez 2014; Mazmanian and Erickson 2014), this dissertation adds further evidence to the arguments made by a smaller set of researchers that there has been tendency to overemphasize the frequency of technology use, especially when focusing on youth adoption (Thulin and Vilhelmson 2010), and to "exaggerate" phenomena of "work extension" and work-home boundary blurring (Bittman, Brown, and Wajcman 2009).

However, this is not to say that computing did not *matter* for participants lived experience. Rather, in all of the specific cases presented in part I, computing – and the way it came to matter for lived experience and social life – could not be explained with only attention to moments of technology use and interaction. Thus, in chapter 8, I develop the alternative analytic frame of *computing as context* as

a way of acknowledging and making sense of the apparent paradox laid out in the introduction. As part of the context for social life and human interaction, computing contributed to the formation of shared expectations of what it meant to enact social values. The various potentials which computing offered up – to work on a spreadsheet late at night (see subsection 7.2.1) or to recover moments of leisure in the context of a busy family schedule and over-burdened work life (see section 6.3) – served to alter the landscapes of possibility within which individuals made determinations about what was reasonable to expect of themselves or others (see section 7.2 and chapter 8). Thus, to analyze computing as context, is to understand the ways that it comes to matter in its subtle shaping of the habits and patterns of social life which extend far beyond the moment of interaction and the specific affordances of any one technological feature.

## 14.2 Disconnection and Short-Circuiting Social Life: Non-Use as Context Shift

As other scholars have noted, the last decade has been marked not only by the arrival of ubiquitous computing, but also by the development of a broader cultural conversation about disconnection, unplugging, and pushing back against the forms of "constant connectivity" that have been understood as accompanying this new proliferation of computing technologies (see Foot 2014; Harmon and Mazmanian 2013). Much like understandings of ubiquitous computing that take up terms like "constant connectivity" and presume high levels of frequent technology *use*, disconnection has generally been understood in terms of the *non*-use of computing. In the second part of the dissertation, I bring the analytic framing of 'computing as context' to a multi-sited exploration of disconnection. Similar to the arguments made in part I – that connection must be understood as a phenomenon that exceeds the moment of technology use – in the second part of the dissertation, I showed that disconnection should be understood as about something much broader than a simple lack of technology use. Instead I argue for understanding disconnection as a phenomenon that has arisen in response to the situations of everyday

life that are partially described in Part I, and which always exceed the specific features and functions of new computing technologies.

In 2010, when this research was first beginning, a *New York Times* online feature, "First steps to a digital detox," accompanied the publication of the first article in a *Times* series "Your Brain on Computers" (Times 2010). In the lead article, Pulitzer Prize winning journalist Matt Richtel profiled a family "tethered to e-mail, BlackBerrys, iPads and other electronic devices" and described how their "constant use of digital media" was "taking a toll on their lives" (Richtel 2010). In the online feature, the *New York Times* Editors called on numerous academic opinions in offering up reasons and strategies for unplugging from these problematic computing tools. Within the context of a life understood as characterized by a continuous struggle against the "lure of constant stimulation – the pervasive demand of pings, rings, and updates" (Richtel 2012; See also, Salemi 2010; Scelfo 2010; Bernstein 2011; Connelly 2010; Dokoupil 2012), disconnection and unplugging have been seen as solutions or remedies to a problem of too much computing.

Researchers such as Turkle (2011) have suggested forms of everyday disconnection, "very simple things" like "talk[ing] to colleagues down the hall, no cell phones at dinner, on the playground, in the car, or in company" (295–296), while others have lauded the benefits of turning off email at the office (e.g., Wilson 2012; Mark, Voida, and Cardello 2012). More popularly, writers, journalists, and cultural critics have reported on their own (generally framed as successful, and positively experienced) experiments in disconnecting or unplugging from computing technologies (e.g., Thurston 2013; Maushart 2011; Roberts 2014). An emerging group of scholars have begun to define a new research area often referred to as "non-use" studies (see, Baumer, Burrell, et al. 2015; Baumer, Ames, et al. 2015). This area of research has focused, in part, on understanding forms of pushback against constant connection – both in practice and as part of cultural discourse – asking what they might teach us about the arrival of ubiquitous computing. In particular, several scholars have argued that periods of non-use draw into relief the more continual nature of technology use in everyday life (see, e.g., Morrison and Gomez 2014; Roberts and Koliska 2014). In addition, another set of scholars in this area have attempted to assess the efficacy of

various forms of technology cleansing, resistance, and pushback. These scholars have typically focused on the technology itself. For example, Baumer, Burrell, et al. (2015) suggest studies of non-use can help us to understand uncontrollable "information flows" and Morrison and Gomez (2014) conclude their paper arguing: "as users, we need to take control back, and make informed decisions about how we will manage our use of technology, or risk having technology manage us."

By re-considering disconnection as a form of context shift or re-configuration – rather than as an event wholly centered on technology alone – this dissertation makes several important contributions to this emerging body of work.

First, the analysis of family and work life in part one of the dissertation demonstrated that calls for "putting technology in its place" (Turkle 2011, 295-296) are already being enacted by many participants (see chapter 4 and chapter 5). The dissertation makes it clear that while individuals made such moves to arrange computing as a way of shaping their context and environment, these arrangements of computing were only partially successful at alleviating the stresses associated with contemporary work and family life. Bracketing off technology – alone – is clearly insufficient to ease subjective experiences of anxiety or stress – even those which participants' associated with the use of computing technologies (see chapter 6 and chapter 7, especially section 7.1). Analyzing computing as part of the context for lived experience and social life draws into relief the ways that these devices are symbolic of stresses rooted in broader excesses of daily life. That is, the stresses and excesses that are often described of in terms of "constant connection," do not revolve entirely around issues of immediate 'responsiveness' or mobile accessibility. Breaks from technology – e.g., plugging a phone in on the kitchen counter when one arrives home from work – can help one to segment out moments of the day for focused interaction with co-present others – e.g., family members. However, for participants like Michael and Chris, this did not relieve the stress associated with computing tools and the inability to mentally disconnect from work. The tasks that they had to get back to – a spreadsheet, a presentation, the social niceties of responding to a colleague-friend's email – were always still pressing, lying in wait for their future attention. As a temporary reprieve, a break from technology might feel good, but, contra Turkle (2011),

forms of temporarily putting technology "in its place" was not a solution to problems which were rooted in over-committed and excessive habits of social life, precisely because – contra Morrison and Gomez (2014) – the issues people were experiencing were not about a (lack of) control over technology, but rather a lack of control over a social life that entailed excessive demands on individuals' emotional and practical capabilities.

This argument is underscored by the exploration of computing use and social disengagement on the Pacific Crest Trail in chapter 11 and chapter 12. This examination draws into further relief the ways that the situation of excess and obligation that inspired acts of technology detox was not caused by ICTs alone. The smartphone was not enrolled within the same practices and habits of social life on the PCT as it was in the worlds of middle class family and work. Hikers who used ICTs frequently felt a slightly different set of stresses than middle class workers and families. They had an excuse to leverage technology differently, the context of 'the hike' allowed them to take advantage of an implied/assumed constraint on their possibilities for action in order to enact different kinds of relations with friends and family.

Second, the analysis presented in part II of the dissertation shows that what more focused and concentrated disconnection events *do* for participants is precisely to short-circuit these broader patterns of excess and obligation (see chapter 9). In the emerging area of non-use studies, an over-focus on the technological aspects of the situation, has distracted from attention to what else is happening when people unplug, detox, and disconnect. For example, Lee and Katz (2014) described some surprise in finding that many of their undergraduate study participants described their experience at a weekend-long technology detox retreat positively. On the one hand, this study thus might be understood as further underscoring the arguments of Thulin and Vilhelmson (2010) that youth use of technology has been over-emphasized. However, more importantly for the present argument, Lee and Katz (2014) summarize participants' positive experiences as centered on "rediscover[ing] the value of unmediated, embodied communication without being interrupted by mediated communication for the duration of the trip" (Lee and Katz 2014). In so doing, they completely fail to attend in any way to the fact that the weekend

was also school-sanctioned vacation. The participating students had been given a legitimate excuse to not engage in any work, and to take a break from any social obligations they may have had on campus or to non-co-located relatives and friends via computing technologies. A more careful analysis would take this into account in trying to explain *why* the disconnection event was experienced positively instead of halting the analysis where it started – with the removal of computing.

As I show in part II of the dissertation, stories of popular disconnection (e.g., Thurston 2013; Roberts 2014) – even those written by people who have been pejoratively termed 'disconnectionists' (see Jurgenson 2013) – were not, actually, just *technology* cleanses (see chapter 9 and chapter 10). Rather, these unplugging and rebooting practices might better be understood as ways of leveraging technology non-use to short-circuit a much broader set of expectations regarding individuals' participation in everyday social and economic life. In trying to understand why people experience disconnection as powerful, it is crucial to pay attention to what else is also changing alongside and around the shift in computer usage patterns. Because computing use was never an individual act, but was rather obligated for full and appropriate participation in social life (see chapter 8), a break from computing also always entailed a dramatic context shift. The possibilities for human interaction and participation in social life were transformed because of the technological non-use. Moreover, focused and concentrated disconnection events always consisted of practices of social disengagement beyond the act of non-use – explicitly curtailed social lives and sabbaticals from the office. That is, disconnection events are not just "technology cleanses," but are, more simply, also vacations. Ultimately, disconnection was a means to *other ends* and understanding it as such changes the kinds of conclusions we might draw from studies showing that disconnection events are experienced positively by participants.

Concomitantly, similar experiences of disengagement can be enacted in other ways – a cleanse from technology is not required if one can evince a similar context shift through other means (see chapter 11 and chapter 12). Importantly, however, the culturally accepted rhetoric of technology addiction provided one legitimating reason for individuals to disengage from social life via a detox event. For hikers on the PCT, an alternative rhetoric of wilderness, nature, and human achievement provided the legit-

imating reason to disengage from social life while on the long-distance hike. In the second part of the dissertation, I show that even for people who were able to undertake a more sustained disconnection from technology – often accompanied by a sabbatical from work – upon their eventual return to a more normative social life, staying 'in control' seemed impossible (see section 9.2). As further explored in the second part of the dissertation, disconnection as an activity and event is always temporary and short-term. Because it does not address these broader excesses of daily life directly – but rather by proxy – disconnection can *feel* good, without providing any lasting remedy. As both Roberts and Thurston found, the return to their everyday social lives after their period of disconnection was difficult, and the strategies they had developed while undertaking their sabbatical were no longer proving useful.

In chapter 13, I argue that the "perfect disconnection" was one that was partial. As lamented by others (e.g., Baumer, Burrell, et al. 2015; Kaun and Schwarzenegger 2014; Morrison and Gomez 2014) the binary terminology of use and non-use limits the ways that we might understand technology-in-practice as its experience always exceeds the moment of use, but is neither fully captured by attention to explicit forms of pushback. Analyzing computing as *context* allows us to consider it as part of the scene of life, without ascribing to it a central agentic role. Focusing on things like *arrangements* of technology can help us to make sense of the ways that people are dealing with the potentials of technology and helps us get out of the binary trap of 'use' and 'non-use.' The empirical descriptions in this dissertation show that both "constantly connected" suburban lives and socially-disengaged lives in the wilderness are characterized by punctuated technology use alike. It thus begins to articulate a more synthetic depiction of the use and non-use of ubiquitous computing that draws these two apparent oppositions together as aspects of broader patterns of human interaction, rather than focusing on extreme oppositions – total embrace, adoption, and integration of technology versus rejection, refusal, and resistance.

Ultimately, then, the dissertation underscores an urgent need to shift the non-use and pushback conversation away from a focus on "managing technology" and towards a different foreground – one that might confront the more systemic excesses of contemporary life directly. This does not mean ignoring the role of computing in shaping the context within which social expectations and values are formed

(see, especially, section 7.3 and section 8.3); however, it does mean seriously reconsidering the role of computing technologies as complicit in but not neatly causal of these excesses. In the final section of the dissertation I would like to explore two broader implications of this dissertation for researchers, designers, and educators in HCI and Informatics.

## 14.3 Broader Implications: Provocations for HCI and Informatics

Topically, this dissertation has examined the textures of lived experience and social life given the context of ubiquitous computing. The fieldwork has underscored the importance of computing in a variety of scenes of social life – from the workplace to the home to the wilderness. At the same time, I have also been arguing that we have to look beyond computing to understand the manifestations of affect and experience that these scenes of living-with-and-among-computing engender. Where does the analytic suggestion that we locate computing as part of the context for social life leave us with regards to the questions and concerns raised about the threats of constant connection and the arrival of ubiquitous computing? If disconnection is best understood as a proxy for disengagement from an excessive *social* life rather than a break from a compulsive addiction to a technology, what is the role of computing researchers in the scenes of obligation and excess that I described finding in my fieldwork?

This dissertation is not alone in calling for HCI to shift attention away from the site of interaction and use and towards a foregrounding of human experience and social life (see, e.g., Bødker 1991; Bannon 2011; Verbeek 2015). In September of this year, while I was just completing the final draft of this dissertation in advance of my October defense, Microsoft researcher Alex Taylor made the latest of these calls in an article – for *interactions* magazine, of course – titled "After Interaction." Drawing on feminist interventions in HCI, in particular (Bødker 1991; Suchman 2007), Taylor argues for attention to the ways that technology design and production participate in the making of worlds:

> … under the rubric of HCI and IxD [Interaction Design], we have been giving form to networks that mobilize and entangle not just people and machines, but also produce what we might think of as *worlds* – social, technical, scientific, intellectual, organizational, political, ethical worlds (to name just the obvious). [Taylor:2015, 50]

What does it mean to be engaged in the production of worlds? Self-identifying in the byline for the article as a sociologist, Taylor explicitly leaves open the question of "what this means for the design of specific technologies" (Taylor 2015, 53). I, too, am hesitant to take up the mantle of "designer" or authoritatively suggest that I – a person wholly uninvolved in recent years within the sites and scenes of contemporary technology production – might have straightforward advice for what designers *should* do. Taylor ends with a series of questions – about what other questions designers might begin to ask: "might we ask how we want to understand and design technologies *in* these worlds?" and "can we think of an orientation to design that seeks to thicken the relations, that is about how the multiple worlds – in their combination and through ad dependence on each other – thrive?" (53).

For myself, I'm left wondering what does it mean for HCI that many of its participants are – like Taylor and myself – *not* intimately involved in the everyday design *or* production of the tools and technologies that we study? Even working at Microsoft Research – in the belly of a major technology production institution,[1] as it were – Taylor finds himself a sociologist, and leaves open the question of design. If we are moving away from "implications for design" (Dourish 2006) as the appropriate output of ethnographic research, what are the right kinds of implications for the work of social-science oriented HCI researchers? What are the right implications of a dissertation such as this one for a field that is moving away from "interaction" – the primary keyword in its own name, or more dramatically "reconsidering the H, the C, *and* the I" (Wright 2011, emphasis added)? A sociologist such as Taylor, might derive im-

[1] My allusion to Haraway here (see Haraway 1997, 62, "Located in the belly of the monster, I find the discourses of natural harmony, the non alien, and purity unsalvageable for understanding our genealogy in the New World Order, Inc. …") is of a kindred spirit with Taylor's allusions to Haraway in his own personal biography on his website and, for the record, not meant in any derogatory way. Whether he would always like to claim it – or defend it to other, more academically positioned sociologists – Taylor is, I would argue, in far a more privileged position than many of his academic counterparts, directly embedded within the institutions of contemporary technology production rather than implicitly embroiled in the same contemporary life but positioned to be shouting critique from the outside to those in positions of apparent power.

plications from his empirical work for theories of, social norms, the construction of the family, middle class subjectivities, or organizational behavior. I, however, am getting a degree in "Information and Computer Science" as the title page of this thesis reminds us. It seems, then, the implications of this dissertation must ultimately point back towards the constitution of the discipline – HCI, Informatics. What is our field about, if not design, if not translating lists of user requirements from social science research to an engineering team? What is the role of computing in social life? And are 'we' – as HCI and Informatics researchers and educators, but not strictly always "designers" – part of shaping that role? How?

In further reflecting on the primary contributions of this dissertation as outlined above in section 14.1 and section 14.2, I conclude with a set of two reflections and provocations that begin to outline some possible answers to these questions about the constitution of the discipline, and the role of HCI and Informatics researchers, designers, and educators. These provocations concern the politics of IT and social life, and the ways that 'we' (as designers or not) might intervene in always-already social-technical-political scenes of human experience and social life.

### 14.3.1 What are the Stakes of IT design and creation?

Writing about the arrival of ubiquitous computing and a burgeoning Internet of Things, Light (2011) calls for HCI to engage more directly with the political stakes of the technology it claims to participate in designing.

> Interacting with digital tools has become a worldwide phenomenon, expected to penetrate ever more deeply into our lives through the use of mobile phones, ubicomp technology and the internet of things (International Telecommunications Union (ITU) 2005). We interpret these tools and integrate them into our daily lives according to our sense of who we are and the norms of behaviour that flourish in our circles. (Light 2011, 430)

Light argues that, in recent years, digital technology has become part of intimate human relationships within the realms of both personal life and cultural institutions – that is, beyond the sites of work and learning where computing was perhaps once (imagined to be) confined (Light 2011, 431). In so doing, computing has become "implicate[d] in helping us develop our social structures with a knock-on effect on how we understand and manage ourselves as a world" (431). This situation thus presents a crucial political challenge for the field of HCI, which, traditionally, has seen its role "uncritically in terms of 'making progress' in knowledge, in technology development and, arguably, in societal terms" (431). Light argues that a stance that simply reflects existing values – or, as Bardzell (2010) writes, a "traditional approach to HCI" focused on "serving existing needs" (1304) – is overly conservative for a field whose work is implicated in the intimacy of personal relations and the expanse of social structures. Today, Light (2011) argues, HCI can no longer afford to work in such an apolitical or ahistorical manner (431).

The present dissertation underscores this general call for an attention to politics within HCI. For Light, this argument matters specifically for what she brackets off as "expressive technologies or technologies of identity":

> I talk here of expressive technologies or technologies of identity to describe those tools that are principally about presenting aspects of oneself to others through connecting, discussing and creating, to distinguish them from digital tools that control processes, manage tasks and enable searches, where the primary purpose is instrumental. (430)

However, the evidence presented in this dissertation draws attention to the importance of recognizing that the political stakes of computing design and production are high for even those technologies which do not obviously appear to be "technologies of identity" as identified by Light.

In this dissertation, I have been arguing that computing – in a variety of forms, and as part of the context for lived experience and social life – should be understood as shaping the landscapes of possibility for human action. In so doing, it shapes not only the ways that people might enact social values, but also the very meanings of those values in the first place (see also Harmon and Mazmanian 2013). This shaping

occurs not only within obviously expressive technologies – like Instagram, or an SMS message – but though the more mundane routines of the everyday. Lives and identities and the construction of social values – from togetherness to productivity – are all shaped by the much more boring routines of living a life, and all the everyday techniques and technologies that are part of it – from the automobile to the baby bottle to the smartphone (see chapter 7). New ICTs are no more (or less) complicit in regimes of excess work than the mundane pre-prepared pasta sauce that comes from the store in a jar and might accompany a package of spaghetti noodles that require only 10 minutes of boiling in water to eat; a social media application is no more (or less) complicit in the (re-)production of identity and everyday life than a GPS device. Thus, even those technologies which might appear "instrumental," in Light's words, are part of the construction of what Berlant (2011) calls our "fantasies of the good life" – those socially constructed and partially shared stories of what it means to be a good and successful worker, spouse, parent, friend, person; shaping what it means to meet a challenge, to care for a family member; shaping what it is *to feel* cared for (see also, section 8.2). This dissertation thus draws attention to the work of anthropologist Kathleen Stewart (see Stewart 2007, especially 1–7, 15–16, 41–42, 52–53, 127), and cultural studies scholar Lauren Berlant (see Berlant 2006; 2011, especially 7–14) as relevant to an HCI that might also attend to the politics of the ordinary, that might also begin to recognize seemingly instrumental technologies as crucial sites of the production of social value, lived experience, and the development of attachments to the everyday – often in the form of an optimism for a good life that design participates in narrating, defining, and promising (see also Harmon and Mazmanian 2013).

Thus, as part of the context for the ongoing enactment and (re-)production of culture, the political stakes are high even for computing technologies which appear simply instrumental, the kind of background infrastructure for other practices of expression and social participation. That contemporary optimistic attachments are often "cruel" as Berlant argues – premised on unattainable fantasies of a good life and characterized by "compromised conditions of possibility" (Berlant 2006, 21) – further raises the stakes of work in HCI. Indeed, as scholars in non-use studies have argued, technology often seems to "over-promise and under-deliver" (Morrison and Gomez 2014; see also Cowan 1983). Ultimately, this dissertation shows that what matters most about computing is often less about the specific features

of a device, or about some circumscribed moment of use, but rather, what *else* its use makes possible (see chapter 8, especially section 8.1). Furthermore – and as I argue in more detail in chapter 8 (see, especially, section 8.3) – the apparent opportunities of computing tend towards becoming obligations over time and over social adoption. Appropriate participation in social life comes to require the use of computing tools, in mundane and routine ways, just as the use of the automobile, the freeways system has become a habituated obligation for residents of southern California (in addition to chapter 8; see also, chapter 11, and especially, section 11.3 on the social obligation to use computing in order to appropriately participate in the event of the thru-hike).

Over a decade ago, Wyatt (2003) argued that by neglecting to study non-use as anything other than a "a deficiency to be remedied" (68), researchers of "technology-in-practice" were implicitly supporting the kind of "uncritical" "making progress" that Light (2011) argues against. Wyatt (2003) warned that this stance could be complicit in leading towards a situation of coerced use:

> Will the cyberworld come to dominate the physical world to anything like the same extent as cars and the associated socio-technical system? Is it possible to turn off the machine? Or will everyone's choices come to be shaped by the Internet, just as many people's transport choices are influenced by the automobile whether or not they own one? The shift of retail outlets from town centers to out-of-town shopping centers makes life more difficult for non-drivers. Similarly, will the disappearance of offline information sources limit people's ability to participate in public life? (72)

This dissertation suggests that, in many ways, such a situation has come to pass. Although, perhaps, the binary construction of 'cyberworld' and 'physical world' might offend some contemporary scholars of technology, the bigger point that computing technologies are taken for granted as part of the context for routine, normative, social life remains relevant. Experiments in disconnection further draw this situation of expected/presumed computing use into relief. It is the very centrality of computing to the mundane routines of the everyday that makes it possible for non-use to create the space for new experiences during one's participation in an event of technological 'disconnection' (see chapter 10). That

is, disconnection is effective precisely because it short-circuits the everyday routines of social life and habit. Disconnection acts as a proxy for severing ties laden with obligation and expectation (see also, chapter 9). For this reason, disconnection is also always experienced as a temporary event, and requires an explicit attention to the disruption it will cause and a legitimating excuse (see section 10.1 and section 12.2).

If computing use is required for full participation in social life, then the political stakes of HCI are not just those of individual experience, but of shared citizenship and human belonging in cultural worlds. Thus, in addition to the political stakes of personal identity that Light (2011) draws to our attention, this dissertation also draws attention to the political importance of recognizing the design of computing – even those tools which seem mundane and 'purely' instrumental – as a way of materializing, contributing to, and enforcing the definition of what it means to be a fully-participating contemporary citizen.

For HCI, this provocation suggests the need for two key shifts. These shifts are not so much about the particular objects we design or specific practices we employ, but in the ways that we frame and locate the broader goals and responsibilities of the discipline. Echoing and expanding on Bardzell (2010) and Light (2011), this dissertation argues that we must shift away from an ahistorical and apolitical frame of working and towards an explicit grappling with the political dimensions of our research, design, and education – and not just for technologies of identity, but for all of the apparently mundane and instrumental forms of computing we also study and produce. Alongside this shift towards the political, HCI must also begin to see research and design as things which always function at the level of citizenship and the production of culture rather than the level of individual experience and gaps between practice and features. Whether we intend or not, we are always designing for broader social groups, rather than individuals or isolated subgroups.

### 14.3.2 How does computing come to matter in everyday life? How can we responsibly intervene?

Given these high stakes, what can – and should – we do, as researchers, designers, and educators in HCI and Informatics?

Traditionally, HCI has focused on identifying (and attempting to close or narrow) the 'gap' between existing practice and technological capabilities as its primary site of inquiry and the location for design improvements (see Jackson and Buyuktur 2014). Impacts of technology have generally been imagined as situated and local – typically at the site of *individual* practice or among the social relations immediately proximate to technology use. For example, attention to the effects of mobile computing has often focused on specific cases of mobile communication and new standards of responsiveness, or new forms of interruption. Attempts to design responsibly, likewise, are typically grounded in the *a priori* identification of 'values,' which might then be designed into technologies (with B. Friedman 1996, being a somewhat canonical cite; recent prominent works include Borning and Muller 2012; Alsheikh, Rode, and Lindley 2011). Even for those works which trouble the notion of universal values (e.g., Le Dantec, Poole, and Wyche 2009), the notion that values exist *in advance* of technology use, and might be more or less neatly embedded into the system through the design process generally persists in the literature.

The evidence presented in this dissertation complicates the possibility of straightforward responsible action by showing how particular designed technologies do not always neatly reproduce the intentions of the designer – either practically or politically. In this dissertation, I have argued that, when viewed as part of the context for social life, computing can be seen for the ways that it is more subtly and indirectly experienced. In part, the ripple-out effects of mobile computing have as much to do with making possible a late-night work session in front of the television as they have to do with accessibility and responsiveness. However, the more important point, is that mobile computing is part of a broader assemblage of technologies that make possible an optimistic relationship to a fantasy of, for example, "doing it all" (e.g, Slaughter 2012; see also, Harmon and Mazmanian 2013).

In this light, Sengers (2011) asked whether it was possible for IT design to "compete with a pervasive cultural atmosphere of overwork and overload?" In this provocation, I would like to suggest that the answer to this question might be yes – but a kind of partial and tentative yes that recognizes from the start that technology never 'acts' – directly or alone or otherwise. Understanding computing as partially constituting the context for social life suggests a different orientation to design – and research – than a kind of attention that focuses on 'use' and action at the site of the object, whether understood 'culturally' or 'materially' or socio-materially. Moreover, it requires a different orientation to the kinds of agency we have historically ascribed both to designers and to objects. I want to suggest that a question of 'competition' is the wrong kind of thing to ask, because agency and causality are not usefully locatable.

The trouble for Sengers (2011) seems to revolve around an implicit question of agency – if we recognize the importance of culture for shaping the use and design of technology, then does technology design retain any useful power? This dissertation shows that computing technology – in the designed capacities it affords and offers up as possibilities for human action – matters for shaping the very culture that seems also so powerful in shaping human experience (and feeding back into the design of newer technologies). One way to make sense of this, and as scholars in STS have long-argued, is to see technology as co-constitutive with social practice and culture. A perspective of mutual shaping, co-constitution, or sociomateriality now dominates analyses of the relationship between society and technology across a wide range of disciplines (e.g., Knorr Cetina 1997; Suchman 2007; Wajcman 2008; Orlikowski 2010; Wajcman 2015) – setting itself apart from prior framings of the relationship which emphasized the primacy of either the social (e.g. Pinch and Bijker 1984; Bijker, Hughes, and Pinch 1987) or the technical (e.g. Ellul 1964; Postman 1993). Taking action – from a sociomaterial, co-constitutive, or mutual shaping perspective – would seem possible from *many* vantage points.

However, what I want to suggest here, is that we might step back a bit from this question of whether there is *any* total *or partial* agency to be found or located in objects, and by historical association in their designers or creators. Rather, following Haraway (1997), I would like to suggest that agency emerges in relations, at sites where there are differentials. Agency is not in a *thing*, but is an ongoing happening

that is never neatly willed entirely freely, but always attached, dragging, pulling, going along with, the "sticky economic, technical, political, organic, historical, mythic, and textual threads that make up its [a technoscientific being's] tissues" (Haraway 1997, 68; see, also Stewart 2007, especially 59, 86).The point then, is that none of these "relations among the technical, mythic, economic, political, formal, textual, historic, and organic" are strictly *causal*, but still, "the *articluations* [of these relations] are consequential; they matter" (Haraway 1997, 68-69, emphasis added).

How do we act responsibly for our participation in articulating certain relations, without having control over causality? As Light (2011) suggests, we might – inspired by feminist and queer theory – think of our role as one less of designing objects with perfect agency, but rather of a more open-ended 'troubling' the everyday and the status quo. Light envisions this in terms of various mostly speculative design projects, but I would like to suggest that this is ultimately always the work of the designer and researcher. Even in the mundane, when we envision ourselves as 'fixing' a little problem – tidying up a calendar application, making a task more efficient – we are troubling the mundane and ordinary articulations of how beings relate and live among and with each other – people, information, environments, institutions.

An approach of troubling stands in sharp contrast to prior work on politics and value in HCI design (e.g., Le Dantec, Poole, and Wyche 2009; Alsheikh, Rode, and Lindley 2011) and also in contrast to prior attempts to integrate a feminist perspective with HCI practice by drawing attention to a new set of values such as "pluralism, participation, advocacy, ecology, embodiment, and self-disclosure" (Bardzell 2010). Instead, as Light (2011) suggests, the purpose of troubling is to "make a space for flexible interactions of the future, rather than stipulate a desired outcome in societal terms" (436). Designing, as Light suggests "for enhanced subversion," is "an alternative to adopting a set of values *now* for use *later*" (436). Light suggests, then, a series of examples that "embrace a certain mischief" rather than "merely underdetermining design" (436). These cases of forgetting, obscuring, cheating, and eluding are framed as examples of "designing against the strengths of computing" (Light 2011).

Her adaptation of troubling for an HCI audience is a useful one – and I think begins to respond to the questions faced by researchers like Sengers (2011), who have found the weight of culture and history

troublesome for a project of design that has historically envisioned itself as an arbiter of control – taking control of a situation and fixing it with a new technology, giving control to users to master their own lives in new ways, or critiquing the ways that technology takes control away. However, I want to suggest that her particular specification to design "against" the "strengths of computing" is not the only outlet for a kind of design and research that might relinquish an authoritative (and arrogant) grasp for control in favor of a less-agentic, but still intentional attempt to either misdirect the status quo or play into already existing 'swerves' of social life and technoscientific progress. As Haraway suggests, there is power in telling stories:

> It is a way of groping a world who vast normality – the massive, established disorder of it all – invades our dreams and demands our action. If we can trope this world, we can – literally – make it swerve, make it turn. [Haraway:1997, 102]

Thus, I want to re-iterate here some of my prior suggestions that as members of the HCI community, we might begin to think of ourselves as storytellers (see Harmon and Mazmanian 2013). As designers, rather than imagining ourselves as creating objects that might be then dropped fully-formed as impositions on the world (see also Stewart 2007, 1), we might see ourselves as telling stories through form, through the potentials for interaction we bring into being, and through the kinds of material signification we rely on in creating new technoscientific artifacts. As researchers and educators we might begin to "resist the simplification of our findings and avoid clearcut divisions between good and bad" (Harmon and Mazmanian 2013, 1059), opting instead for drawing attention to instability and – crucially – by beginning to articulate fantasies of 'good' lives that revolve around anything other than an idealized stability.

This notion of design-as-storytelling, includes, then, a move away from the idea that we might design objects and artifacts that neatly "fit comfortably within everyday routines and augment them without losing or disrupting the qualities that make them what they are" (Tolmie et al. 2002). Rather than a fixation on stability and the status quo, storytelling emphasizes a livedness to design work, research, and computing artifacts themselves (see also Cohn 2013). Some researchers have taken up similar orientations

to troubling the status quo within the context of speculative design projects and targeted "critical" work – designs that verge on art projects more so than ordinary artifacts. However, echoing my argument in the previous section, I would like to argue for recognizing and embracing the ways that mundane designed objects might also engage in kinds of troubling. Computation – like any other human technology – always somehow reshapes the landscapes of possibility for human action and social life – and the next technologies that will follow in its apparent wake. As this dissertation has shown, often, this shaping is subtle and from the apparent background, shaping what's taken for granted as reasonable or possible, rather than a direct kind of intervention or clear causal change. Rather than designing for the status quo, attempting to re-tell the same stories again by making technologies fit already existing needs, we might – humbly – attempt to leverage the possibilities of a more indirect troubling in our research and design endeavors.

This orientation also suggests new opportunities for the role of social science within HCI, in particular. Rather than attempting to more fully understand social life and culture so that we can better design for an ever-more-specific particular user, the role of social science might also include a more meso-level research agenda at the intersections of the ordinary as enacted and unfolding in particular moments of lived experience with the generality of technological objects and systems that circulate with some degree of ubiquity as "Apple iPhones" or "e-mail." Rather than seeking to contextualize and more fully or thickly capture the nuance of the particular in order to customize each technology to a new specific setting, we might also suggest opportunities for troubling within those ordinary and mundane and generic objects and systems that shape the everyday. Taking a diversity of potential forms – designed material artifacts, written arguments, documentaries, and simply spoken language, conversation – storytelling also begins to unite the work of 'designers' and 'researchers.' We are jointly implicated in the work of crafting stories and fantasies about what computing does and does not offer, what people living in a context of ubiquitous computing are already doing and desire to do differently, and what kinds of things people might desire or be expected to do or attempt in the future.

This provocation thus suggests a need for two more shifts in the envisioning of HCI. We might shift our understanding of our purposed outcome from one of designing fully-articulated objects, to thinking of ourselves as telling stories that will be re-told and continually re-worked, subtly, in that re-telling. This storytelling might speak to engineering departments within industrial settings – aligning with the traditional outcomes of an HCI that is oriented towards design as its output. It might also more systematically invite other audiences, both industrially – marketing departments, business strategy, human resources departments – and not – local communities, journalists, policy makers, educators. Secondly, and in concert with this broadening of audiences and shift from material design to a more broadly envisioned storytelling, we might shift our tactics from attempts to grasp perfectly directed intentional agency, to a kind of improvisational troubling and playing into the swerve: an open-ended work that disturbs and provokes, intervening in the ongoing production of culture, rather than needs and gaps identification followed by the imposition of solutions on such a neatly diagnosed and problematized world.

# Bibliography


Abowd, Gregory D. 2012. “What Next, Ubicomp?: Celebrating an Intellectual Disappearing Act.” In *Proceedings of the 2012 ACM Conference on Ubiquitous Computing*, 31–40. UbiComp ’12. Pittsburgh, Pennsylvania: ACM. doi:10.1145/2370216.2370222.

Abowd, Gregory D, and Elizabeth D Mynatt. 2000. “Charting past, present, and future research in ubiquitous computing.” *ACM Transactions on Computer-Human Interaction (TOCHI)* 7 (1): 58.

Agger, Ben. 2004. *The virtual self: a contemporary sociology*. Wiley-Blackwell.

Agre, Philip. 2002. “Cyberspace As American Culture.” *Science as Culture* 11, no. 2 (June): 171–189.

Alcorn, Katrina. 2013. *Maxed Out: American Moms on the Brink.* Seal Press.

Alsheikh, Tamara, Jennifer A. Rode, and Siân E. Lindley. 2011. “(Whose) value-sensitive design: a study of long-distance relationships in an Arabic cultural context.” In *Proc. CSCW 2011*, 75–84. Hangzhou, China.

Ames, Morgan G., Janet Go, Joseph ’Jofish’ Kaye, and Mirjana Spasojevic. 2010. “Making Love in the Network Closet: The Benefits and Work of Family Videochat.” In *Proceedings of the 2010 ACM Conference on Computer Supported Cooperative Work*, 145–154. CSCW ’10. Savannah, Georgia, USA: ACM. doi:10.1145/1718918.1718946.

Baek, Raphaella. 2013. “At Tech-free Camps, People Pay Hundreds To Unplug.” *NPR: All Tech Considered* (July 5). URL: http://www.npr.org/sections/alltechconsidered/2013/07/05/198402213/at-tech-free-camps-people-pay-hundreds-to-unplug.

Baillie, Lynne, David Benyon, C Maccaulay, and M G Petersen. 2003. “Investigating design issues in household environments.” *Cognition, Technology & Work* 5, no. 1 (April): 33–43. doi:10.1007/s10111-002-0116-5.

Bannon, Liam J. 1989. “A pilgrim’s progress: From cognitive science to cooperative design” [in English]. *AI & SOCIETY* 4 (4): 259–275. doi:10.1007/BF01894031.

———. 2011. “Reimagining HCI: Toward a More Human-Centered Perspective.” *interactions* (July + August): 50–57. doi:10.1145/1978822.1978833.

Bardzell, Shaowen. 2010. “Feminist HCI: Taking Stock and Outlining an Agenda for Design.” In *Proc. CHI 2010,* 1301–1310.

Barley, Stephen R, Debra E Meyerson, and Stine Grodal. 2011. “E-mail as Source and Symbol of Stress.” *Organization Science* 22, no. 4 (July): 887–906. doi:10.1287/orsc.1100.0573.

Baumer, Eric P S, Phil Adams, Vera D. Khovanskaya, Tony C. Liao, Madeline E. Smith, Victoria Schwanda Sosik, and Kaiton Williams. 2013. “Limiting, Leaving, and (Re)Lapsing: An Exploration of Facebook Non-use Practices and Experiences.” In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems,* 3257–3266. CHI ’13. Paris, France: ACM. doi:10.1145/2470654.2466446.

Baumer, Eric P S, Morgan G Ames, Jenna Burrell, Jed R Brubaker, and Paul Dourish, eds. 2015. “Non-Use of technology: Perspectives and Approaches (Special Issue).” 20, no. 11 (November). URL: http://firstmonday.org/ojs/index.php/fm/issue/view/463.

Baumer, Eric P S, Jenna Burrell, Morgan G. Ames, Jed R. Brubaker, and Paul Dourish. 2015. “On the Importance and Implications of Studying Technology Non-use.” *interactions* (New York, NY, USA) 22, no. 2 (February): 52–56. doi:10.1145/2723667.

Bennett, Jane. 2009. *Vibrant Matter: A Political Ecology of Things.* Duke University Press, December.

Berlant, Lauren. 2006. “Cruel Optimism.” *differences* 17 (5): 20–36.

———. 2011. *Cruel Optimism.* Duke University Press Books, October.

Bernstein, Elizabeth. 2011. “Your BlackBerry or Your Wife: When the Whole Family Is Staring at Screens, Time to Try a Tech Detox.” *Wall Street Journal* (January).

Bijker, Wiebe E. 1995. *Of Bicycles, Bakelites, and Bulbs: Toward a Theory of Sociotechnical Change.* MIT Press.

Bijker, Wiebe E., Thomas Parke Hughes, and Trevor J. Pinch. 1987. *The Social construction of technological systems: new directions in the sociology and history of technology.* MIT Press.

Bittman, Michael, Judith E. Brown, and Judy Wajcman. 2009. “The mobile phone, perpetual contact and time pressure.” *Work, Employment & Society* 23 (4): 673–691. doi:10.1177/0950017009344910.

Blomberg, Jeanette, and Helena Karasti. 2013. “Reflections on 25 Years of Ethnography in CSCW.” *Comput. Supported Coop. Work* (Norwell, MA, USA) 22, nos. 4-6 (August): 373–423. doi:10.1007/s10606-012-9183-1.

Bødker, Susanne. 1991. *Through the interface : a human activity approach to user interface design.* Erlbaum.

———. 2006. “When second wave HCI meets third wave challenges.” In *Proc. NordiCHI ‘06,* 1–8.

Borning, Alan, and Michael Muller. 2012. “Next Steps for Value Sensitive Design.” In *Proc. CHI 2012*.

Boswell, Wendy R., and Julie B. Olson-Buchanan. 2007. “The Use of Communication Technologies After Hours: The Role of Work Attitudes and Work-Life Conflict.” *Journal of Management* 33 (4): 592–610. doi:10.1177/0149206307302552.

boyd, danah, and Kate Crawford. 2012. “Critical Questions for Big Data: Provocations for a cultural, technological, and scholarly phenomenon.” *Information, Communication & Society* 15 (5): 662–679. doi:10.1080/1369118X.2012.678878.

Brubaker, Jed R., and Gillian R. Hayes. 2011. “”We Will Never Forget You [Online]”: An Empirical Investigation of Post-mortem Myspace Comments.” In *Proceedings of the ACM 2011 Conference on Computer Supported Cooperative Work*, 123–132. CSCW ’11. Hangzhou, China: ACM. doi:10.1145/1958824.1958843.

Card, Stuart, Thomas P Moran, and Allen Newell. 1983. *The Psychology of Human-Computer Interaction.* Lawrence Earlbaum Assoc.

———. 1986. “The Model Human Processor: An Engineering Model of Human Performance.” In *Handbook of Perception and Human Performance*, edited by K R Boff, L Kaufman, and J P Thomas, 2:1–35.

Carr, Nicholas. 2011. *The Shallows: What the Internet is Doing to Our Brains.* W. W. Norton & Company.

Castells, Manuel. 2010. *The Rise of the Network Society*. Second, with new preface. Vol. 1. The Information Age: Economy, Society, and Culture. Oxford: Wiley-Blackwell.

Chesley, Noelle. 2005. “Blurring Boundaries? Linking Technology Use, Spillover, Individual Distress, and Family Satisfaction” [in English]. *Journal of Marriage and Family* 67 (5): 1237–1248. URL: http://www.jstor.org/stable/3600309.

Clark, Andy. 2003. *Natural-Born Cyborgs: Minds, Technologies, and the Future of Human Intelligence.* Oxford University Press. (Accessed March 18, 2009).

———. 2008. *Supersizing the Mind.* Oxford University Press.

Clarke, Adele. 2005. *Situational analysis: grounded theory after the postmodern turn.* SAGE, March.

Cohn, Marisa Leavitt. 2013. “Lifetimes and Legacies: Temporalities of Sociotechnical Change in a Long-Lived System.” PhD diss., University of California, Irvine.

Coleman, Simon, and Pauline von Hellermann. 2011. “Introduction.” In *Multi-sited Ethnography: Problems and Possibilities in the Translocation of Research Methods*, edited by Simon Coleman and Pauline von Hellermann. Routledge.

Colin, Chris. 2013. “Into the Woods and Away from Technology.” *The New Yorker* (June). URL: http://www.newyorker.com/tech/elements/into-the-woods-and-away-from-technology.

Conley, Susan. 2012. “Smartphone Addiction: Why I’m Putting the Phone Down.” *The Huffington Post* (April 7). (Accessed January 21, 2015). URL: http://www.huffingtonpost.com/susan-conley/smartphone-addiction-_b_1407091.html.

Connelly, Marjorie. 2010. “Your Brain on Computers: More Americans Sense a Downside to an Always Plugged-In Existence.” *The New York Times* (June).

Considine, Austin. 2010. “And on the Sabbath, the iPhones Shall Rest.” *New York Times* (March 17). URL: http://www.nytimes.com/2010/03/18/fashion/18sabbath.html.

Corbin, Juliet M, and Anselm C Strauss. 2007. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. 3rd. Sage Publications, Inc, November.

Cowan, Ruth Schwartz. 1983. *More work formother: The ironies of householdtechnology from the open hearth to the microwave*. Basic Books.

Coyne, Richard. 2014. “Nature vs. Smartphones.” *Interactions* 21, no. 5 (September): 24–31. doi:10.1145/2656933.

Crawford, Kate. 2012. “Four Ways of Listening with an iPhone.” In *Studying Mobile Media: Cultural Technologies, Mobile Communication, and the iPhone,* edited by Larissa Hjorth, Jean Burgess, and Ingrid Richardson, 213–228. Routledge.

Darrah, Charles, James M. Freeman, and J.A. English-Lueck. 2007. *Busier than Ever! Why American Families Can’t Slow Down.* Stanford University Press.

Derks, Daantje, Lieke L. ten Brummelhuis, Dino Zecic, and Arnold B. Bakker. 2014. “Switching on and off … : Does smartphone use obstruct the possibility to engage in recovery activities?” *European Journal of Work and Organizational Psychology* 23 (1): 80–90. doi:10.1080/1359432X.2012.711013.

Digtal Detox. 2014. “Digital Detox.” URL: http://thedigitaldetox.org.

Dilley, R.M. 2002. “The problem of context in social and cultural anthropology.” *Language & Communication* 22 (4): 437–456. doi:http://dx.doi.org/10.1016/S0271-5309(02)00019-8.

Dokoupil, Tony. 2012. “iCrazy: Panic. Depression. Psychosis. How connection addiction is rewiring our brains.” *Newsweek* (July).

Donahue, Wendy. 2015. “Father-son videos make a case for National Day of Unplugging.” *Chicago Tribune* (March). URL: http://www.chicagotribune.com/lifestyles/parenting/ct-jk-0303-national-day-of-unplugging-20150303-story.html.

Dourish, Paul. 2004. “What we talk about when we talk about context.” *Personal and Ubiquitous Computing* (London, UK, UK) 8, no. 1 (February): 19–30.

———. 2006. “Implications for design.” In *Proc. CHI 2006,* 541–550. ACM ID: 1124855. Montréal, Québec, Canada.

Dourish, Paul, and Genevieve Bell. 2011. *Divining a digital future : mess and mythology in ubiquitous computing.* Cambridge Mass.: MIT Press.

Duxbury, Linda, and Rob Smart. 2011. “The “Myth of Separate Worlds”: An Exploration of How Mobile Technology has Redefined Work-Life Balance” [in English]. In *Creating Balance?,* edited by Stephan Kaiser, Max Josef Ringlstetter, Doris Ruth Eikhof, and Miguel Pina e Cunha, 269–284. Springer Berlin Heidelberg. doi:10.1007/978-3-642-16199-5_15.

Ellul, Jacques. 1964. *The Technological Society.* Vintage.

Foot, Kirsten. 2014. “The Online Emergence of Pushback on Social Media in the United States: A Historical Discourse Analysis” [in en]. *International Journal of Communication* 8 (April): 30. (Accessed January 21, 2015). URL: http://ijoc.org/index.php/ijoc/article/view/2376.

Friedman, Batya. 1996. “Value-sensitive design.” *interactions* 3 (6): 17–23.

Friedman, Steve. 2015. “Heaven Sent.” *Backpacker Magazine* (June). URL: http://www.backpacker.com/trips/long-trails/pacific-crest-trail/hiker-heaven/.

Gergen, Kenneth J. 2002. “The challenge of absent presence.” In *Perpetual contact: mobile communication, private talk, public performance,* edited by James E Katz and Mark A Aakhus, 227–241. Cambridge University Press, April.

Glascock, Taylor. 2015. “”Hipster Barbie Is So Much Better at Instagram Than You”.” *Wired Magazine* (September 30). URL: http://www.wired.com/2015/09/hipster-barbie-much-better-instagram/.

Glaser, Barney G, and Anselm L Strauss. 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Aldine Publishing Company.

González, Victor M., and Gloria Mark. 2004. “”Constant, Constant, Multi-tasking Craziness”: Managing Multiple Working Spheres.” In *Proc. CHI 2004,* 113–120. CHI ’04. Vienna, Austria: ACM. doi:10.1145/985692.985707.

Grant, Diana, and Sara Kiesler. 2001. “Blurring the Boundaries: Cell Phones, Mobility and the Line between Work and Personal Life.” In *Wireless World: Social and Interactional Aspects of the Mobile Age,* edited by Barry Brown and Nicola Green. Springer.

Green, Sarah, Penny Harvey, and Hannah Knox. 2005. “Scales of Place and Networks: An Ethnography of the Imperative to Connect through Information and Communications Technologies.” *Current Anthropology* 46, no. 5 (December): 805–826.

Gregg, Melissa. 2013. “Presence Bleed: Performing professionalism online.” In *Theorizing Cultural Work: Labour, Continuity and Change in the Creative Industries,* edited by Mark Banks, Rosalind Gill, and Stephanie Taylor. Routledge.

Gregg, Melissa, and Ellie Harmon. 2014. “Mindful Labor.” At Social Media and Psychosocial Wellbeing. Journalism and Media Studies, Rutgers University, Newark, NJ.

Gros, Frédéric. 2014 [2009]. *A Philosophy of Walking.* Translated by John Howe. First publishsed as Marcher, une philosophie. Verso.

Grudin, Jonathan. 1990. “The computer reaches out: The historical continuity of interface design.” *Proc. CHI 1990* (April): 261–268.

Gusterson, Hugh. 1997. “Studying Up Revisited.” *PoLAR: Political and Legal Anthropology Review* 20 (1): 114–119. doi:10.1525/pol.1997.20.1.114.

Haber, Matt. 2013. “A Trip to Camp to Break a Tech Addiction.” *The New York Times* (July). (Accessed January 21, 2015). URL: http://www.nytimes.com/2013/07/07/fashion/a-trip-to-camp-to-break-a-tech-addiction.html.

Haimson, Oliver L., Anne E. Bowser, Edward F. Melcer, and Elizabeth F. Churchill. 2015. “Online Inspiration and Exploration for Identity Reinvention.” In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems,* 3809–3818. CHI ’15. Seoul, Republic of Korea: ACM. doi:10.1145/2702123.2702270.

Haimson, Oliver L., Jed R. Brubaker, Lynn Dombrowski, and Gillian R. Hayes. 2015. “Disclosure, Stress, and Support During Gender Transition on Facebook.” In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing,* 1176–1190. CSCW ’15. Vancouver, BC, Canada: ACM. doi:10.1145/2675133.2675152.

Hallowell, Edward M. 2007. *Crazy Busy: Overstretched, Overbooked, and About to Snap! Strategies for Handling Your Fast Paced Life.* Ballantine Books.

Haraway, Donna J. 1997. *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse™: Feminism and Technoscience.* Routledge, January.

Harmon, Ellie. 2011. “Personal Digital Taxidermy: Imagining the Future-past.” Talk Presented at *Society for the Social Studies of Science (4S)*, Cleveland, OH.

———. 2012a. “Smartphone Intimacies: Shifting Boundaries of HumanMachine Subjectivities.” Talk Presented at *Society for the Social Studies of Science (4S)*, Copenhagen, Denmark.

———. 2012b. “Worlding the smartphone: technologies, people and stories.” Talk Presented At *UCI Visual Studies Conference: Constructing Worlds: Making and Breaking Order*, Irvine, CA, April.

———. 2013. “Information Materialities: What Do They Have To Do With My Work Anyway?” Talk presented at *Symposium on Information Materialities*, Irvine, CA, December.

Harmon, Ellie, and Melissa Mazmanian. 2011. “Smartphones and the social dynamics of busyness.” Workshop Paper for *NSF Sponsored symposium: ‘Slow Down, You Move Too Fast’: Rethinking the Culture of Busyness and IT*, Seattle, WA, May.

———. 2013. “Stories of the Smartphone in Everyday Discourse: Conflict, Tension & Instability.” In *Proc. CHI 2013,* 1051–1060. Paris, France.

Harrison, Steve, Phoebe Sengers, and Deborah Tatar. 2011. “Making epistemological trouble: Third-paradigm HCI as successor science.” *Interacting with Computers* 23 (5): 385–392. doi:10.1016/j.intcom.2011.03.005.

Harrison, Steve, Deborah Tatar, and Phoebe Sengers. 2007. “The Three Paradigms of HCI.” *Proc. CHI 2007 EA: alt.chi.*

Hayes, Gillian R, Karen G Cheng, Sen H Hirano, Karen P Tang, Marni S Nagel, and Dianne E Baker. 2014. “Estrellita: a mobile capture and access tool for the support of preterm infants and their caregivers.” *ACM Transactions on Computer-Human Interaction (TOCHI)* 21 (3): 19.

Healy, Kieran. 2015. “Fuck Nuance.” Working Paper from personal website. A version of this paper was presented at the Theory Section Paper Session on the Promise and Pitfalls of Nuance in Sociological Theory, American Sociological Association Meetings, 2015, August. URL: http://kieranhealy.org/files/papers/fuck-nuance.pdf.

Hendricks, Dana. 2013. “How difficult can signs be?” *PCT Communicator* (Summer): 3–6.

Ho, Karen. 2009. *Liquidated: an ethnography of Wall Street.* Duke University Press.

Hochschild, Arlie Russell. 1997. *The Time Bind: When Work Becomes Home and Home Becomes Work.* Metropolitan.

Hoffner, Cynthia A, Sangmi Lee, and Se Jung Park. 2015. ““I miss my mobile phone!”: Self-expansion via mobile phone and responses to phone loss.” *New Media & Society:* 1–17. doi:10.1177/1461444815592665.

Hollan, J, E Hutchins, and D Kirsh. 2001. “Distributed Cognition: Toward a New Foundation for Human-Computer Interaction Research.” In *Human-Computer Interaction in the New Millennium,* edited by J M Carroll, 75–94. ACM Press.

Huffington, Arianna, and Debbie Rozman. 2013. “New Technology Showcase: GPS for the Soul.” *Wisdom 2.0* (February). URL: http://youtu.be/7lR-fOXd67sQ.

International Telecommunications Union (ITU). 2005. *ITU Internet Reports 2005: The Internet of Things,* November. URL: www.itu.int/internetofthings.

Ito, Mizuko, and Diasuke Okabe. 2005. “Technosocial Situations: Emergent Structurings of Mobile Email Use.” In *Personal, Portable, Pedestrian: Mobile Phones in Japanese Life,* edited by Mizuko Ito, Misa Matsuda, and Diasuke Okabe, 257–273. MIT Press.

Jackson, Steven J., and Ayse Buyuktur. 2014. “Who Killed WATERS? Mess, Method, and Forensic Explanation in the Making and Unmaking of Large-scale Science Networks.” *Science Technology Human Values* 39, no. 2 (March): 285–308. doi:10.1177/0162243913516013.

Jarvenpaa, Sirkka L., and Karl R. Lang. 2005. “Managing the Paradoxes of Mobile Technology.” *Information Systems Management* 22 (4): 7–23. doi:10.1201/1078.10580530/45520.22.4.20050901/90026.2.

Jawbone. 2011. *INTRODUCTING UP by JAWBONE | Welcome to a Healthier You.* Email, November.

Jenkins, Henry. 2006. *Convergence Culture: Where Old and New Media Collide.* New York University Press.

Jurgenson, Nathan. 2013. “The Disconnectionists” [in English]. *The New Inquiry* 22 (November). (Accessed January 21, 2015). URL: http://thenewinquiry.com/essays/the-disconnectionists/.

Karasti, Helena, Karen S Baker, and Florence Millerand. 2010. “Infrastructure Time: Long-term Matters in Collaborative Development” [in English]. *Computer Supported Cooperative Work (CSCW)* 19 (3-4): 377–415. doi:10.1007/s10606-010-9113-z.

Katz, James E, and Mark A Aakhus. 2002. *Perpetual contact: mobile communication, private talk, public performance.* Cambridge University Press.

Kaun, Anne, and Christian Schwarzenegger. 2014. “No media, less life?Önline disconnection in mediatized worlds.” *First Monday* 19 (11). URL: http://firstmonday.org/ojs/index.php/fm/article/view/5497.

Kelly, Heather. 2014. “Go offline for ’National Day of Unplugging’.” *CNN* (March). URL: http://www.cnn.com/2014/03/06/tech/mobile/day-unplugging/.

“Kinfolk Magazine.” n.d. URL: http://www.kinfolk.com/.

Kline, Ronald R. 2003. “Resisting Consumer Technology in Rural America: The Telephone and Electrification.” In *How Users Matter: The Co-construction of Users and Technology,* edited by Oudshoorn and Pinch. MIT Press.

Kline, Ronald, and Trevor Pinch. 1996. “Users as Agents of Technological Change: The Social Construction of the Automobile in the Rural United States” [in English]. *Technology and Culture* 37 (4): 763–795. URL: http://www.jstor.org/stable/3107097.

Knorr Cetina, Karin. 1997. “Sociality with Objects: Social Relations in Postsocial Knowledge Societies.” *Theory, Culture & Society* 14 (4): 1–30. doi:10.1177/026327697014004001.

Kolb, Darl G., Arran Caza, and Paul D. Collins. 2012. “States of Connectivity: New Questions and New Directions.” *Organization Studies* 33 (2): 267–273. doi:10.1177/0170840611431653.

Le Dantec, Christopher A, Erika Shehan Poole, and Susan P Wyche. 2009. “Values as lived experience: evolving value sensitive design in support of value discovery.” In *Proc. CHI 2009,* 1141–1150. Boston, MA, USA.

Lee, Sun Kyong, and James Katz. 2014. “Disconnect: A case study of short-term voluntary mobile phone non-use.” *First Monday* 19 (12). URL: http://firstmonday.org/ojs/index.php/fm/article/view/4935.

Leshed, Gilly, and Phoebe Sengers. 2011. ““I lie to myself that I have freedom in my own schedule”: productivity tools and experiences of busyness.” In *Proc. CHI 2011,* 905–914. Vancouver, BC, Canada.

Leshed, Gilly, Phoebe Sengers, Helen Nissenbaum, Batya Friedman, and Carman Neustaedter. 2011. *“Slow Down, You Move Too Fast”: Rethinking the Culture of Busyness and IT.* CFP NSF Workshop: Grant number IIS-1049359.

Li, Qing. 2010. “Effect of Forest Bathing Trips on Human Immune Function.” *Environmental Health and Preventive Medicine* 15 (1): 9–17.

Light, Ann. 2011. “HCI as heterodoxy: Technologies of identity and the queering of interaction with computers.” *Interacting with Computers* 23:430–438.

Lightman, Alan. 2004. “The World is Too Much With Me.” In *Living with the genie: Essays on technology and the quest for human mastery,* edited by Alan Lightman, Daniel Sarewitz, and Christina Desser. Island Pr.

Lindley, Siân E. 2015. “Making Time.” In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing,* 1442–1452. CSCW ’15. Vancouver, BC, Canada: ACM. doi:10.1145/2675133.2675157.

Lindtner, Silvia, Ken Anderson, and Paul Dourish. 2012. “Cultural Appropriation: Information Technologies As Sites of Transnational Imagination.” In *Proceedings of the ACM 2012 Conference on Computer Supported Cooperative Work,* 77–86. CSCW ’12. Seattle, Washington, USA: ACM. doi:10.1145/2145204.2145220.

Ling, Richard Seyler. 2004. *The mobile connection: the cell phone’s impact on society.* Morgan Kaufmann.

Madrigal, Alexis C. 2012. “Are We Addicted to Gadgets or Indentured to Work?” *The Atlantic* (July).

———. 2013. “’Camp Grounded,’ ’Digital Detox,’ and the Age of Techno-Anxiety.” *The Atlantic* (July 9).

Marcus, George E. 1995. “Ethnography in/of the world system: the emergence of multi-sited ethnography.” *Annual review of anthropology* 24 (1): 95–117.

———. 2009. “Multi-sited Ethnography: Notes and Queries.” In *Multi- sited Ethnography: Theory, Praxis and Locality in Contemporary Research,* edited by Mark-Anthony Falzon, 181–196. Ashgate, April.

Mark, Gloria J, Stephen Voida, and Armand Cardello. 2012. ““A Pace Not Dictated By Electrons”: An Empirical Study of Work Without Email.” In *Proc. CHI 2012.*

Mark, Gloria, Daniela Gudith, and Ulrich Klocke. 2008. “The cost of Interrupted Work: More Speed and Stress.” In *Proc. CHI 2008.*

Martin, Emily. 1995. *Flexible Bodies.* 1st ed. Beacon Press.

Maushart, Susan. 2011. *The Winter of Our Disconnect: How Three Totally Wired Teenagers (And a Mother Who Slept With Her IPhone) Pulled the Plug on Their Technology and Lived to Tell the Tale.* Penguin.

Mazmanian, Melissa. 2006. “Ubiquitous email: Individual experiences and organizational consequences of BlackBerry use.” In *Academy of Management.*

———. 2009. “Understanding the BlackBerry: Negotiating connectivity in different organizational worlds.” PhD diss., Massachusetts Institute of Technology, Sloan School of Management.

———. 2013. “Avoiding the trap of constant connectivity: When congruent frames allow for heterogeneous practices.” *Academy of Management Journal* 56 (5): 1225–1250.

Mazmanian, Melissa, Christine M. Beckman, and Ellie Harmon. (to appear). “Ethnography Across the Work Boundary: Benefits and Considerations for Organizational Studies.” In *Handbook of Innovative Qualitative Research Methods: Pathways to Cool Ideas and Interesting Papers,* edited by Kimberly Elsbach and Roderick Kramer. Routledge.

Mazmanian, Melissa, and Ingrid Erickson. 2014. “The product of availability: understanding the economic underpinnings of constant connectivity.” In *Proc. CHI 2014,* 763–772.

Mazmanian, Melissa, Ingrid Erickson, and Ellie Harmon. 2015. “Circumscribed time and porous time: Logics as a way of studying temporality.” In *Proc. CSCW 2015.*

Mazmanian, Melissa, Wanda J Orlikowski, and JoAnne Yates. 2013. “The Autonomy Paradox: The Implications of Wireless Email Devices for Knowledge Professionals.” *Organization Science* 24 (5): 1337–1357.

Microsoft. 2010. *Really: New Windows Phone 7 Official Ad.* YouTube Video, October. URL: https://www.youtube.com/watch?v=EHlN21ebeak&feature=youtube_gdata_player.

Middleton, Catherine A. 2007. “Illusions of Balance and Control in an Always-on Environment: a Case Study of BlackBerry Users.” *Continuum* 21 (2): 165–178. doi:10.1080/10304310701268695.

Miller, Paul. 2013. “I’m still here: back online after a year without the internet.” *The Verge* (May). (Accessed January 21, 2015). URL: http://www.theverge.com/2013/5/1/4279674/im-still-here-back-online-after-a-year-without-the-internet.

Morozov, Evgeny. 2014. “The Mindfulness Racket The evangelists of unplugging might just have another agenda.” *New Republic* (February).

Morrison, Stacey, and Ricardo Gomez. 2014. “Pushback: Expressions of resistance to the “evertime” of constant online connectivity.” *First Monday* 19 (8). URL: http://firstmonday.org/ojs/index.php/fm/article/view/4902.

Muir, John. 1901. *Our National Parks.* Houghton, Mifflin / Company. URL: https://archive.org/details/nationalparksour00muirrich.

Nardi, Bonnie A. 1996. “Studying Context: A Comparison of Activity Theory, Situated Action Models, and Distributed Cognition.” Chap. 4, edited by Context and Consciousness, 69–102. MIT Press.

Neighmond, Patti, and Richard Knox. 2013. “How ’Crunch Time’ Between School And Sleep Shapes Kids’ Health.” *National Public Radio, Morning Edition* (February 25).

Ochs, Elinor, and Tamar Kremer-Sadlik, eds. 2013. *Fast-Forward Family: Home, Work, and Relationships in Middle-Class America.* University of California Press.

Odom, William, Richard Banks, Abigail Durrant, David Kirk, and James Pierce. 2012. “Slow Technology: Critical Reflection and Future Directions.” In *Proceedings of the Designing Interactive Systems Conference,* 816–817. DIS ’12. Newcastle Upon Tyne, United Kingdom: ACM. doi:10.1145/2317956.2318088.

Odom, William, Mark Selby, Abigail Sellen, David Kirk, Richard Banks, and Tim Regan. 2012. “Photobox: On the Design of a Slow Technology.” In *Proceedings of the Designing Interactive Systems Conference,* 665–668. DIS ’12. Newcastle Upon Tyne, United Kingdom: ACM. doi:10.1145/2317956.2318055.

Oostveen, Anne-Marie. 2014. “Non-use of Automated Border Control Systems: Identifying Reasons and Solutions.” In *Proc. BCS HCI 2014.*

Oprah. 2012. “Oprah’s Favorite Quotes from Wild by Cheryl Strayed.” URL: http://www.oprah.com/oprahsbookclub/Oprahs-Favorite-Quotes-from-Wild-by-Cheryl-Strayed.

Orlikowski, Wanda J. 2010. “The sociomateriality of organisational life: considering technology in management research.” *Cambridge Journal of Economics* 34, no. 1 (January): 125–141.

Pew Research Center. 2015a. “Mobile Technology Fact Sheet.” URL: http://www.pewinternet.org/fact-sheets/mobile-technology-fact-sheet/.

———. 2015b. *The Smartphone Difference.* Technical report. April. URL: http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/.

———. 2015c. “Three Technology Revolutions.” November 11. URL: http://www.pewinternet.org/three-technology-revolutions/.

Pinch, Trevor J., and Wiebe E. Bijker. 1984. “The Social Construction of Facts and Artefacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other.” *Social Studies of Science* 14 (August): 399–441.

Plowman, Lydia, Yvonne Rogers, and Magnus Ramage. 1995. “What Are Workplace Studies For?” In *The Fourth European Conference on Computer- Supported Cooperative Work (ECSCW’95),* 309–324. Stockholm, Sweeden, September.

Pollock, Neil, and Robin Williams. 2009. *Software and organisations: The biography of the enterprise-wide system or how SAP conquered the world.* Routledge.

———. 2010. “e-Infrastructures: How Do We Know and Understand Them? Strategic Ethnography and the Biography of Artefacts.” *Computer Supported Cooperative Work (CSCW)* 19 (6): 521–556.

Portwood-Stacer, Laura. 2012a. “How We Talk About Media Refusal, Part 1: “Addiction”.” *Flow* 16, no. 3 (July). (Accessed January 21, 2015). URL: http://flowtv.org/2012/07/how-we-talk-about-media-refusal-part-1/.

———. 2012b. “How We Talk About Media Refusal, Part 2: Asceticism.” *Flow* 16, no. 6 (September). (Accessed January 21, 2015). URL: http://flowtv.org/2012/09/media-refusal-part-2-asceticism/.

———. 2012c. “How We Talk About Media Refusal, Part 3: Aesthetics.” *Flow* 16, no. 8 (October). (Accessed January 21, 2015). URL: http://flowtv.org/2012/10/how-we-talk-about-media-refusal-part-3-aesthetics/.

———. 2013. “Media refusal and conspicuous non-consumption: The performative and political dimensions of Facebook abstention.” *New Media & Society* 15 (7): 1041–1057. doi:10.1177/1461444812465139.

Postman, N. 1993. *Technopoly: The surrender of culture to technology*. Vintage.

Powers, William. 2010. *Hamlet’s BlackBerry: Building a Good Life in the Digital Age.* Harper-Collins.

Process Collective. 2013. *Wilderness Collective: Trip 000*. Vimeo. URL: https://vimeo.com/55420992.

Rauch, Jennifer. 2011. “The Origin of Slow Media: Early diffusion of a cultural innovation through popular and press discourse, 2002-2010.” *Transformations* 20.

Ribes, David. 2014. “Ethnography of Scaling, or, How to a Fit a National Research Infrastructure in the Room.” In *Proceedings of the 17th ACM Conference on Computer Supported Cooperative Work & Social Computing*, 158–170. CSCW ’14. Baltimore, Maryland, USA: ACM. doi:10.1145/2531602.2531624.

Richtel, Matt. 2010. “Your Brain on Computers: Attached to Technology and Paying a Price.” A version of this article appears in print on June 7, 2010, on page A1 of the New York edition with the headline: Hooked on Gadgets, and Paying a Mental Price. *The New York Times* (June 7).

———. 2012. “Silicon Valley Says Step Away From the Device.” *New York Times* (July 23). URL: http://nyti.ms/MEkOWs.

Riess, Bob, Greg ”Strider” Hummel, and Tom Reynolds. 2002. “ADZPCTKO - The Official Story.” Also archived on the PCT-L mailing list, at http://www.backcountry.net/arch/pct/0205/msg00153.html. (Accessed November 5, 2015). URL: http://pct77.org/adz/official_story.htm.

Roberts, David. 2014. “Reboot or Die Trying: One Man’s Year of Digital Detox.” *Outside Online* (September 2). (Accessed January 21, 2015). URL: http://www.outsideonline.com/outdoor-adventure/media/Reboot-or-Die-Trying.html.

Roberts, Jessica, and Michael Koliska. 2014. “The effects of ambient media: What unplugging reveals about being plugged in.” *First Monday* 19 (8). URL: http://firstmonday.org/ojs/index.php/fm/article/view/5220.

Rogers, Yvonne. 2009. “The Changing Face of Human-Computer Interaction in the Age of Ubiquitous Computing” [in English]. In *HCI and Usability for e-Inclusion,* edited by Andreas Holzinger and Klaus Miesenberger, 5889:1–19. Lecture Notes in Computer Science. Springer Berlin Heidelberg. doi:10.1007/978-3-642-10308-7_1.

Rogers, Yvonne, and Judy Ellis. 1994. “Distributed Cognition: an alternative framework for analysing and explaining collaborative working.” *Journal of Information Technology* 9 (2): 119–128.

Salemi, Vicki. 2010. “Is your child a BlackBerry orphan? Balancing work and family: Workaholics R’Us.” *SheKnows: Parenting.*

Sambasivan, Nithya. 2012. “Production of Use: Reconceptualizing “the User” in Low-income Communities in Urban India.” PhD diss., UC Irvine.

Sambasivan, Nithya, Ed Cutrell, Kentaro Toyama, and Bonnie Nardi. 2010. “Intermediated Technology Use in Developing Communities.” In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems,* 2583–2592. CHI ’10. Atlanta, Georgia, USA: ACM. doi:10.1145/1753326.1753718.

Satchell, Christine, and Paul Dourish. 2009. “Beyond the User: Use and Non-use in HCI.” In *Proceedings of the 21st Annual Conference of the Australian Computer-Human Interaction Special Interest Group: Design: Open 24/7,* 9–16. OZCHI ’09. Melbourne, Australia: ACM. doi:10.1145/1738826.1738829.

Scelfo, Julie. 2010. “Your Brain on Computers: The Risks of Parenting While Plugged In.” *The New York Times* (June).

Schoenebeck, Sarita Yardi. 2014. “Giving Up Twitter for Lent: How and Why We Take Breaks from Social Media.” In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems,* 773–782. CHI ’14. Toronto, Ontario, Canada: ACM. doi:10.1145/2556288.2556983.

Schulte, Brigid. 2014. *Overwhelmed: Work, Love, and Play When No One Has the Time.* Sarah Chrichton Books.

Seaver, Nick. 2015. “The nice thing about context is that everyone has it.” *Media Culture and Society* 37, no. 7 (October): 1101–1109. doi:10.1177/0163443715594102.

Selwyn, Neil. 2003. “Apart from technology: understanding people’s non-use of information and communication technologies in everyday life.” *Technology in Society* 25 (1): 99–116. doi:http://dx.doi.org/10.1016/S0160-791X(02)00062-3.

Sengers, Phoebe. 2011. “What I learned on Change Islands.” *interactions* 18, no. 2 (March).

Sengers, Phoebe, Joseph ’Jofish’ Kaye, K Boehner, J Fairbank, G Gay, Y Medynskiy, and Susan P Wyche. 2004. “Culturally embedded computing.” *Pervasive Computing, IEEE* 3, no. 1 (January): 14–21. doi:10.1109/MPRV.2004.1269124.

Slaughter, Anne-Marie. 2012. “Why Women Still Can’t Have It All.” *The Atlantic* July/August.

Smith, Aaron. 2011. “Smartphone Adoption and Usage.” *Pew Research Center’s Internet & American Life Project* (July).

———. 2012. *The Best (and Worst) of Mobile Connectivity*. Technical report. Pew Internet & American Life Project, November. URL: http://www.pewinternet.org/2012/11/30/the-best-and-worst-of-mobile-connectivity/.

Stafford, Rachel Macy. 2014. *Hands Free Mama: A Guide to Putting Down the Phone, Burning the To-Do List, and Letting Go of Perfection to Grasp What Really Matters!* Zondervan.

Stewart, Kathleen. 2007. *Ordinary Affects.* Duke University Press.

Strathern, Marilyn. 1996. “Cutting the Network.” *The Journal of the Royal Anthropological Institute* 2 (3): 517–535.

Strauss, Anselm C., and Juliet M. Corbin. 1998. *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory.* 2nd. Sage.

Strietelmeier, Julie. 2002. “Handspring Treo 180 Review.” *the gadgeteer* (March 12). URL: http://the-gadgeteer.com/2002/03/12/handspring_treo_180_review/.

Suchman, Lucy A. 1987. *Plans and situated actions : The Problem of Human-Machine Communication.* Cambridge.

———. 2007. *Human-machine reconfigurations: plans and situated actions.* Cambridge University Press.

Taylor, Alex. 2015. “After Interaction.” *interactions* (New York, NY, USA) 22 (September-October): 48–53. doi:10.1145/2809888.

Thulin, Eva, and Bertil Vilhelmson. 2010. “Mobile phones: Transforming the everyday social communication practice of urban youth.” In *The reconstruction of space and time through mobile communication practices,* edited by Rich Ling and Scott W. Campbell, 137–158. Transaction.

Thurston, Baratunde. 2013. “#UNPLUG: My life was crazy, so I disconnected for 25 days. And you should, too.” *Fast Company* (July).

Times, New York. 2010. *First Steps to Digital Detox.* URL: http://roomfordebate.blogs.nytimes.com/2010/06/07/first-steps-to-digital-detox/.

Tolmie, Peter, James Pycock, Tim Diggins, Allan MacLean, and Alain Karsenty. 2002. “Unremarkable computing.” In *Proc. CHI 2002*, 399–406. Minneapolis, Minnesota, USA: ACM. (Accessed May 19, 2010).

Towers, Ian, Linda Duxbury, Christopher Higgins, and John Thomas. 2006. “Time thieves and space invaders: technology, work and the organization.” *Journal of Organizational Change Management* 19 (5): 593–618. doi:10.1108/09534810610686076.

Turkle, Sherry. 2008. “Always-on/Always-on-you: The Tethered Self.” In *Handbook of Mobile Communication Studies*, edited by James E Katz. MIT Press.

———. 2011. *Alone Together: Why We Expect More from Technology and Less from Each Other*. Basic Books.

Urry, John. 2000. *Sociology beyond societies: mobilities for the twenty-first century*. Psychology Press.

Verbeek, Peter Paul. 2015. “Beyond Interaction.” *Interactions* 22 (May-June): 26–31. URL: http://interactions.acm.org/archive/view/may-june-2015/beyond-interaction.

Virilio, Paul. 1997. *Open sky*. Verso.

Wajcman, Judy. 2008. “Life in the fast lane? Towards a sociology of technology and time.” *The British Journal of Sociology* 59, no. 1 (March): 59–77.

———. 2015. *Pressed for Time: The Acceleration of Life in Digital Capitalism.* University of Chicago Press.

Wajcman, Judy, Michael Bittman, and Judith E. Brown. 2008. “Families without Borders: Mobile Phones, Connectedness and Work-Home Divisions.” *Sociology* 42 (4): 635–652. doi:10.1177/0038038508091620.

Wajcman, Judy, and Emily Rose. 2011. “Constant Connectivity: Rethinking Interruptions at Work.” *Organization Studies* 32 (7): 941–961. doi:10.1177/0170840611410829.

Weiser, Mark. 1991. “The computer for the 21st century.” *Scientific American* (September).

Williams, Amanda, Silvia Lindtner, Ken Anderson, and Paul Dourish. 2014. “Multisited Design: An Analytical Lens for Transnational HCI.” *Human-Computer Interaction - Special Issue on Transnational HCI* (Hillsdale, NJ, USA) 29, no. 1 (January): 78–108. doi:10.1080/07370024.2013.823819.

Wilson, Janet. 2012. “Email ‘vacations’ decrease stress, increase concentration.” *UCI Press Release* (May 7). URL: http://news.uci.edu/feature/email-vacations-decrease-stress-increase-concentration/.

Winograd, Terry, and Fernando Flores. 1987. *Understanding Computers and Cognition: A New Foundation for Design.* Addison-Wesley Professional.

Wright, Peter. 2011. “Reconsidering the H, the C, and the I: Some Thoughts on Reading Suchman’s Human-Machine Reconfigurations.” *interactions* (New York, NY, USA) 18, no. 5 (September): 28–31. doi:10.1145/2008176.2008185.

Wyatt, Sally. 2003. “Non-users also matter: The construction of users and non-users of the Internet.” In *How Users Matter: The Co-construction of Users and Technology*, edited by Oudshoorn and Pinch. MIT Press.