REMAPPING LEARNING GEOGRAPHIES FOR YOUTH WITHIN
AND BEYOND THE PUBLIC LIBRARY

By

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can be.

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PROLOGUE

This dissertation really began when I was a high school English teacher. In my Expository Writing class, I had a student named Kervin (all names and places throughout this dissertation are pseudonyms). Kervin typically sat towards the back of the classroom, sunglasses on (it *was* Hawai'i), arms crossed, one iPod earbud inserted into his ear, the other dangling. Kervin was never disruptive, never rude: he just didn't care about breaking down ethos, pathos, and logos in some political speech.

But then one day I brought up the video game *Halo 2* in class and things changed. That night, I got home to find an e-mail from Kervin. He had sent me a quick message about how much he loved *Halo 2* and attached a self-produced video of him playing with a group of friends. I was shocked when I watched it. This guy who had never said a word in class, was now leading a full-blown raid, commanding teammates which direction to attack, who should shoot where, calling out those who weren't pulling their weight. There was something so jarring about this Kervin versus the one I knew—the loud, authoritative voice; the energy; the well-executed strategy and tactics. It hurt to know that *this Kervin* was dying to come out all day, but instead *that Kervin* had to sit through four, ninety-minute block periods—likely with his arms crossed, shades on, earbud dangling.

Kervin has stayed with me throughout my doctoral program. I could not shake that video and the learning that likely surrounded it: the textual resources he accessed to develop his expertise, the videos he watched and re-watched to hone his skills, the time he spent practicing, critiquing, and analyzing his gameplay. So, I took my reflections on Kervin with me

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to Vanderbilt. When observing student teachers in high school ELA classrooms, I saw more Kervins at every school I visited. Silent, lethargic classrooms would become energized, filled with noise the second the bell rang. Instead of putting earbuds in when class finished, students were pulling them out to *finally* talk with friends.

That first year in my doctoral program, thanks to the generous support of my university, I had the opportunity to attend the Digital Media and Learning Conference in Long Beach, CA. In the Digital Media and Learning community I found like minded-scholars who were exploring youth's interest-powered practices—like gaming—and seeking ways to make greater connections between informal learning settings, like libraries, and more formal ones, like schools. Initially, this group was looking to better understand how teens were hanging out, messing around and geeking out in places like virtual worlds and social networks. Later, they would put forth guiding principles for interest-powered learning settings, detailing both how it emerges in-the-wild, as well as how to design settings to promote it: they called it connected learning.

With the support of the MacArthur Foundation, the digital media and learning community began to take off: a research hub ran out of the University of California-Irvine; the conference grew, spreading beyond academics and toward the inclusion of teachers, librarians, and museum directors. Importantly, the MacArthur Foundation financially supported the development—and spread—of digital media learning labs, similar to YouMedia, which had been successful in Chicago. They opened a call for proposals for libraries and museums to jumpstart these labs. Tamara Benson, emerging technologies administrator at the Metro Public

Library, put in an application. My advisor, Kevin Leander, supported her. They got the money.

They brought me in to begin brainstorming what this learning lab could feature.

By December of 2012, we had 12 local high school students who were going to help us design this lab. At its core, the lab would have four guiding spaces—one dedicated to making, one to gaming, another to music production, and another to writing. After twelve-weeks, meeting once-per-week, we had designed The Studio @ MPL.

But even before The Studio was built, I had a number of questions I wanted to explore. What would programming look like at The Studio? What does learning look—and feel—like when it is powered by youth's own interests? When it is bound neither by a single setting nor arbitrary temporalities? How would it provide authentic learning opportunities beyond the cultural representatives from the Japanese consulate or falcon trainers from the zoo who currently visited? How could it make connections to school, but not become school?

I wanted to answer these kinds of questions. In the summer of 2013, Kevin and I proposed to Tamara that she let me pilot the kinds of programming that could operate out of The Studio. She agreed to it. So, founded on the principles of connected learning, I designed a program called Metro: Building Blocks. Through it, participants would use the video game *Minecraft* to take on authentic urban planning challenges in their city. I ran the program from January-June of 2014.

Kervin, however, never left my mind. I created Metro: Building Blocks for someone like him. Designed with the principles of connected learning, I sought to create a program that was interest-powered, academically-oriented and that supported opportunities for civic engagement. It was for the kids who got fired up the second they left the classroom; the kids

who mastered video games, shared tips, looked up cheats, and produced their own videos; it was for the rage-quitters and the yellers, the strategists, the designers, the n00bs, the loners, and the tinkerers alike. It was for the kids who didn't need to sit in a class for 90 minutes mastering rhetorical concepts like ethos/pathos/logos when they already mastered them by arguing with friends why *Halo* was better than *Call of Duty*. Furthermore, it was a program that employed kids' own interests to give them the opportunity to be the experts, to connect their expertise across settings, like home, school, and the library, and to put it on display, sharing, reviewing, and critiquing with peers and adults alike. It gave them the opportunity to expand disciplinary practices from the likes of social studies (and to my surprise, math and science) beyond those 90-minute block periods. It provided an opportunity to participate in forms of civic engagement that didn't necessarily culminate with a presentation to adults.

Of course, questions often just lead to more questions. In terms of interests: What does interest-powered learning really mean? How do interests ebb-and-flow? Or splinter off toward other, new interests? In terms of academics: What are "academics" at the library? And why am I creating this (false) dichotomy of school/not-school, or formal/informal, instead of following the movements and circulations through them? In terms of civic engagement: How do we understand civic engagement when it cuts across digital and physical spaces? To what degree can it operate across various scales?

In beginning to think through all of these questions, I was continuously struck by moments of intensity—shouts, groans, lulls—and how they were related to interests, to academics, and to civic engagement. In the end, I always kept this quip by Deleuze (1990) in

mind: "It's easier to remember a gesture or a laugh than a date" (p. 83). I hope you keep it in

mind, too, as you read.

CHAPTER ONE

INTRODUCTION

In his lectures on school and society, Dewey (1899/1998) advocates for the need for a connective approach to learning, especially in the design of relational, "unified" learning settings. To do otherwise, he writes, is a waste. His discussion of waste in education, for instance, asserts that school is "itself an institution, in relation both to society and to is own members—the children" (p. 40). While he hints at potential waste regarding finances, or objects, Dewey's overt concern is vitriolic: the most egregious waste that school produces "is that of human life, the life of the children while they are at school, and afterward because of inadequate and perverted preparation" (p. 41). Dewey stresses the importance of a school's organization to reduce that waste. And organization, he states, "is nothing but getting things into connection with one another" (p.43). To connect, he argues, is to "call attention to isolation," to stitch together the school system that has, over time, fractured itself into various schools (e.g. primary, grammar, technical) with diverse emphases (e.g. culture, discipline, utility). While Dewey adds the caveat that not "all of the isolation, all of the separation…still persists" (p. 43), he is clear: "one must recognize that [different parts of the school system] have never yet been welded into a complete whole" (p. 43).

Dewey suggests how to "unite the whole." To do so means expanding one's focus beyond the school. Failing to expand this focus reinvigorates the kind of "artificial unity" that stems from confining one's "gaze to the school system itself." To unite the whole, then, means to take the school system "as a part of the larger whole of social life" (p. 44). Dewey represents

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his take on a school system that "unites the whole" by depicting *movement* between various

learning venues (Figure 1-1).
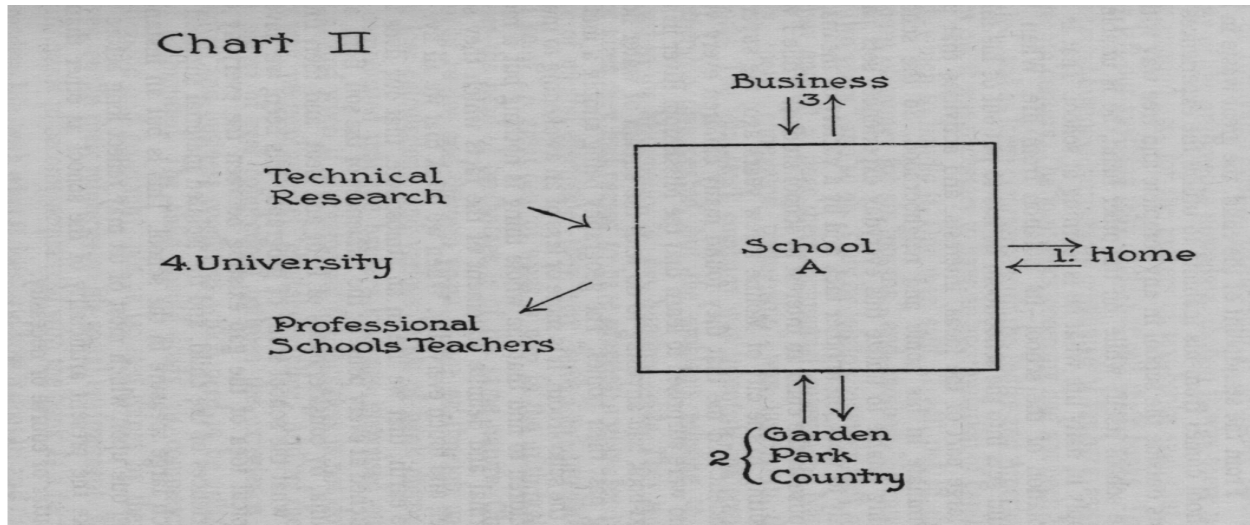
Figure 1-1. Dewey's portrayal of movement in-and-out of school.

To weld together the different parts of the school system, Dewey calls for mobility, for

movement, flow, between the home, school, and community. And part of that movement

stems from the integration of youth interests, or the "experiences he gets outside the school."

From the viewpoint of the child, he writes:

> the great waste in the school comes from his inability to utilize the experiences he gets
> outside the school in any complete and free way within the school itself; while, on the
> other hand, he is unable to apply in daily life what he is learning at school. That is the
> isolation from school—its isolation from life. (p. 46)

Dewey delivered that lecture in 1899. Today, educators and researchers alike continue to

contend with the isolation of school, both spatially and temporally. Lemke (2004), for instance,

reiterates Dewey's frustrations:

> Classrooms are very small, cramped, over-crowded spaces that can afford not much
> resource of place for more than conversation, reading, writing, and a few simple

activities with not very interesting materials. They were designed for mass education on the cheap at a time when education was mostly about basic literacy and not much else. Each room and subject and age-grade is cut off from the others, and all are cut off from the authentic communities of practice in the rest of society for which education is said, not very credibly, to prepare us. In time, each lesson is divided from those logically connected to it by at least 24 hours, the duration of any activity is limited to 40 minutes, topics change radically every few weeks, extended projects cannot continue beyond a few months, and the critically important relationships between teachers and students are arbitrarily terminated after much less than one year. This design and its familiar chronotopes works against everything we know and value about significant learning. (n.p.)

Lemke's language resonates with (temporal) isolation—learning is repeatedly "cut off."

Educators and researchers have made significant efforts to "unite the whole," though. A

growing number of scholars—from learning and literacy to media and communication

studies—are exploring learning as a series of boundary-crossings within and across social

spaces (e.g. home, school, virtual communities) and temporalities. This stream of research

follows youth's learning across ecologies (Barron, 2006), trajectories (Wortham, 2006) and

networks (Leander & Lovvorn, 2006). In doing so, these scholars follow cultural theorists who

describe contemporary life in terms of "flows" (Appadurai, 1996) or as a "networked society"

(Castells, 2011). Echoing Dewey, such approaches research and promote learning as a holistic

experience that bridges formal and informal, embodied and digital, school and community

settings. These forms of boundary-crossing are an initial effort for both educators and

researchers to break free from this "straightjacket of container thinking" (Thrift, 2003, p. 100).

A contemporary arbiter for this holistic experience is connected learning (Ito et al., 2013).

The connected learning framework advocates broadened access to learning that is interest-

powered, peer-supported and oriented toward academic, economic, or civic opportunity (p. 4).

Learning with and through digital media constitutes its core. Key features of the connected

paradigm include learning that develops through a shared purpose, is production-centered, and openly-networked.

Dewey—in his own time—called for connected learning. To alleviate isolation, he urged accessibility, transparency, and extensibility, envisioning learning that not only cut across settings, but that also tapped into the "experiences [students] get outside the school"—their interests. In terms of contemporary forms of connected learning, this means that barriers for entry are low for participants as they pursue those interests. As such, participants should be able to connect to people and institutions across various settings (e.g. home, library, school) and across various technical platforms (e.g. mobile, PC, game device). Critically, settings (physical and digital) should maintain an open-door policy while simultaneously leveraging digital platforms that create permeable boundaries. Thus crucial components of connected learning become the need for cross-institutional networks, the possibility for multiple points of entry, and, finally, open access for participants to resources, tools and materials.

And yet, as education researchers aim to cast off that straight-jacket of container thinking—traversing into spaces like libraries and virtual worlds—there are still a number of overarching questions regarding the dynamic processes of learning: What happens at the contact zones between one setting and another? How do learners make, or produce, their own places of learning? What are the spatiotemporal dynamics within and beyond these places, including their rhythms, tempos, spikes and lulls? And moreover, what research methods move with and follow the dynamic processes of learning that become entangled with policies, material objects, physical bodies, and texts (Leander, Phillips & Taylor, 2010). This dissertation makes theoretical and methodological contributions towards answering those questions.

Furthermore, aligned with these questions regarding the spatiotemporal dynamics of learning, this dissertation takes quite seriously connected learning's emphasis on interest-powered learning. Specifically, it draws on theories of place, mobility, and affect, to understand how youth's interests initiate—how they spark— within and across connected learning venues. Then, it questions how interests move and circulate, especially towards academic and civic opportunities. In the end, it argues that these interest-powered engagements evince forms of place-making by learners: the affectively-charged negotiation and subsequent transformation of place for personal enrichment.

Guiding Contribution: Affectively-charged place-making

I began this dissertation with an interest in exploring how informal, media-rich settings, like those emerging at public libraries, could employ digital media to foster both learning opportunities as well as a deeper sense of community for youth. To explore these questions, I designed, and facilitated, a youth-serving connected learning program at the Metro Public Library (MPL). This program served as a prototype for the kinds of programming the library could run for youth in its future digital media learning lab: Studio @ MPL. The program was called Metro: Building Blocks (MBB). It challenged teen participants to build authentic areas in the city of Metro within the familiar video game *Minecraft.* I designed the program in the fall of 2013. Then, I ran the program, and collected data, from January through June of 2014. I elaborate further on MBB in chapter three.

In creating MBB, I wanted youth interests to drive the program, to have teens pull on their own experiences in both physical (e.g. embodied) spaces and in digital (e.g. gaming) spaces. To understand what moves in-and-out of this setting, this dissertation relies on—and

has a deep commitment to—theories of *place* (Cresswell, 2014; Ingold, 2011; Massey, 1991, 2005; Tuan, 1977). While I further flesh out what I mean by place in chapter two, I align most heavily with Ingold's (2011) conception of the meshwork as place. The meshwork, he writes, consists of "lines of growth issuing from multiple sources" which become

> comprehensively entangled with one another, rather like the vines and creepers of a dense patch of tropical forest, or the tangled root systems that you cut through with your spade every time you dig the garden. What we have been accustomed to calling 'the environment' might, then, be better envisaged as a domain of entanglement. It is within such a tangle of interlaced trails, continually ravelling here and unravelling there, that beings grow or 'issue forth' along the lines of their relationships. (p. 71)

Place, per Ingold, is not a bound environment, but rather an entanglement produced through "interlaced trails."[1] In *Being Alive* (2011), Ingold references a Kenyan Acacia tree to illustrate, quite literally, the "tangled root system" of place (Figure 1-2).

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[1] Ingold's conception of "meshworking" is not unlike Engeström's conception of "knotworking" (Engestrom, 1993; Engeström, Engeström, & Vähäaho, 1999). Two components of the meshwork stand out for my purposes: 1) Ingold does not emphasize the meshwork itself; rather, he draws attention to the lines of movement coursing through it. 2) By focusing on lines, he not only underscores movement, but the ways in which those lines push forth and connect to other "meshworks," or other places. In his take on "wildfire activities," Engeström (2008) cites Ingold (2007) to introduce new forms of thinking about mobility, likely finding resonance with Engeström's own previous depiction of the knotwork as "rapidly pulsating, distributed and partially improvised orchestration of collaborative performance between otherwise loosely connected actors and activity systems" (1999, p. 346-347).

Figure 1-2. A lone Acacia tree.[2]

Rather than an individual tree, as depicted in Figure 1-1, with its own bound environment—

consisting, say, of bark, branches, and leaves—Ingold pulls back the scope viewing this Acacia

tree, revealing the many lines which cut across and through it, including root systems, animal

(and human) pathways, and more (Figure 1-3).

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[2] Overall, this is visually rich dissertation. I employ a number of figures to help tell my story. I especially lean on (multiple) images to carry weight in my analyses because of the representational constraints of the dissertation-as-genre. I often turn to comics to represent movement of activity and discourse within and across the real virtual setting.

Figure 1-3. The Acacia tree, connected by lines of animals, nature, humans, and more.

In adopting this anthropological construct for educational research, I began to ask: What happens when I view learning not as occurring within a bound "environment" but as moving throughout a "domain of entanglement"? When I see lines of movement "raveling here and unravelling there" from school, home, the city, online affinity spaces, and more? When I view learners, programming, and myself as issuing forth "along the lines of their relationships"?

Two additional concepts related to place helped me see (and sense) these lines of movement: mobility and affect. In following movement, I found resonance with the "new mobilities paradigm" (Hannam, Sheller, & Urry, 2006). The new mobilities paradigm emphasizes that all places are tied together in, at least, thin networks of connections. As a result, the paradigm challenges social science research that is a-mobile—both theoretically and methodologically. It seeks out fluidity as opposed to fixed, contained, territories. Still, throughout my analytic process, I became less concerned with what was moving and more

intrigued by why it moved: What pushed a participant to follow a new idea or interest? What pulled her in? I began to attune myself to the affective intensities reverberating throughout the regular activities within MBB. I doing so, I began to respond to the methodological call for researchers of mobilities to "position movement, rhythm, force, energy, or affect as primitives or registers that may be of equal importance when understand the unfolding of events" (Merriman, 2014).

The more I moved with—and was moved by—my data, the more I got caught up in the tangle, however. I kept coming back to Massey's (2005) query: "And yet, if everything is moving, where is here?" (p. 138). When learning is supposedly connected, bringing together disparate settings—including home, school, and library—how do learners wrestle with those disparate lines, or "stories?" Within all of that movement, how does learning coalesce? How do learners bundle together disparate, distributed space-times into one setting? How do learners make a here, now? To help answer these questions, I drew on emerging understandings of *place-making*. That is, I sought to understand how learners place-make for their own learning. I refer to place-making as the affectively-charged negotiation and subsequent transformation of place for personal enrichment. In chapter two, I further describe how place, affect, and mobility come together through place-making (Figure 1-4).
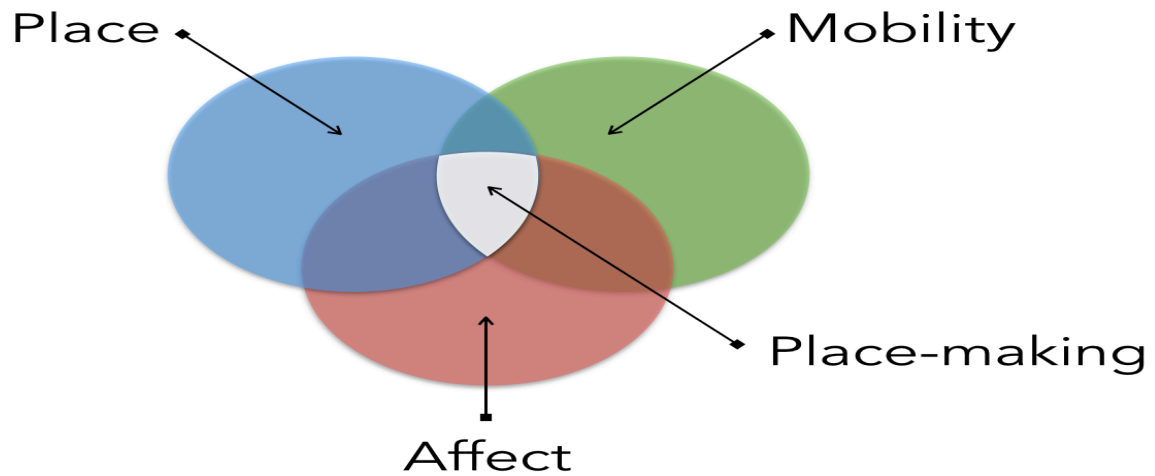
Figure 1-4. Place-making at the intersection of theories of place, mobility, and affect.

Committed to the connected learning design principles which I had adopted, I then began to follow three guiding strands of MBB: 1) Interest-powered learning that promotes 2) academic opportunity and 3) civic engagement. While these are certainly not the only lines knotting up in the meshwork of MBB, they do offer a way forward in terms of how youth employ digital media to transform the place of their learning for their own personal enrichment (Figure 1-5).
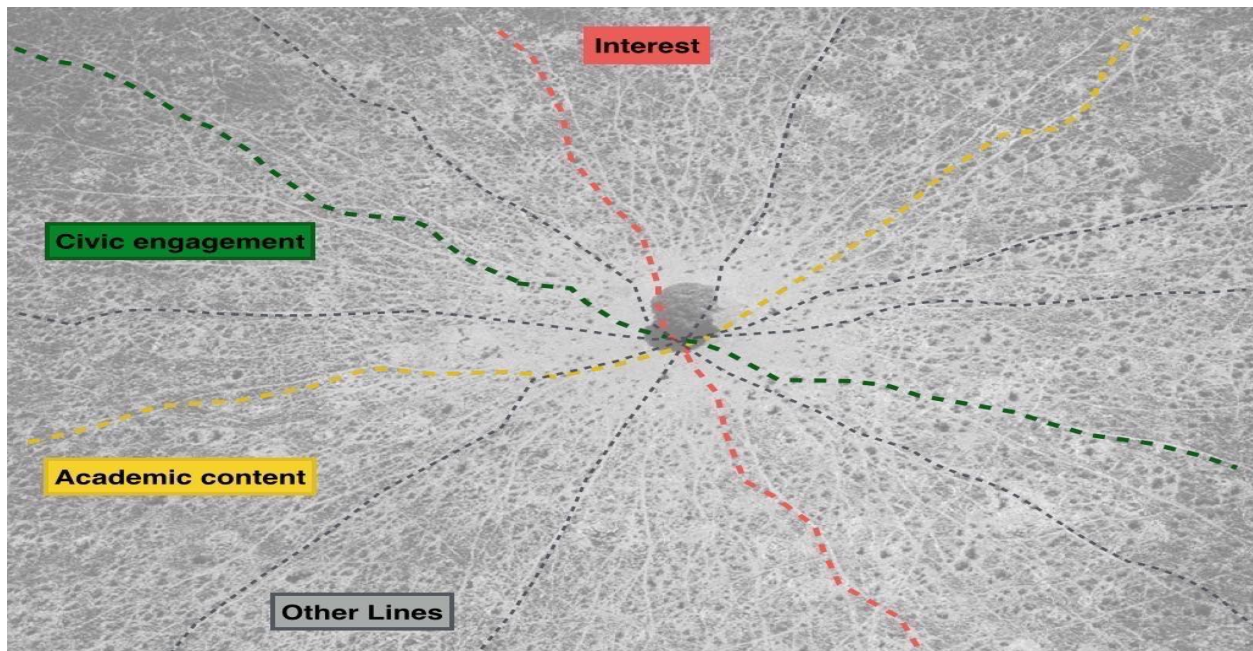
Figure 1-5. Acacia tree, revisited. The three lines of this dissertation highlighted, with the recognition of others crossing through as well.

Overview: From Pathways to Place-making

At its broadest, this dissertation investigates the connected learning experiences of youth participation in a video game-based program within and beyond a public library setting. While it aligns with previous educational research that calls for "thick and multi-stranded" learning networks (Barron, 2006), this dissertation is particularly wary of, and concerned with, discourse that *accumulates* learning settings for youth. That is, discourse that calls for trans-spatial (Steinkuehler & Squire, 2009) learning for youth without attention to the affective and spatiotemporal dimensions of learning that move within—and stretch beyond—those settings. Specifically, this accumulative discourse is exemplified by language such as learning pathways (Ito et al., 2013):

> Young people can have diverse pathways into connected learning. Schools, homes, afterschool clubs, religious institutions, and community centers and the parents,

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teachers, friends, mentors and coaches that young people find at these diverse locales, all potentially have a role to play in guiding young people to connected learning. (p. 8)

Informal learning settings—like libraries and virtual worlds—increasingly proliferate youth's learning pathways. And as they do, there continues to be pressing need to interrogate not *what* youth learn in those settings—but *how* youth learn within and across them: how youth interests develop and expand, how youth make meaning and experience feelings, how youth not only cumulate but also calibrate other space-times into that learning, especially for both academic and civic purposes. That is, how do participants *place-make* for their own learning?

Chapter Breakdown

Throughout this dissertation, I draw on theories of place, mobility, and affect to understand the ways in which youth place-make for learning.

- In chapter two, I bring together literature that has sought to describe learning that traverses across settings. I detail the geographic conception of "setting" of four dominant approaches to learning across settings. Then, I extend this literature, bolstering it through emerging theories of place, mobility, and affect. In the end, I put forth my approach to place-making.

- My third chapter describes my methods. I first provide an initial overview of *Minecraft.* For contextual purposes, I link *Minecraft* to literature of virtual worlds (Pearce, 2009). From there, I describe my history at the Metro Public Library, further detailing the design of Metro: Building Blocks, including descriptions of the setting, the participants, and my role as a mentor and designer. Moreover, because my subject matter is mobile,

my methods are as well—thus I offer an expanded focus on mobile methodologies and analyses.

- Chapters four through six detail my findings. I blend theories of place, mobility, and affect to explore first the ways in which interests spark, move and circulate (chapter 4). I then give further texture to connected learning's broad conceptions of "academics" (chapter 5) and "civic engagement" (chapter 6) by depicting the ways in which both academics and civic engagement are "splayed out and unfolded" (Doel, 1999, p. 7), how they, too, move and circulate within and beyond the experience of Metro: Building Blocks.

- Chapter seven brings these analytical sections together through an overarching focus on place-making, which I will continue to define as the affectively-charged negotiation and subsequent transformation of place for personal enrichment. I then tease out specific implications of this dissertation for mentors and designers hoping to develop connected learning program in spaces like libraries. I conclude by examining the title of this dissertation, questioning what it means to remap youth learning geographies.

Research Questions

This dissertation refines three of connected learning's guiding principles: 1) interest-powered learning that is 2) academically-oriented and that 3) promotes political, or civic, opportunity (Figure 1-6).
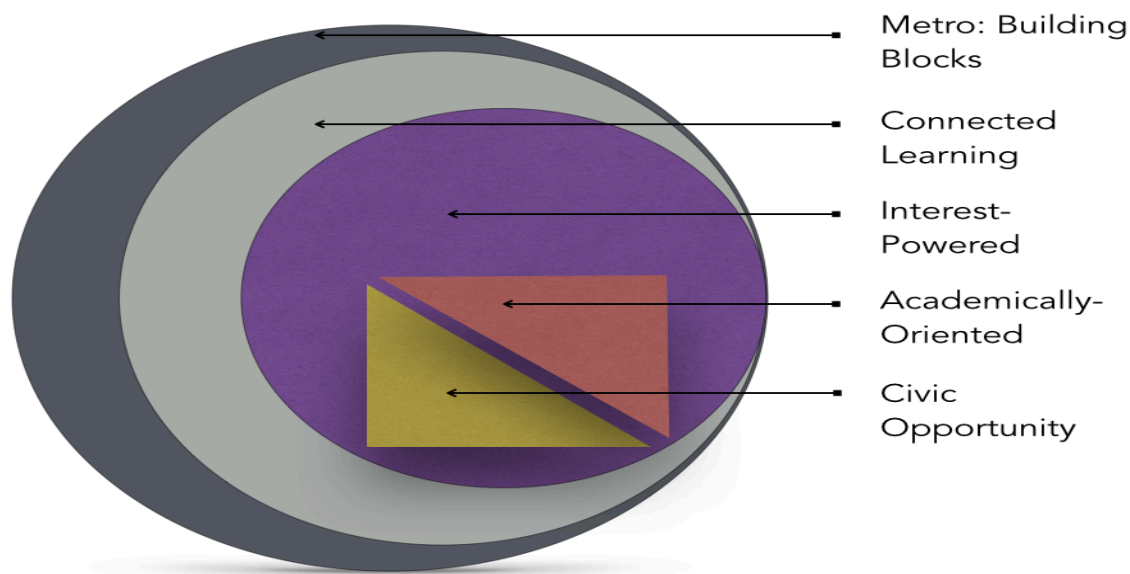
Figure 1-6. This dissertation first targets connected learning's overarching emphasis on interest-powered learning, and refines its focus on academics and civic opportunity.

To refine these principles of connected learning, this dissertation poses the following questions:

Interest-powered learning: How are learners affected, or moved, toward interest-powered learning opportunities? And how do interests move and circulate in service of learning? Addressing this first set of questions is to take on the challenge put forth by Barron (2006), one that has not yet, to date, been fulfilled:

> We need to know more about the interpersonal micro-interactional processes and affective processes that support interest development; for example, the role of enthusiasm expressed by friends and family for a topic or artifact, or the excitement felt when students employ their newfound knowledge in the context of their designs or when they gain insight into a complex idea. (p. 219)

Barron's call for attention to "micro-interactional" moments and "affective processes" signifies a shift from tracing locations of learning and toward the lines of learning, how they move and

become entangled—what I develop as affective, emergent, always (un)folding, becoming, enlivening (and deadening) lines. Such an analysis, I argue, offers a greater appreciation of learning opportunities made available at disparate settings, from homes to libraries, to virtual worlds and museums.

Academically-oriented: What is the topography of learning within an informal, media-rich setting, and what vocabulary can describe the ways in which it takes form? In addressing this second set of questions, I contemplate what entails "academics" within connected learning settings. Rather than isolating static instances of so-called "academics," I trace the relief of activity within this setting—following its contours—to illuminate when, and how, learning opportunities arise. To do so, I refine analytical approaches to movement and mobility through an explicit emphasis on rhythm.

Civic opportunity: How does civic engagement, or opportunity, move and circulate during participation in this game-based program? This chapter interrogates the spatiotemporal contours—the variability—of youth civic engagement within and beyond my connected learning setting. It questions the imagined geographies (Leander Phillips & Taylor, 2010) of youth political participation, calling for connected learning approaches to foster civic engagement opportunities that move across space, time, and scale. I refer to civic engagement that extends across space, time, and scale as civic geographies.

CHAPTER TWO

LITERATURE REVIEW

From Learning Across Settings to Place-making for Learning

I begin this chapter with a brief survey of literature that has both empirically and

theoretically argued for the ways in which learning accrues across settings, over time. Four

approaches to learning across settings guide the front-end of this chapter, with Leander,

Phillips & Taylor's (2010) review of the "changing spaces of learning" acting as an anchor text.

Their work considers the relation of learning to space and place, challenging "classroom-as-

container" discourses of where—and when—learning occurs that dominate educational

research. I first bring together the three expansive metaphors that Leander and colleagues

deploy—place, trajectories, and networks—under the term learning geographies. Then, I

consider alternative efforts that have also sought to understand key characteristics of learning

across settings over time: cultural learning pathways (Bell, Bricker, Reeve, Zimmerman, & Tzou,

2013), learning lives (Erstad, 2013; Erstad, Gilje, Sefton-Green, & Vasbø, 2009), and connected

learning (Ito et al., 2013). Table 2-1 distills the geographic vision of each approach. This review

alights on the need for further interrogations of how learners integrate, or bring together,

experiences and resources from those disparate space-times. That is, rather than a chain (or

pathway) of connected settings, I consider the nexus of relations with other locales that aid

learners in their making of a place of learning.

Places of learning "have distinctive qualities about them that 'recruit' or draw learners to

them" (Leander, Phillips & Taylor, 2010, p. 336). To understand those qualities, the back-end of

this chapter draws on theories of place, mobility, and affect that, together, culminate in the potential for place-making. I call for further attention to affective experiences within these places of learning, or the ways in which learners are drawn toward, or captured, by a topic or activity. The affective experience of learning calls attention to the mobility, or movement, of multiple sensations—bursts of energy, lulls of boredom, shouts of joy or frustration—and how those sensations move and circulate across settings. Furthermore, attention to these affective dimensions of learning targets the various components, or "bodies," that learners mobilize to power interest, to shape engagement—physically co-present participants, virtual avatars, songs, and more. This bundling together, I argue, aligns with an emerging understanding of place-making for learning.

To understand the production of places of learning, I extend the literature that, to date, has expansively sought connections to additional learning settings, without the theoretical underpinning to support knowing how learners produce those settings—as places—for themselves. What are the qualities of places that draw learners to them? And to what degree do those qualities—not just learning—move to other settings? What learning occurs at the contact zones between places? And how do learners agentively bundle together, or calibrate, those disparate places?

Structurally, this chapter contains three parts. The first part constitutes the more traditional literature review. Here, I drill down from the aforementioned literature exploring learning across settings, paying initial attention to learning geographies, cultural learning pathways (Bell, Bricker, Reeve, Zimmerman, & Tzou, 2013), learning lives (Erstad et al., 2009), and connected learning. In the second part, I take a brief interlude. I describe a connected

learning setting, like YouMedia Chicago or the Studio @ MPL, (re)imagining it as an affectively-charged place of learning. This interlude acts as a bridge to the third part, which unites current thinking, primarily from human geography, on place, mobility, and affect. This section culminates with place-making.

Situated Learning: The Sealed Envelope of Learning

In expanding human geographic understandings of space, Thrift (2006) writes:

> bodies caught in freeze-frame might look like envelopes but, truth to tell, they are leaky bags of water, constantly sloughing off pieces of themselves, constantly leaving traces – effluent, memories, messages – through moments of good or bad encounter in which practices of organization and community and enmity are passed on, sometimes all but identically, sometimes bearing something new. (p. 140-141)

I am tired of thinking—and talking—about classrooms as containers, as bound learning environments. Learning settings, like the bodies of which Thrift writes, are never caught in "freeze-frame." They are never sealed "envelopes." Rather, classrooms—and any learning setting—are porous, permeable, "leaky bags of water." Theories of situated learning, however, (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991) often seal up learning and activity inside of localized envelopes. For example, despite Lave and Wenger's description of legitimate peripheral participation that is relational, mutually constituted through the interaction among "agent, activity, and the world," the activities the authors offer for analysis—e.g. Alcoholics Anonymous meetings, butcher-shop and tailor apprenticeships—are relatively contained, isolated to a specific space and time.

Importantly, however, Lave and Wenger offer a glimpse of the "leaky bag of water" that Thrift imagines. They hint at the ways in which communities of practice depend upon memberships that extend over the historical biographical trajectories of its members. Notably,

the production of communities of practices—and the knowledgeable identities that constitute them—raises questions about the "sociocultural organization of *space into places* of activity and the circulation of knowledgeable skill" (p. 55, my emphasis). How are generic, local spaces of activity transformed (by learners) into meaningful places of activity? How does knowledge move and circulate across settings (from the tailor's shop, to the bar with other apprentices, to YouTube videos played [and re-played] to hone specific skills)? A more fully relational perspective on mobility and learning, Leander, Phillips, and Taylor (2010) write

> will only come into being to the extent that specific relations are followed, traced, and analyzed; the 'social' will be lost or epiphenomenal to activity when less visible movements of people, texts, tools, and other cultural resources are bracketed out of activity or assumed to exist through only local visibility. (p. 335)

This language is critical, calling for relations to be "followed" and "traced" as they circulate within and beyond settings. Brackets, then, fall to the cutting room floor, so to speak, giving way to permeability, flow.

Learning Geographies

Education research has adopted spatial approaches that follow, trace, and analyze to a certain extent, asserting that learning and literacy are always situated and produced in particular social—and spatial—relationships (Comber, Nixon, Ashmore, Loo, & Cook, 2006; Kostogriz, 2006; Leander & Sheehy, 2004; Vadeboncoeur, Hirst, & Kostogriz, 2006). Such approaches purport that space is socially produced, that it is co-constructed alongside social life rather than simply acting as a backdrop for it (Leander, 2001, p. 639).

Educational spaces are not bound systems; rather, they are multi-layered, complex. Nespor (1997), for example, suggests that a nuanced exploration of educational spaces will

"peel back its walls and inspect the strings…linking it to the outside world (which is no longer outside)" (p. xi). Spatial theories of learning, then, underscore the variegated nature of what is within those walls as well as how the "strings" within them stretches outward. Nespor's (1997) work, in particular, elegantly traces the complexities embedded within Thurber Elementary, from its intersections with the local neighborhood, to teacher-parent struggles, to even the bodies of its students. Similarly, Leander's (2001) research explicating space-time and identity calls for a greater understanding of the ways in which various discourses and identities, once thought distant to schooling, become re-inscribed within school spaces (p. 641). In urging the literacy community to consider the interaction between space and learning more carefully, he argues for the need to understand how identities of students and teachers are always hybridized through dynamic space-times that stretch in-and-out from schools. These dynamic geographies and temporalities emerge through the "circulation of paper in classrooms and media practices, on the boundaries for literacy shaped by walls, desks, and neighborhoods, and on the ways in which material participants in the world—such as bodies—become sites for writing of myriad texts" (Leander & Sheehy, 2004, p. 3).

Spatial approaches, illuminating the heterogeneous dynamics influencing learning and literacy at play within classrooms, share similarities to ecological approaches learning beyond classrooms and across settings (Barron, 2006). Crowley and Jacobs (2002) describe the "islands of expertise" that young children develop, the ways in which that expertise stretches across toys, talk, museums, and more. Parents, for instance, recognize this burgeoning expertise and expand it through questions and explanations; peers support it. These supports facilitate ecological transitions, (re)positioning learners in new ways to focal topics and contributing to

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learning and identity development. Recently, Calabresa Barton and colleagues (2014) have drawn attention to the identity work youth enacted across the borders of multiple communities, honing in on critical moments, or "beads," that fostered this identity development. In turn, this identity development spanned, what Barron calls "thick and multi-stranded" networks which reach into—and back out of—a learning setting.

To further expand classroom-as-container imaginaries, Leander and colleagues (2010) offer three metaphors, which come together under the auspices of learning geographies: learning-in-place, learning trajectories, and learning networks. First, the metaphor of learning-in-place is most reminiscent of the aforementioned spatial turn in literacy and learning. Learning "situations,'' they argue, are better thought of as a "nexus of relations to other locals" (p. 336). A learning-in-place approach to a given learning setting emphasizes the mobilities evident within place, the way that setting is constantly formed and transformed. Second, trajectories of learning shift the focus to space-time—and are reminiscent of ecological thinking— following learning across events and contexts. Zacher's (2009) portrait of Christina exemplifies the ways in which the identity develops along a spatiotemporal trajectory: "Christina redrew her racial identity map every day, adding new locations, new people, new supporting characters and threads" (p. 275). Christina's learning trajectory includes street corners, and bus rides; she deliberately used space—over time—to promulgate a specific identity. Third, learning networks posit that learners actively network learning resources across space and time, and that those resource—pieces of paper, polices, megabytes of data—can mobilize learners in disparate ways, including different speeds, frequencies, and rhythms.

With an initial mapping of this conceptual terrain, I now briefly outline resonant approaches to learning across space and time. I first highlight cultural learning pathways (Bell et al, 2013), or learning that is "accomplished across settings (i.e. translocally) by persons acting within diversities of structures of social practice" (p. 272). I pay particular attention to the emphasis the authors place on the ontogeny of interests and concerns across settings. From there, I detail related thinking, with a specific emphasis on digital media, through Erstad's (2009) learning lives approach, a means to describe the expansive trajectories of learning youth are involved over time and across settings. Finally, I conclude with a deeper description of connected learning which, in many respects, brings together cultural learning pathways and learning lives, and then infuses recent thinking regarding participatory culture (Jenkins, 2009). In the end, I offer Table 2-1 as a means to represent three facets of each approach to learning across settings: First, the exigence for studying learning across settings; second, the vision of what it means to learn across settings; and third, the geographic conception of a so-called setting.

Cultural Learning Pathways

The cultural learning pathways perspective develops a more holistic account of not only how but also where people learn (Bell et al., 2013). For Bell and colleagues, cultural learning pathways are "connected chains of personally consequential activity and sense-making" that are "temporally extended, spatially variable, and cultural diverse with respect to value systems and social practices" (p. 170). Drawing on the work of Banks and colleagues' (2007), cultural learning pathways describe learning that is life-long, life-wide, and life-deep.

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Learning that is life-long is temporal. It traces the ways in which "significant abilities" develop over the course of years through practice, social support, and reflection (p. 270). Bell and colleagues recognize that "learning pathways are architected and disrupted" over a variety of timescales, from month to years.

Life-wide learning is spatial. It recognizes how learners move through a number of settings during their daily activities, including formal and informal learning spaces, neighborhoods, and interest-powered learning settings, like museums and online venues. In life-wide learning, learners adjudicate how to integrate their abilities and interests across disparate locations in order to accomplish goals or work alongside others. Successfully doing so enables learners to create connected and extended learning pathways from which they benefit (p. 270).

Finally, life-deep learning is value-laden. This means that learning and development is influenced by the social, ethical, and religious value systems of specific groups. Those value systems (which can be both life-deep, and life-wide) shape the ways in which people participate in activity. Moreover, they help define learning outcomes that are recognized (or dismissed) as well as learner identities that are welcomed (or undesirable).

Notably, the cultural learning pathways emphasize the relationship between interest and learning (Barron, 2006; Hidi & Renninger, 2006). Specifically, extended pathways of learning are deepened through the "stabilization of situational interest (e.g., around domain topic, practice, social relationship)" (p. 273). These interests may be individually elective or community-based. Bell and colleagues provide the example of a youth who receives a hamster as a pet: an initial interest in caring for an animal evolves into learning more about hamsters

(e.g. different breeds, the fact that they are nocturnal) and then extends into their exercise and

eating habits as well as their life cycle (Zimmerman, 2012). A permutation of interest, learning

pathways also develop from concerns, challenges, or desires. These concerns can vary, ranging

from a desire to serve and help the community to active participation in social justice issues.

Oftentimes, these interests and concerns then lead to forms of goal-directed learning as well

an emergence of related interests and concerns.

Cultural learning pathways are broad, covering everything from an interest in hamsters to

a concern for the well-being of undocumented immigrants. A related approach—learning lives

(Erstad, 2009)—gives further nuance to youth learning trajectories, particularly through an

emphasis on new media.

Learning Lives

By focusing on learners—their learning across space, time, and networks—education

researchers are more sensitive to youth's "learning lives" (Erstad et al., 2009; Erstad, 2013). In

describing learning lives, Erstad and colleagues "look at learning among young persons within

and across different learning sites exploring the positioning and repositioning of the self or

learner identity across these different 'locations'" (p. 100). Learning, in this case, is ontological

(Wortham, 2005), traversing spatial boundaries over time. It is highly connected to the

formation of identity, the ways in which learners develop a sense of self—or self-narrative—that

the learner then mobilizes across both formal and informal learning settings. Importantly,

Erstad and colleagues recognize that this holistic and pluralistic approach is not new. They

contend however, that moving with youth as they live and learn across settings—both formal

and informal—is "more necessary at this time as it offers a way of bridging the binary

opposition between formal and informal learning which is underpinning much debate about how homes and schools may be re-inscribed as changed and changing sites of learning" (p. 100).

Digital media is crucial in bridging this (in)formal binary. One way of considering youth learning lives, the authors argue, is to think in terms of "learners in motion." Learners in motion carry—move with—their media. In contrast to mass media, today's digital media is "personal, portable, and pedestrian" (Ito, 2007). In order to understand learners in motion, Erstad (2009) argues, "we need to understand the role of digital media in their lives," including where youth go with it and what you do with it in each discrete locations, and the relationships between digital media use across those locations.

In the following, I further elaborate on connected learning. As an approach to learning and reform, it aligns with, and expands upon, both cultural learning pathways and learning lives, especially in its aim to leverage the opportunities afforded by digital media to create equitable learning settings for youth. I outline the guiding principles of connected learning, with an explicit emphasis on its interest-powered core.

Connected Learning

Connected learning (Ito et al., 2013), to be clear, is not new. Rather it remixes sociocultural learning theories (e.g. Cole, 1998) and applies an overarching focus on digital media. As core principles, the connected learning framework advocates broadened access to learning that is interest-powered and oriented toward academic, economic, or civic opportunity (p. 4). Core properties of the connected learning paradigm include learning that develops through a shared purpose, is production-centered, and openly-networked. While I

flesh out the design principles which informed MBB in the following chapter, I further describe

the body of learning research that informs connected learning here. This research, the authors

note, points toward three key findings that guide connected learning: "1) The disconnect

between classroom and everyday learning, 2) the meaningful nature of learning that is

embedded in valued relationships, practice, and culture, and 3) the need for learning contexts

that bring together in-school and out-of-school learning and activity" (p. 45).

Connected learning targets the disconnect between learning that takes place in formal

spaces, like school, and learning that takes place in informal spaces, like libraries, or online

venues. The authors' emphasis on this disconnect is largely a critique of long-standing

arguments regarding the transfer of knowledge, or the ways in which "school subjects are often

thought to impart knowledge and skills that will be useful, or will 'transfer to' everyday life and

future work" (p. 45). A recent report from the National Academies, for instance, reveals that

"[o]ver a century of research on transfer has yielded little evidence that teaching can develop

general cognitive competencies that are transferable to any new discipline, problem or

context, in or out of school" (National Research Council, 2012).

Despite the recognition that the classroom "lacks utility and relevance for many young

people" (Ito et al., 2013, p. 55), school and future life-opportunity are incredibly entwined.

Thus, connected learning positions itself as a mediator between the formal and informal,

recognizing that it is not the institution which promotes learning (e.g. school, library) but the

relationships, practices, and culture shared therein (Lave & Wenger, 1991; Rogoff, 2003;

Scribner & Cole, 1981). Opportunities to work alongside more-capable others (Rogoff, 1990;

Vygotsky, 1980) including peers and mentors, are critical, helping youth refine not only their

thinking but skills as well (p. 57). Drawing on research that has documented the sociocultural

foundation of learning as happening through specific participatory practices within unique

communities, connected learning recognizes that learning is highly relational, and can be

understood as "changing participation in cultural activity rather than an endeavor sequestered

from everyday social life" (Ito et al., 2013, p. 46). Learning, the authors note, "happens within

the flow of everyday social life, work, and other kinds of purposeful activity" (p. 46).

Connected learning intends to facilitate connections and translations between in-and-out

of school learning. Rather than approaching learning across settings in terms of transfer, the

connected learning framework ascribes to an ecological approach to learning (Barron, 2006;

Bronfrenbrenner, 1979), which seeks to break out of a school-centric view of learning in favor

views that consider the "broader life spheres" of youth (Barron, 2006, p. 193). Importantly,

ecological—and thus connected learning—approaches are careful not to create false binaries

between in-school/out-of-school learning. Schools themselves, for instance, can be "places

where informal learning processes such as observation, imitation, collaboration, and

apprenticeship take place (Rogoff, 2003), while processes that we typically associate with

Western schooling such as quizzing or memorizing can be observed in homes and among

peers engaging in non-school learning" (Henze, 1992; Senechal & LeFevre, 2002, as cited in

Barron, 2006, p 198).

Connected learning recognizes the import of digital media in youth's learning ecologies,

especially in facilitating boundary-crossing among learning settings. While technology is not

necessarily a prerequisite, connected learning does recognize that digital technologies provide

youth with greater access the spatiotemporally distributed social supports, including peers and

adults. New technologies, the authors write, foster new (media) literacies, or those which are increasingly distributed, participatory, and collaborative (Lankshear & Knobel, 2013; Jenkins, 2006). In this "new culture of learning " (Thomas & Brown, 2011), youth have the opportunity to enter into vast, and widespread, interest-powered online groups, ranging from video production, fan fiction writing, gaming and more. Importantly, the emphasis here is not on the technology itself ("new technical stuff"), but in the collective ways of being that emerge concomitant to those technologies ("new ethos stuff;" Lankshear & Knobel, 2011).

Synthesis of Learning Across Settings Literature

Table 2-1 offers a synthesis of the reviewed approaches to learning across settings. I break down these approaches in three ways. First, I describe their exigence for the study of learning across settings. Then, I detail their vision of what it means to learning across settings. Finally, I delineate the geographic of conception of these so-called settings. Most notable here are the diverse ways in which these four approaches conceptualize these so-called settings. On the one hand, for instance, connected learning, offers a fairly simple conception of a setting, noting "schools, homes, after-school clubs" and so forth. Leander and colleagues, on the other hand, detail the (theoretical) nuances of settings, including the ways in which so-called settings, as places, are relational, entwined. Erstad and colleagues, from another perspective, recognize the role of local literacies (Barton & Hamilton, 1998) in their conception of setting—an example of how approaches to learning across settings are influenced by their (often situated) theoretical heritage.

	Exigence for Study of Learning Across Settings	Vision of Learning Across Settings	Geographic Conception of "Settings"
Learning Geographies (Leander, Phillips & Taylor, 2010)	• "...because evolving social systems and distributions involving resources for learning that are on the move...and because people are on the move within such social systems and distributions, then the examination of learning involves an expanded series of questions concerning learning, space, and time" (p. 331).	• "...place...is not an isolated container, but positioned in a nexus of relations to other such locales" (p. 336). • Trajectories study how histories of indication and/or learning processes build up over multiple events, over time (p. 341). • "...networking as a mode of conceiving social spaces dynamically and relationally, where objects of all variety are moving and undergoing transformation" (p. 344).	• Space/place is relational. • Global/local networks are always entwined. • More-than-human: Humans "bodies" do not hold all agency. • Settings are felt, imbued with affect. • Settings consist of different rhythms/tempos/accelerations, etc.
Cultural Learning Pathways (Bell et al., 2013)	"We argue that we lack theoretical and empirical accounts of how individuals and groups accomplish learning that is meaningful to them across settings over long time periods in relation to multiple cultural value systems – or how such learning is impeded" (p. 269).	• "Cultural learning pathways...are temporally extended, spatially variable, and culturally diverse with respect to value systems and social practices" (p. 282).	• Settings are "locations" or "niches," including classroom, home, afterschool programs, online spaces, etc. • Settings are variable: learners adapt "abilities, interests, identities" across a "different set of locations" • Potential to create learning pathways between settings (p. 270).
Learning Lives (Erstad et al., 2009; Erstad, 2013)	• "...a way of bridging the binary opposition between formal and informal learning which is underpinning much debate about how homes and schools may be re-inscribed as changed and changing sites of learning" (p. 10).	• "We place a focus on describing learning within social contexts and ultimately aim to look at learning among young persons within and across different learning sites exploring the positioning and repositioning of the self or learner identity across these different 'locations.'" (2009, p. 100).	• Rising from emphasis on "local literacies" (Barton & Hamilton, 1998). • Life-histories emerge over time. • "Learner narratives" are mobilized across informal and formal settings. • "Formal and informal – or school and out-of-school–are permeable boundaries" (p. 105)
Connected Learning (Ito et al., 2013)	• "Young people are provided with multiple learning contexts for engaging in connected learning—contexts in which they receive immediate feedback on progress, have access to tools for planning and reflection, and are given opportunities for mastery of specialist language and practices" (p. 10).	"We use the metaphor of an "ecology" to stress these broader contexts and their interconnection. The notion of ecology refers to the complex character of the spaces in which children develop. It also positions the child in meanings, practices, structures, and institutions contextualized by family, neighborhood, culture, and global contexts" (p.40). "...the media and communication system underpins the spheres of work, education and commerce in ways that we increasingly take for granted" (p. 41).	• Settings are schools, homes, after-school clubs, religious institutions, and community centers (p. 8). • Settings are connected by learning pathways; pathways are not accessible to all youth. • Entry-points are critical to access settings that provide robust learning opportunities for youth. • Digital media can act as bridge between settings (and acts as setting itself).

Table 2-1. Synthesis of four approaches to learning across settings, including their exigence, vision, and geographic conception.

Interlude: The Contours of Interest-Powered Learning

Let us envision a learning setting like YouMedia Chicago or the Studio @ MPL, a space that facilitates connected learning through, for instance, music production and podcast creation. A pathway perspective might examine how learning occurs for one youth over time, how her digital music production, for instance, develops from hanging out, to messing around to geeking out, how she creates "products" with a "shared purpose" across "open networks."

An emphasis on openly-networked access, while laudable, presupposes that learning occurs differently at discrete locations—that youth become transported from one location and learn differently in another—or that learning accumulates in some way. What happens when "access" is not the issue, but the milieu that surrounds access: the Ingoldian meshwork (2011) of access. What intersects as a youth, for instance, continues a digital media production from home? What academic content might she draw on from school? (And what does she dismiss?) And to what degree does this digital media production foster an entry-point toward other forms of civic engagement?

More questions: What happens when we re-cast this setting—this environment—as a place? When we stop connecting settings with the assumption that *something* from one setting wends its way into the others, but account for the nexus of relations that exist in each setting. How does that nexus coalesce into a place for learning? Or, more importantly, how do learners actively negotiate, and subsequently transform this place for their own enrichment? For their own learning?

Furthermore, what happens when we pay attention to affective resonances felt between bodies—human and non-human? The ways in which those resonances flow at different rhythms, including lulls and spikes? At fits and starts? Or how youth alight on certain interest-powered activities briefly, only to flee from them moments later (only to return, to re-ignite that interest, individually, later). What do we unveil by following the affective undulations of learning, the "wandering lines," or "efficacious meanderings" (de Certeau, 1984, p. xviii)?

Such an approach, I argue, is more akin to place-making, the temporary intersection of multiple lines—interests, academic content, civic engagement, for my purposes. To explore these questions—and in further texturizing the experience of learning—I bring together theories of place, mobility, and affect.

Affectively-charged Place-making: Place, Mobility, Affect

This section supplements educational research on learning that extends across settings. Through theories of place, mobility and affect, I first echo the ways in which each individual setting is not a container of activity but rather a nexus of relations to other settings, other locales. Then, I draw on literature related to the "new mobilities paradigm" to add further texture to the ways in which people, ideas, and things move across places. I refine this understanding of place and movement by underscoring affect's role as catalyst of movement by considering how it pushes and pulls actors through space. Finally, I bring these three together with an overt emphasis on place-making (Figure 2-1).
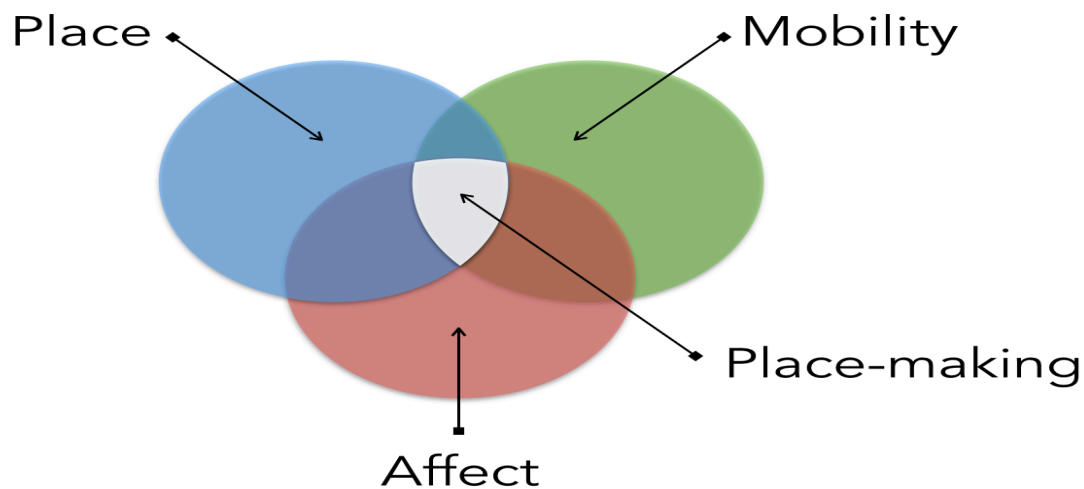
Figure 2-1. Re-visiting the relationship between the guiding constructs in this chapter.

Place

In this dissertation, I adopt—and begin with—a topological sense of place. This sensibility enables me to think about proximity, presence, and distance in a way that disrupts my sense of what might be near or far (Hinchliffe et al., 2013). This sensibility contrasts with

perspectives on place, which describe it as "local, particular, and unique" (Pierce et al., 2010,

p. 55), as a locale, with a specific location and fostering a sense of place—of being here. More

expansive views of place are rich, multi-scalar, overlapping. One simple way of thinking about

this issue of proximity is the relationship between the global and local. The so-called global,

from this perspective, is implicated, present, in the so-called local. For example, for my

purposes, global *Minecraft* culture is implicated, present, in our regular MBB activities.

Such a sensibility comes into contact with relational thinking about place (Deleuze &

Guattari, 1987; Ingold, 2011; Massey 2005). Ingold's (2011) meshwork may best exemplify a

relational place. It consists of a "web of flows," that result from the "binding together of lines,

not in the connecting of points" (p. 152). Place is temporary; it is a process. Places are always

moving, shifting. They are "unfinished," "throwntogether" (Massey, 2005). As a result, one

cannot separate its *throwntogetherness* from its movement. Places are shot through with

disparate trajectories, "stories-so-far" (Massey, 2005). Space and time, from this perspective,

are perhaps less important than the unique acts of "spacing" and "timing" (Bingham and

Thrift, 2000, p. 290). Place, from this perspective,

> is an event…neither situated nor contained within a particular location, but is instead
> splayed out and unfolded across a myriad of vectors…vectors of disjointure and
> dislocation [that] may conjugate and reverberate, but there is no necessity for them to
> converge on a particular experiential or physical location. (Doel, 1999, p. 7)

A topological sensibility posits that space-time is foldable, like a crumpled handkerchief. The

flat, well-ironed surfaces of the handkerchief which once appeared widely far apart become

folded over one another, previously separated corners now pressed up flush against one

another (Serres & Latour, 1995, p. 60-61). In much the same way, there is potential for re-

arrangements an re-assortment in any given learning setting; there is the possibility for continual transformation, just as there is always the possibility for (temporary) stasis.

This description of place, however, is largely abstract. Place seems to consist of anything and everything—it is global and local, near and far, related to this *and* that, there *and* then, here *and* now. In this dissertation, I recognize this complexity, yet I intend to rein it in as well, to appreciate its nuance but also to acknowledge that we—researchers, educators, students— never fully take in that complexity in daily life. A critical component of place-making, I argue, is bundling, or what Nespor (2006) calls "calibrating," bringing spatiotemporal order to one's experience in-the-moment.

I will arrive at place-making through a theoretical review of literature that first, recognizes the complexity of place, the movements within and beyond it; then, I specifically take note of the intimate ways in which people make place, largely in collusion with affective intensities. Thus, I first highlight literature related to the mobilities turn in the social sciences before honing in on the relationship between place and affect.

Mobilities

This topological sense of place has helped bring about what an inter-disciplinary group calls the "new mobilities paradigm" or the "mobilities turn" (Hannam et al., 2006). Naive approaches to mobilities assert that everything is on the move, that contemporary culture is one of rapidity, speed. But this mobility occurs at different paces and intensities for different people, having varying impacts and consequences. Within the mobile turn, mobility is "acknowledged as part of the energetic buzz of the everyday (even while banal, or humdrum, or even stilled) and seen as a set of highly meaningful social practices that make up social,

cultural, and political life" (Adey, Bissell, Hannam, Merriman, Sheller, 2013, p. 3). Geographers,

historians, and anthropologist shifted from fixing their work on "the field" to following their

work along "routes," tracing sets of relations across sites. Thus the mobilities paradigm

emphasizes that all places are tied together in, at least, thin networks of connections. In the

end, the new mobilities paradigm challenges social science research that is a-mobile—both

theoretically and methodologically. It seeks out fluidity as opposed to fixed, contained,

territories.

Mobilities also underscore the phenomenological experience of the moving, sensing

body. The entails attention to the corporeal engagement with other bodies and technologies,

practices of movement (like biking, walking), as well as events of movement (commuting, sitting

in traffic). A number of studies have sought to understand the ways in which bodies engage

with and actively move through their surroundings, ranging from the subversive practices of

parkour practitioners (Mould, 2009) to the continual production of place by the kinesthetic

sensation produced by human-bike-road (Spinney, 2006). Others have explored the "micro-

mobilities" of dancers, rock climbers, and walkers (Fincham et al., 2010). Still, bodies do not

move on their own—they always walk on, bike with. Thus mobilities studies also pay equal

attention to non-human bodies through an overt emphasis on materiality.

Materialities—both human and non-human— are also a dominant component of these

new mobilities. This is a post-human ethos very much motivated by the "material turn" across

the social sciences. Simply put, to move through the world demands that many *things* are in

the right place at the right time. Humans and non-humans produce hybrid geographies. The

social, as Law (1994) writes, is materially heterogeneous: talk, bodies, texts, machines,

architectures, all of these and many more are implicated in and perform the social" (p. 2). In fact, Law's depiction of a Portuguese man-o'-war ship has become the exemplar of a human-nonhuman assemblage: more than men and women working together to sail the ship, men and women, ropes and masts, timber and rigging become a unified, pulsing assemblage. The ship-human assemblage is what Latour (1986) would call an immutable mobile: despite its mobility, it still maintains its essential configuration (e.g. it does not become a submarine). de Laet and Mol (2000) contrast the immutable mobile with the mutable mobile: something that can be configured and re-configured depending on place or context. They explore mutability through the example of the Zimbabwean bush pump, a fluid object with properties that are adaptable, flexible, and responsive to needs *in situ*. I write of boats and bush pumps here to juxtapose two forms of material mobility. The mobile turn draws attention to both physical movement through space, as well as the movement—or mutability—of things. Materialities can generate different forms of encounter, new configurations, new attachments.

The new mobilities paradigm has undergone consistent refinement. Cresswell (2010), for instance, calls out the name itself, recognizing that it builds up false dichotomies (new/old, mobile/immobile). In further differentiating mobility from movement[3], he provides additional nuance to mobility, arguing that "mobility involves a fragile entanglement of physical movement, representations, and practices" (p. 19). This is the constellation of mobility. This

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[3] I use mobility and movement interchangeable throughout this dissertation. I do recognize, however, that mobility is politically-loaded, and encompasses movement. For example: Students can physically move but that physical movement takes on a different meaning when they do so at 11 a.m. within a school on a Tuesday versus 11 a.m. outside of a school on a Tuesday. Issues of mobility are at stake when students' physical movements are loaded with meaning, or judgments, or expectations.

constellation of mobility, too, contains its own features. Cresswell urges mobile researchers to further consider the elements of mobility: motive force, speed, rhythm, route, experience, and friction.

Through qualities like rhythm and experience, Cresswell taps into emerging geographic emphases on the experience of mobility, non-representational theories (Harrison & Anderson, 2012) that feel out the embodied and affective registers of mobility and technology. Others have followed this feeling-thinking logic, questioning, for instance, the import of space and time in understanding mobilities. Why not, as Merriman (2012) questions

> position movement, rhythm, force, energy, or affect as primitives or registers that may be of equal importance when understanding the unfolding of events, and why approach space and time as privileged measures for conceptualizing location, position, and context. (p. 24)

Mobilities occur at different speeds, tempos, and rhythms. They are affectively-charged, pushing and pull actors. It is with this conception of mobility that I now narrow my focus through an emphasis on the ways in which non-representational theories of affect inform this work.

Affect

Those in the new mobilities camp most often adopt Nigel Thrift's (2007) take on non-representationalism and affect. With echoes of this topological sensibility, affects signal relation. Affects circulate between objects and bodies as a "capacity to relate" (Adey, 2008, p. 439). They depend on a "sense of push in the world" (Thrift, 2004, p. 64). Others put affect forth as the "energetic outcome of encounters between bodies in particular places" (Conradson & Latham, 2007, p. 232). Massumi (2002), in his translation of Deleuze and

Guattari's *Thousand Plateaus* (1997), ascribes affect as the ability to "affect and to be affected," as a "pre-personal intensity corresponding to the passage from one experiential state of the body to another" (p. xvii). Affectivities are not the feelings of individuals; rather they are the "intense sensations of bodies that are pre-personal and pre-discursive" (p. 133). From such a perspective, bodily sensations are "beyond or before thought" (p. 133). Hickey-Moody and Malins (2007) distill Deleuze and Guattari's take on affect as that which is "felt before it is thought," as having a "visceral impact on the body" before the body gives off any form of subjective or emotive meaning (p. 8). Who we are and what we are capable of stems from embodied sensations. Examples of those affective sensations include when "we encounter an image of a bomb victim, smell milk that has soured, or hear music that is out of key" (p. 8). People are affected before they can verbally articulate their own aversion.

In line with the new mobilities paradigm's emphasis on materiality, affect operates on material schematism (Thrift, 2004). There is an overarching concern with "things," or stuff. As such, affect takes the "sense-catching forms of things seriously" (p. 9). Things become a part of hybrid assemblages: "concretions, settings, flows" (p. 9). They are given equal weight. Thus, such an approach seeks to avoid anthropocentrism. Aligned with this focal shift away from the human subject, the forebear of affect, Spinoza, argues: "There is no subject but only individuating affective states of an anonymous force. The plane is concerned only with movements and rests, with dynamic affective changes" (cited in Alliez, 2004, p. 27).

Affect and place. Recent research within geography and sociology has begun to explore the relationship between affect and place. Early theorizations sought to understand place in regard to emotional resonance. Casey (2001) for instance, delineates between "thick"

and "thin" places. Thick places enable a form of "concernful absorption" in place, a layering of affect, habits, and meaning which connects people personally to place. Thin places, in contrast, lack the "rigor and substance of thickly lived places" (Casey, 2001, p. 684). They are diluted; they disable one's ability to engage with place. Moreover, they do not hold people in place; they are not memorable (e.g. McDonald's, airports). More recently, thick places have been theorized as having an "affective atmosphere" (Anderson, 2009) that is established through social, material and other discursive resources. They emanate from the assemblage of bodies: "human bodies, discursive bodies, non-human bodies." Anderson (2009), for instance, specifically links the creation of atmosphere to practices like interior design and architecture which produce atmospheres as they arrange light, sounds, symbols, texts, and more. Affect describes the particular set of feeling states that can be realized in place. Atmospheres, then, are enhanced, intensified, and shaped. Feeling, sensing bodies affectively respond to these atmospheres—those produced by acoustics, haptics, visuals, and even other bodies.

Place-making

Place-making brings an agent into this discussion of place, mobility, and affect. Massey's (2005) conception of place, for instance, which is *throwntogether*, consists of stories, or "bundles." These bundles are space-time trajectories which individuals pull together through cognitive and emotional processes (p. 119). Arriving in a new place, she writes, means

> joining up with, somehow linking into, the collection of interwoven stories of which that place is made. Arriving at the office, collecting the post, picking up the thread of discussions, remembering to ask how that meeting went last night, noting gratefully that your room's been cleared. Picking up the threads and weaving them into a more coherent feeling of being 'here, 'now.' (p. 119)

This "joining up with," this "linking into," describes the agentive act of place-making. People "bundle" disparate space-times—those near and far—and integrate them into place. They make place. In doing so, they reference and (re)configure "the many places that they participate in; the place-bundles are socially negotiated, constantly changing and contingent (Pierce, Martin & Murphy, 2010, p. 58). Pierce, Martin and Murphy (2010) particularly emphasize place-making as "bundling." Bundling, they write, occurs through both conscious and unconscious acts by people, by choice. People select, or choose, the "raw materials, or elements, which comprise places in their experiences" (p. 58). If Massey describes place as a "constellation of on-going trajectories" (2005, p. 92), then this act of choice is "akin to identifying constellations among the stars of the night sky" (Pierce, Martin & Murphy, p. 59).

Despite coming from a different epistemological background than Massey, de Certeau (1984) also offers useful insights into how people make place. He details the "procedures of everyday creativity" people perform, especially as they move across the grid of the city (p. xiv). de Certeau emphasizes people's "ways of operating" in order to acknowledge, and even conform to power, "only in order to evade it." People subvert these powerful structures—and their strategic forms of control—through "tactics." Tactics, he writes, "make use of the cracks that particular conjunctions open in the surveillance of the proprietary powers. It poaches them. It creates surprises in them. It can be where it is least expected" (p. 37). People deploy these tactics "to suit their own interests and their own rules" (p. xiv).

Mobility—either across space, time, or scale— is critical to place-making. For a number of theorists, from de Certeau to Ingold, the physical, embodied movement of the human body through space begins to produce place: "Their intertwined paths," de Certeau writes, "give

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their shape to spaces" (p. 97). And it is through the movement from one space to another that people "weave places together." This weaving, he notes, is akin to storytelling, part of the "rhetoric of walking," which leads to place-making. To walk, de Certeau writes, is to continually "initiate, maintain, or interrupt contact" with others, both people and things. Through "skips" and "leaps," the walker carves out "gaps in the spatial continuum," amplifying the meaningful places among the space of the ordered grid: a "less," de Certeau writes, is created from more; the "whole" is miniaturized.

But neither de Certeau nor Massey emphasize the affective dimensions of place-making. They make no explicit claim as to how people "identify, negotiate, and transform place" (Duff, 2010, p. 887). In his work following youth participants across important locations in Vancouver, Duff found that, rather than the practices that occur within a given place, it was affect— sensation—that threaded places together. Although specific practices certainly help a given place take on meaning, "the motivating impulse that inspires young people to identify and maintain these sites in the first place is born in and of the affects and capacities they express" (p. 891). Duff provides the example of a skateboarder seeking a suitable location to skate to underscore how people are affected by place—and its atmosphere, its potential:

> Skateboarders encountering a courtyard outside an insurance firm, for example, are first affected by the quality of the light, the expanse of flat concrete leading to a flight of stairs, and the privacy afforded by high walls on two sides, before actually launching into place, board under foot and practice in motion. (p. 891)

Affect, he argues, "serves as a kind of map or tool of navigation," as people move through space; it is the "strange attractor lingering in place awaiting is realization in practice, habit, and sensation" (p. 892). Place-making, then, furnishes an array of resources useful for the realization

of personal enrichment: "specific experiences, ambitions, and capacities" in place (Duff, 2010, p. 882).

Place-making in MBB

In my analyses, I tease apart three lines that constitute part of—certainly not all—of the place that is Metro: Building Blocks. In chapter four, I follow circulations and movements of initial interest, documenting affective intensities—those "strange attractor[s] lingering in place"—that push and pull participants toward learning. I call these "interest-powered mobilities." Then, in chapter five, I follow the rhythms of activity within MBB, illuminating the emergence of learning opportunities. I call these learning topographies. Finally, in chapter six, I follow circulations and movements of civic engagement, or engaged citizenship that operates across space, time, and scale. I call these civic geographies. While I present my analyses in chapters four through six, I bring them together under the auspices of place-making in chapter seven. In doing so, I argue for place-making as an affectively-charged negotiation, and subsequent transformation, of place for personal enrichment.

Prior to turning to my analyses, however, I first describe my methodological approach to my data. This section includes greater attention to the context of MBB and descriptions of my participants, followed by further elaboration of my mobile methods. I thus turn to my methods in chapter three, beginning first with description of a typical day at the library.

CHAPTER THREE

METHODS

Interlude: Typical Day at the Library

I walk in to the teen center at 2:47, saying hello to Jamie who is working at the front desk, and Stephan, who is turning on the TVs for when the teens start entering. I make my way toward the back of the teen center, unlocking the door to the contained study room that has been transformed into Metro: Building Blocks' headquarters (Figure 3-1).

Figure 3-1. The study room in which MBB was held.

By 3:00, I've logged-in users for all six computers so participants can get going right when they come in. Still, one person might show up, or six—I never know. Cameras are set up to record, one from the back of the room, one from the side. Wireless microphones placed.

When participants get going, they'll turn on the iShowU software on their computer, capturing their screen, face of the player, and all surrounding audio (Figure 3-2).

Figure 3-2. An example of iShowU screen capture.

At 3:05, Martin comes in, says hello and gets right to work, picking up where he left off building a mixed-use apartment during our previous session. Jasper shows up a few minutes later, sitting in his normal seat on the far left corner, saying hello to Martin and me but not much else. Knowing that Jasper likes working with me, I sit down next to him, log into the game, fly my avatar over to the single-family home he is building and ask what I can do. While Martin keeps working on his building, Jasper and I plot out the outline of the home: I begin carving out a driveway that leads to a garage in the back; Jasper chooses the wood he wants to use for the walls and begins placing the blocks. As Jasper keeps working on his home, I fly my avatar over to Martin's project. It's coming along: he has a green-roof in the works, trying to

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give residents additional access to green space. He's also aware of the environmental benefits

of it: "It keeps the building cool in the summer, and warm in the winter, so it lowers electric

costs."

At 4:15, Eddy and Tom enter, still sweaty from track practice. They sit next to Jasper and

fly their avatars to the bridge they were working on during their last session. "Eddy, we need to

make that little jutting out part. See it [on Google Image]? It's not straight; it has these parts

that jut out." Eddy and Tom are really focused on verisimilitude: they want to *make* Metro.

They count blocks, trying to get the right number on the east and west side of the Columbia

River. Now that there's some activity by the river, Martin flies over and begins tweaking the

restaurant he built there. Some Non Player Characters (NPCs) that he created walk around:

"Welcome to the Riverside Cafe," one says, "What would you like to eat?" While Eddy and

Tom continue work on the bridge, Martin begins to develop an elaborate lighting system on

the outside of the cafe. He uses redstone to build a circuit underground that sends a charge

through glowstone blocks, temporarily lighting them up one-by-one, the light gradually rising

up each block and then coming back down. Jasper continues to build his house, calling me

over occasionally to help him with a bedroom, or a roof. Eddy moves away from the bridge

temporarily to begin building the Aiguille Building, while Tom keeps on adding details to the

bridge. Jasper gets a text from his mom letting him know she's waiting for him outside. He

logs off and runs out the door.

At 5:30, I sense that everyone's energy is waning. I suggest we do a build challenge—a

YouTube inspired activity in which builders duke it out in an arena, building whatever I direct

them to for a duration of five to ten minutes. I have everyone teleport to the arena that I built, a large flat square with walls rising along the axes to separate four quadrants (Figure 3-3).

Figure 3-3. The author leads a build challenge with participants.

Eddy, Tom, and Martin go to their respective quadrants and await for me to start the challenge. I send them a message that says "Build Challenge: Tiny, island oasis." The countdown begins. Eddy builds a tiny beach and a palm tree; Martin makes a small waterfall; Tom struggles, building one tree before time runs out. I claim Eddy the victor just as a librarian announces over the intercom that the library will close in ten minutes. We all log off of *Minecraft*, shutting down IShowU, and putting the computers to sleep. I pack up my cameras and microphones and follow the crew out of our room. Martin and I chat about his recent band practice as we walk down the stairs to the main entryway. He meets his dad out front while I exit through the back, just before the library closes at 6:00.

The following Infographic (Figure 3-4) acts as an entry point into my methods chapter.

Figure 3-4. Infographic of the methods section.

As I noted in chapter one, this dissertation refines three of connected learning's guiding principles. It targets 1) interest-powered learning that is 2) academically-oriented and that 3) promotes political, or civic, opportunity. To refine these principles of connected learning, this dissertation poses the following research questions:

1) How are learners affected, or moved, toward interest-powered learning opportunities? And how do interests move and circulate in service of learning?

2) What is the topography of learning within an informal, media-rich setting, and what vocabulary can describe the ways in which it takes form?

3) How does civic engagement, or opportunity, move and circulate during participation in this game-based program?

Developing an approach to understanding the ways in which people, things, and ideas move and circulate in the service of learning is critical to this dissertation. And, just as in this dissertation, following movements and circulations of people, things, and ideas is a critical concern to what is called the "new mobilities paradigm" (Hannam et al., 2006). Methodologically, the new mobilities paradigm challenges existing methods in the social sciences, arguing that they deal

> poorly with the fleeting – that which is here today and gone tomorrow, only to reappear the day after tomorrow. They deal poorly with the distributed – that is to be found here and there but not in between – or that which slips and slides between one place and another. They deal poorly with the multiple – that which takes different shapes in different places. They deal poorly with the non-causal, the chaotic, the complex. And such methods have difficulty dealing with the sensory – that which is subject to vision, sound, taste, smell; with the emotional – time-space compressed outbursts of anger, pain, rage, pleasure, desire, or the spiritual; and the kinesthetic – the pleasures and pains that follow the movement and displacement of people, objects, information, and ideas. (Law & Urry, 2004, p. 404)

While I provide plenty of contextual information to Metro: Building Blocks at the front-end of this chapter, the mobile methodology and analysis that I describe later binds this dissertation together. Specifically, I work to extend current mobile methods through a spatiotemporal and affectively-charged approach to my analysis, including: ethnographic commuting, which underscores my moving body as researcher directly after data collection; temporal circling, which underscores my moving body at researcher/avatar in-game during and after data collection; refrains, which underscores the affective space-times produced by participants during programming; and, finally, felt focal moments, an affectively-charged unit of analysis (Hollett & Ehret, 2014).

Prior to turning toward my mobile methods and analyses, I offer a thorough overview of Metro: Building Blocks. First, I give a brief overview of *Minecraft*. To provide further nuance to the creation of this program—and to situate its development more deeply within the literature on virtual worlds—I affiliate my implementation of *Minecraft* at the Metro Public Library with key characteristics of virtual worlds set forth by Pearce (2009). I link each of these characteristics to *Minecraft* and participation in MBB as a means to underscore the many facets of virtual worlds with which participants regularly interacted.

From there, I detail the history of Metro: Building Blocks. I describe the four phases of its development, spanning December 2012-June 2014. I also provide a more thorough overview of the design principles from connected learning that informed MBB. In addition, I note my own theoretical and design conjectures that informed the program, which also align with my theoretical orientation toward place, mobility, and affect. With that background intact, I then provide background information of each of my participants, with additional narratives to

portray my focal participants. Finally, I describe my data sources, and then thoroughly expound

upon the mobile methodology that I employed, and the ways in which I analyzed my moving,

circulating, data.

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Metro: Building Blocks

</div>

Minecraft

Minecraft is a recent phenomenon. Available on personal computer (PC)/Mac, iOS, and

XBox 360, *Minecraft* is slippery to define—it has qualities of both video games and virtual

worlds. As a game, it is simply about breaking and placing blocks. It operates from a first-

person perspective (although players can toggle between first- and third-person). As of this

writing, it has sold more than 12 million copies on PC alone, and more than 30 million copies

across various platforms. Players can choose between one of two modes: In survival mode, a

player might mine various resources (e.g. wood, stone), constructing simple tools (e.g. a

pickaxe, a sword), hoping to avoid, and survive, an attack from a zombie, creeper, or spider.

With time, players may build castles, farms, pistons, and more, all the while exploring the world

by traversing various biomes (e.g. jungle, forest, plains). In creative mode, a player has instant

access to all of the game's resources and can thus build anything, from replicas of the Starship

Enterprise to forms of pixel art (e.g. a giant Pikachu). *Minecraft*—especially when playing on a

server, like the one used for MBB—shares many qualities with virtual worlds. While I do not

place *Minecraft* alongside popular virtual worlds like *Club Penguin* (Black & Reich, 2012) or

Whyville (Kafai, 2010; Kafai, Fields, & Cook, 2010)—primarily because of *Minecraft's*

variability—there are specific qualities that produce a certain sense of community for

participants. In the following, I attend to those qualities, drawing on Pearce's (2009) distillation of virtual worlds, to provide further background to participants' activity on our server.

Characteristics of *Minecraft* as a virtual world. Pearce (2009) defines a virtual world as "a persistent online representation which contains the possibility of synchronous communication between users and between user and world within a framework of space designed as a navigable universe" (p. 27). This means that inhabitants can continuously access that world—the same world—whenever they want. Additionally, they can communicate with co-present others. Virtual worlds, like *Minecraft*, in this case, foster the "collective creation of belief" (p. 18). In designing MBB, I sought to produce the collective creation of belief that participants existed, designed, and built in their hometown—and that they could actively create it. Virtual worlds—as well as massively multiplayer online games (MMOG)—share a host of characteristics, ranging from their spatiality, to persistence, to embodied persistent identities. Following Pearce (2009), I further elaborate on those characteristics below.

Spatiality. Virtual worlds allow for player-avatar exploration through space. Space, in this case, ranges from three-dimensional environments (e.g. *World of Warcraft*) to textual environments (e.g. old-school MUDs). In the case of *Minecraft*, the virtual space is visual, enabling players to traverse a relatively endless landscape.

Contiguous. Very much related to spatiality, the contiguous nature of virtual world's denote the world's continuity. There is a "geospatial adjacent" (Pearce, 2009, p. 18) to the virtual world. It is mappable. Players have a sense of moving within a continuous space. In *Minecraft*, for instance, players trek through various biomes—desert, snow, forest—that are all connected. There is a sense of being in a singular world.

Explorable. Players can go anywhere. While there may be constraints upon where they can explore based on their status or access to transportation, there is a general sense of freedom for players within virtual worlds. Virtual worlds are primarily player-driven experiences. Virtual worlds are open-ended and nonlinear, as opposed to, for example, video games, which are often goal and result-oriented. Battle (2009) likens this open-mindedness to "Alice," (referring to the spontaneous adventures of Alice in Wonderland) as opposed the linearity of a "Dorothy" approach (referring to Dorothy's steadfastness adherence to the yellow brick road as a means to get to Oz).

Persistent. Virtual worlds, like the MBB server, are accessible 24/7. Players can access them at any time. Thus, virtual worlds are not like video games in which one turns on the console and begins a new level or from a saved file. As opposed to short-term bursts of play, virtual worlds enable players to visit and re-visit one world, shaping it over time.

Embodied persistent identities. Because of the persistence of virtual worlds, players often shape and re-shape their avatar over time, adopting new clothes (as in *Second Life*) or facial features (as in *Whyville*). In *Minecraft*, players spend time creating or choosing various "skins," ranging from pop culture characters, to animals, to average teenagers. In MBB, players often adopted skins of popular figures, like Iron Man or Boba Fett.

Inhabitable. Virtual worlds are inhabitable and participatory. Unlike, for instance, first-person shooters in which players move through a pre-determined landscape, virtual worlds enable players to live within—and make changes to—that landscape over time. In doing so, they can "actively contribute to its culture" (Pearce, 2009, p. 19). The ability to participate in a culture is crucial here in that it differentiates virtual worlds from other fictional realms, such as

those created by film, television, or literature. Within MBB, for example, the ways in which participants inhabited the virtual world was critical—we knew that what we built could potentially last for an extended period of time, and that others would see it: those builds would not disappear.

Consequential participation. The participation of a player matters within a virtual world. One's action can affect others' experience within it. In *Minecraft*, for instance, the practice of "griefing," or destroying someone else's build, is a salient example of this consequentiality. Moreover, talking and interacting with others shapes the experience in ways that the linear progression of video games cannot.

Populous. Virtual worlds are, by nature, social worlds. They develop populations that mirror the real world—players develop communities, friendships, even love affairs. *Minecraft* blends the capabilities of virtual worlds. Some players operate primarily in single-player mode, while others solely play on multiplayer servers. In MBB, we always played together, on our server, with occasional deviations onto other servers. Participants certainly developed a sense of community that cut across digital and physical space, leading one participant, when reflecting the relationships he developed, to tell me at the end of our time together: "This is the best thing I've done."

Worldness. Worldness, Pearce admits, is the "most elusive quality of virtual worlds" (p. 20). In short, worldness describes the unique aesthetic of the virtual world. In *Minecraft*, for instance, a server based around the novels of George R.R. Martin's *Game of Thrones* keeps up the appearance of the world portrayed in the novel (and television series). The server does not contain elements of *Harry Potter* or *Star Wars.* Servers develop their own aesthetics, from

contemporary cities, to Wild West towns, to re-creations of popular films, like *The Hunger*

Games. For our purposes, we sought to develop a sense of wordless related to the city of

Metro. To build edifices from other cities, for instance, would have fractured that worldness.

Developing Metro: Building Blocks

Metro: Building Blocks (MBB) provided youth participants the opportunity to imagine,

develop, and build a digital version of an idealized Metro cityscape. Using the Metro Civic

Design Center's "Plan for Metro" as guide for in-game activity and development, the program

emphasized authentic, local issues facing Metro's planners. In-game activity drew attention to,

for instance, planning and design with "respect for the natural and built environment,"

"reestablishing the streets as the principle public space of community and connectivity," and

"strengthening the unique identity of neighborhoods (Kreyling & Center, 2005). This program

developed over an extended period of time, however. I describe this genesis in four phases

(Figure 3-5).
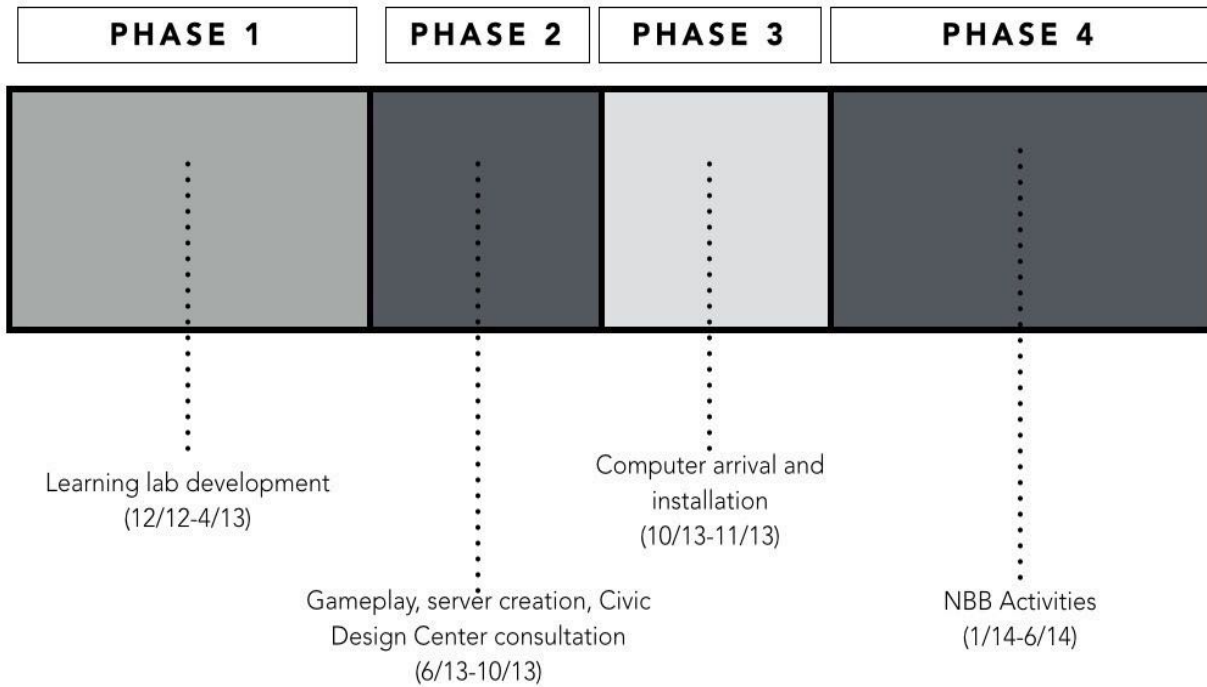
Figure 3-5. A visual timeline of Metro: Building Blocks' four phases.

Phase 1: Learning Lab Development (December 2012-April 2013)

Metro: Building Blocks emerged from my role as a consultant in the design of a new digital media learning for youth at the Metro Public Library. My relationship with the MPL began in 2012. Having received funding from The MacArthur Foundation to explore the creation of a learning lab as an expansion to its current teen center (including digital media production, making, gaming, and writing), the library sought the participation of local youth to participate in this design process (Figure 3-6).

Figure 3-6. Participants in action during learning lab design-activities.

Along with a local architect and Kevin Leander, I designed activities to integrate youth into this process over a twelve-week period, from December of 2012 through April of 2013. Twelve high school students, from various local schools, took part in this program. Specifically, over two of these weeks, I implemented design-activities within *Minecraft*, curious about how lessons learned through the examination of physical space—aesthetics, color, flow, sound— might extend into digital space. Inspired by the energy in the room, the youth's ease of use of

with the game, the products they created and the discourse that ensued, I became drawn to the possibilities of creating further *Minecraft*-based programming for youth at the library. Metro: Building Blocks was born from these activities—and from gracious support of staff members at the public library.

Phase 2: Gameplay, Server Creation, Civic Design Center Consultation (June-October 2013)

In late June, I proposed MBB as a pilot for the kinds of digital media based programming that could run out of the Studio once fully operational. Upon acceptance, the library ordered ten computers that would be used for my program as well as other programs in the future. In the mean time, I began avidly playing *Minecraft*, getting a better sense of the game and its surrounding culture (message boards, YouTube videos, etc.). Over the next few months, I logged well over a 100 hours of gameplay. I also dipped into servers to play occasionally with others, becoming a member one specific server called "Minetown" (Figure 3-7).

Figure 3-7. A screenshot from the welcome page of Minetown, a *Minecraft* server.

This gameplay led me to learn the norms of server communities, kinds of interactions, and the design of external websites affiliated with the servers.

Based on my study of server communities, I created a site/social network for Metro: Building Blocks. This site served as an initial location to interact with participants: I blogged about our builds, linked to other *Minecraft*-oriented sites for inspiration, and added screenshots from our activity to alert a wider audience to our efforts. Participants were able to log in and comment on our site; many of them used existing usernames for similar *Minecraft*-oriented sites (hosted by a company called Enjin; Figure 3-8).
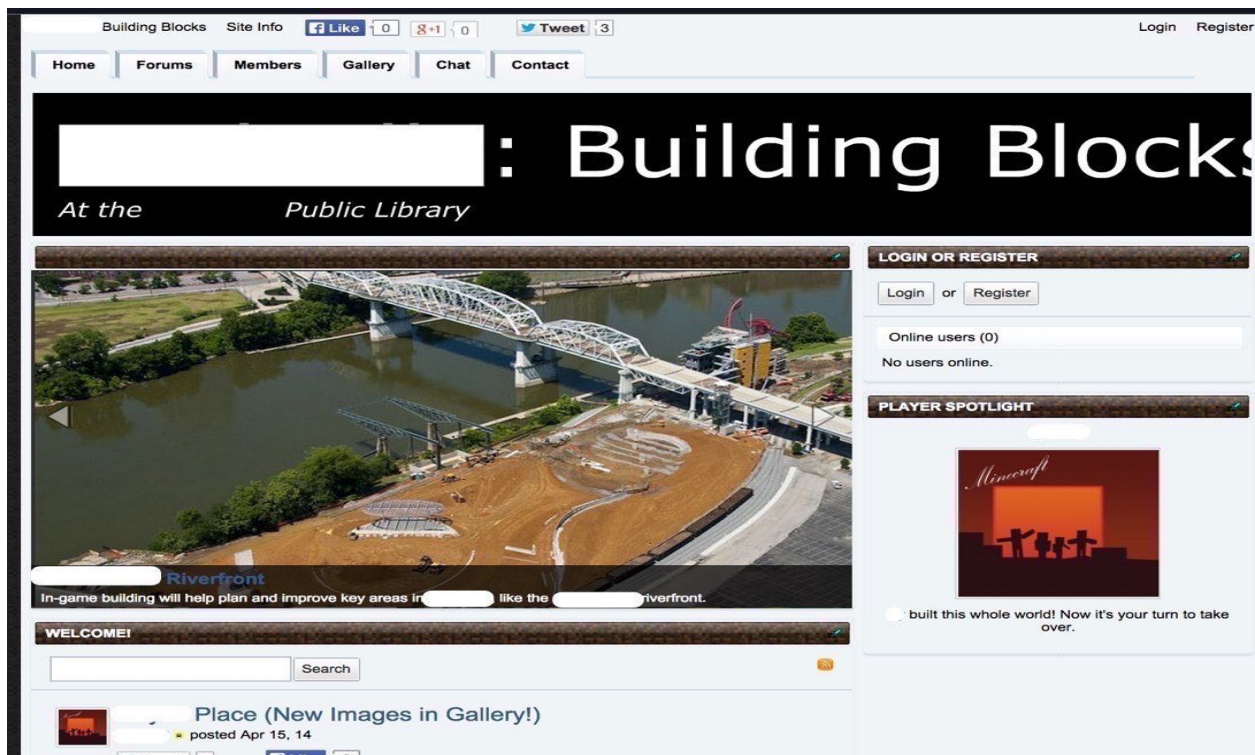
Figure 3-8. A screenshot from the welcome page of the program's website.

Concurrently, I bought server space through a company called Allgamer. Through them, I hosted a *Minecraft* server. This means that the *Minecraft* world I loaded was available 24/7, as

long as participants had the version of *Minecraft* that we were using in the program. Participants could then, conceivably, build, play, and interact on our server at any time—not just when they were at the library.

In early September, I loaded up a *Minecraft* world that was randomly generated. Within the game, I located an area that would be suitable for our builds in "Metro." By locating a suitable area, I mean that I found a swath of land that had a large river flowing through it. I then used specific in-game tools to flatten certain parts, clearing out, for instance, the Columbia riverfront area of Metro. I later cleared out other areas in Metro, ranging from parks to farmland to locations for mixed-income housing residences. I made tweaks to this world throughout October on the server.

From September through late October, I met four times with Rebecca, a member of the Metro Civic Design Center, to describe the plan for MBB and seek advice and consultation. This partnership was ongoing. Together, we devised areas around the Metro community that youth could build within *Minecraft*. We also established learning objectives based upon the "Plan of Metro," ten principles that guide public policy, development practice, urban planning and design in Metro.

Phase 3: Computer Arrival and Installation (November-December 2013)

In November, six of the ten computers arrived. With a portion of their MacArthur funding, the library purchased iMacs which I used for MBB activities. These computers were also used by a poetry organization working with other youth at the library. Still, I had full control of the computers, altering the desktop wallpaper, for instance, to display *Minecraft* characters. I loaded *Minecraft* on all computers. Initially, I ran the program out of the large, empty annex in

which the new learning lab would be built. I populated the room with maps and other posters

given to me by Rebecca at the Metro Civic Design Center. This use of the posters was a

deliberate effort to boost the authenticity of the program. I also posted the Civic Design

Center's "Plan of Metro" on the wall as guidelines for our builds (Figure 3-9).
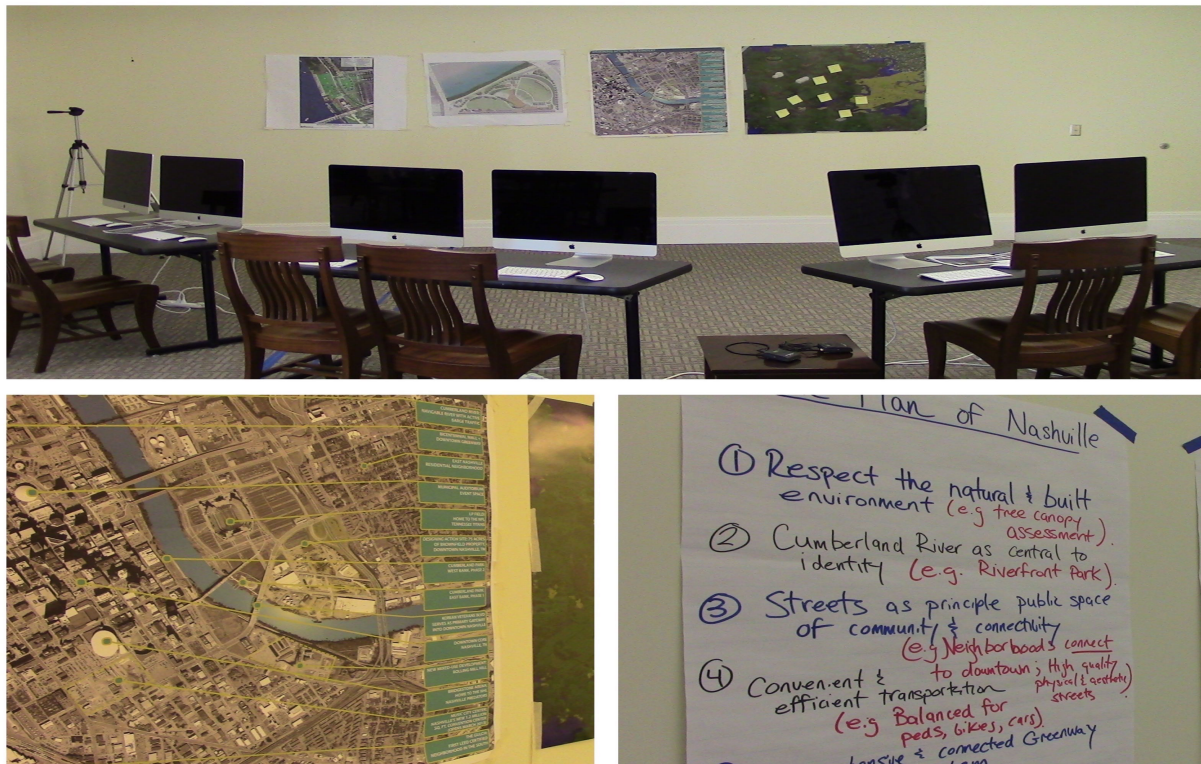
Figure 3-9. The initial setup of the program, including computers, map of Metro, and MCDC's

ten principles.

Phase 4: MBB Data Collection (January-June 2014)

MBB activities began in mid-January. I recruited participants through various channels,

ranging from school district-wide e-mails to principals (courtesy of the library's outreach

program), to personal connections I had with youth who regularly visited the library. Flyers also

advertised the program at the library, as well as on television monitors at local schools

(Appendix A). I received a number of responses from youth and parents alike. The program began, meeting regularly on Tuesdays and Wednesdays from, on average, 3:00-6:00.

Mid-way through our sessions (March), the library officially commenced its construction of the learning lab. Library administration moved MBB into the existing teen center, operating out of one of the available study rooms. This garnered us more visibility. This new space was cozy, keeping all participants close together as opposed to spread out like in the initial annex (Figure 3-10).

Figure 3-10. The setup once established in the teen space.

Operating the program out of the existing teen space also allowed other teens to see us in action—a large window let other teens to peer in. Frequently, teens would walk in and ask what we were doing. We used that window to display our work as well (Figure 3-10, top right).

This spatial shift was significant. MBB now felt like a legitimate program—running alongside other programs/visitors, like African dancers and zoo representatives. As such, it was a first step in re-shaping the existing culture of what opportunities teens could participate in at the library.

In total, we met as a group twenty-seven times, encompassing just over 80 hours of in-room gameplay (and thus data collection, which I discuss in-depth later). I also conducted semi-structured interviews with six participants in June, once our formal meetings concluded, for approximately 45 minutes each.

Connected Learning: Design Principles

In creating MBB, I drew on the design framework put forth by Connected Learning. Knowing that connected learning would feature in the design of future programs developed in the learning lab, I built MBB to prototype the kinds of programming that would be housed there. The design framework for connected learning is meant to be picked up and adopted by key figures at institutions like libraries and museums (Appendix B). In the following, I highlight the design principles put forth by connected learning advocates: production-centered, shared purpose, and openly networked. I describe each tenant and its relationship to MBB.

Production-centered. The production-centered nature of connected learning settings provides youth with ample opportunities to produce and create with digital media. It supports youth production through access to digital tools (*Minecraft*, in this case, but digital video and audio, for instance, in others). Additionally, it enables youth to remix and curate digital content, Photoshopping images to generate novel memes, for example. It also gives youth the chance to circulate and make visible the artifacts that they produce, either physically or digitally through social networks.

In MBB, participants continually produced—that is the spirit of *Minecraft*. As I will describe in future sections, some participants found entry-points to participation and production by digging tunnels underground while others tested out their skills by creating simple circuits that would open and close drawbridges at the flip of a switch. No matter the level of expertise, participants were able to create, make, produce, experiment, and remix though their builds (Ito et al, 2013, p. 75). A common question among participants was "What are you building today?" Or: "What are you working on?" Production was the backbone of our daily activities.

Shared Purpose. A shared purpose embeds learners within purposeful, inquiry-driven activity. These activities are highly social and collaborative; individuals work together, sharing both ideas and challenges. The focus here is not necessarily on the assessment of individual knowledge and expertise, but on the accomplishment of collective goals (p. 75). At times, collaboration and competition can blend together as well. Video games, for instance, can foster both competition as well as real-time collaboration. Additionally, these shared activities can be inter-generational. They can allow both youth and adults to take on leadership roles, providing diverse opportunities to collective efforts.

The purpose of MBB, from the perspective of the participants, was "to build Metro." This provided an automatic shared purpose for participants. They would shuttle between collaboration and competition, working together to build a bridge, or an apartment complex, while also competing, to various degrees, to build the biggest, or most detailed, edifice. As noted earlier, I would also deliberately create competitive opportunities for participants in the spirit of build challenges, five-minute sessions in which participants had to build an object

related to a specific theme (e.g. tiny oasis, or mammals). While the cross-generational

component stemmed largely from my role as an adult playing and contributing alongside

participants, parents were encouraged to stop in and play with their children when possible.

One parent, Stan, joined us one day, learning more about the program by

joining his son, Eddy, in-game. When asked what he wanted to call his avatar, Stan named his

self "El Stan" (Figure 3-11).

Figure 3-11. El Stan joins his son and others in-game.

Eddy taught El Stan how to move through the game world (at one point yelling out, "He's

holding the mouse upside down!" to the laughter of others in the room). By the end of his tour,

El Stan was quite impressed with what Eddy and others had built. El Stan's visit illustrated the

ways in which the participatory dynamics flipped when youth, rather than adults, took on

leadership and the role of the mentor—an uncommon occurred in more formal learning settings.

Openly-networked. Digital media enables learners to cut through boundaries and access a wide-range of resources across settings, like school, home, and alternative learning settings. As such, these networks are cross-institutional, putting those settings—and the learning occurring within—in contact with one another. While those capabilities place emphasis *networking*, the fact that these networks are *open* is just as important. By being open, these networks provide multiple entry-points for youth, giving access to n00bs and experts alike. Moreover, they are clear about forms of assessment and certification, most notably (to date) due to badging systems. Ideally, networks also operate through open intellectual property, enabling access to resources (i.e. images) and tools (i.e. software) that are not denied because of price or property rights.

Minecraft exemplifies this principle, enabling MBB to do so as well. At the broadest, participants were able to access our server from both the library and home. This allowed them, for example, to continue building for extended periods of time if necessary. Moreover, the program provided participants with the chance to network their previous experiences playing *Minecraft* into our program: some participants considered themselves to be builders, others thought of themselves as helpers. Those identities shuttled back-and-forth between *Minecraft* as an affinity space and MBB as a playful learning setting. From another perspective, participants networked their experiences in school, using skill-sets developed in math, or science, to help them obtain their own goals in MBB.

Perhaps even more importantly, participants often networked authentic *Minecraft* resources into their gameplay—YouTube videos, block calculators, user-generated modifications, and more. One important resource was the use of *Minecraft* schematics, or user-created builds, like houses or stores, that people upload to schematic distribution sites. Schematics, then, are downloadable files that players can upload—or paste—into their world (Figure 3-12).
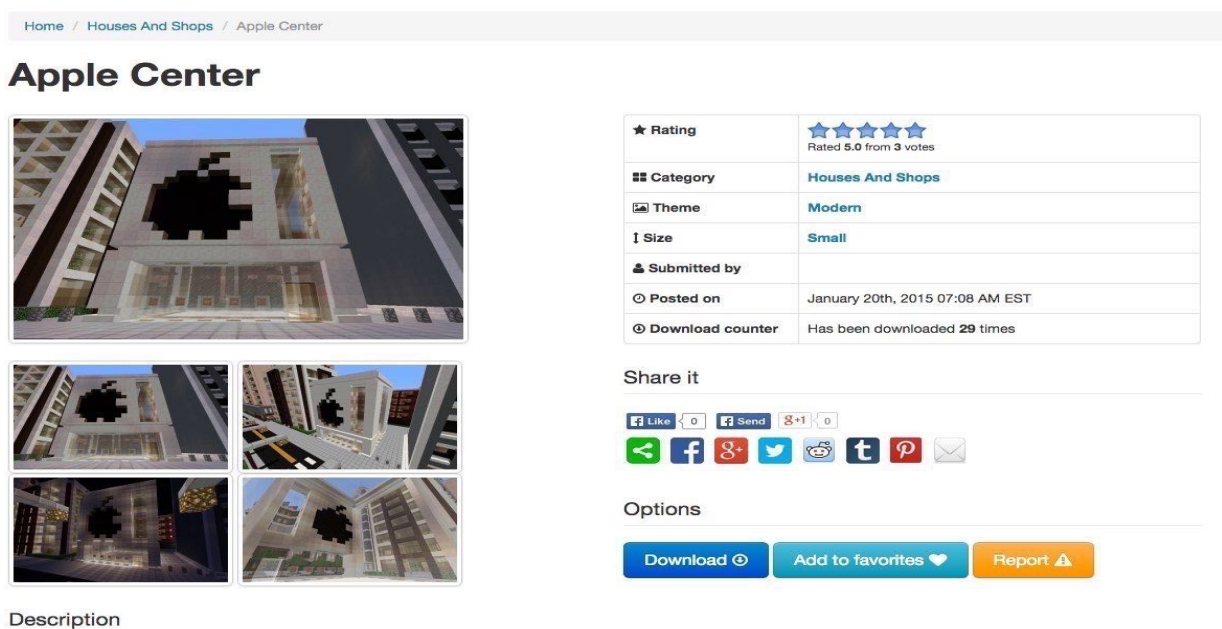
Figure 3-12. An example schematic made by a *Minecraft* player not affiliated with out program.

To give the feel of Metro, for instance, I pasted in certain similar looking buildings, like an approximation of a library, to get us started. These tools and resources were open; they were an important part of the *Minecraft* universe. While my description here has, to a certain extent, begun to set up my analysis, the open access participants had to these resources was critical—not only were they authentic, but they were also highly productive, enabling youth to achieve the goals that they set for themselves.

Social platforms, like Youtube and Twitter, are typically blocked by public school systems. The ways in which networks—so open outside of school—are closed within school hearkens back to Dewey's pronouncement from 1899: "the great waste in the school comes from his inability to utilize the experiences he gets outside the school in any complete and free way within the school itself." Thus, in designing MBB, I worked diligently to understand the various *Minecraft* practices players regularly enacted—from gameplay on servers to the creation and installation of mods to the employment of various resource packs—and sought to make them available as necessary for participants.

Design Conjectures: Place, Mobility, and Affect

While the connected learning framework guided the design of MBB. I also developed my own theoretical and design conjectures related to my guiding strands of place(-making), mobility, and affect (Table 3-1). I do not view these conjectures as mutually exclusive from the design principles of connected learning; rather, I view them as supplementary, a means to further refine connected learning's principles given my emphasis on place, affect, and mobility. I sought to embed these characteristics within MBB.

Number	Theoretical Conjecture
1	Gameplay—and learning—is an affective, felt-experience that unfolds over time and space across bodies, texts, discourse, and more.
2	The affective intensities exerted by (and within) affinity spaces, such as *Minecraft*, recruit player-learners in unique ways that can illuminate how youth

	place-make for their own learning.
3	Learning geographies can be "engineered" (Thrift, 2008) for affective encounters that "bring into being different bodily capacities and modes of attunement" (Ash, 2012).

The subsequent design conjectures were:

Number	Design Conjecture	Brief Description
1	Situating (production-centered) gameplay in the local community can foster affective encounters that facilitate civic engagement, including increased deliberation about city planning initiatives.	Augmented deliberation activities situated in Metro.
2	Adopting a server-based community enables youth to participate in playful learning across space-time, expanding learning (including sharing, assessing, remixing) across settings (server, website, home, library, etc.).	Author operates a server, accessible 24/7. Server is linked to website which enables chat, commentary, sharing of images, etc.
3	Participation is open and multi-faceted, enabling various entry-points (e.g.	Participants of all levels of expertise welcome. Embedded

	individual, use of models, imaginative, etc.) as well as collaborative or competitive opportunities.	"schematics" display what is possible, act as models. "Quick build" challenges offer competitive opportunities.
4	Learning "traces" persist throughout the game-world (non-player characters, city-grid, example buildings, etc.) acting as affective triggers to re-affect playful learning across space-time.	Ever-present nature of server keeps builds "alive," some partially completed, some finished, some ready for more work to be done on them.
5	Facilitator provides both synchronous ("just in time") and asynchronous support; resources continually emerge in response to affective encounters among facilitator/participants.	Facilitator senses energies present in-game (and in-room); fosters relationships that give youth agency/voice in what is possible for the server (new resource packs, mods, flat-world, etc.).

Table 3-1. Theoretical and design conjectures for MBB.

Builders

Thirteen teenaged participants took part in MBB for extended periods of time (at least one month). A number of other participants (approximately 10) dropped in on sessions for

various amounts of time (from 15 minutes to 2 hours). Focal participants ranged in age from 12-16, all male, although females did stop in to check on what we were up to occasionally.[4] Participants also varied in their *Minecraft* skill levels (although skill itself is complicated given *Minecraft's* open, you-can-do-anything nature). While most participants regularly hung out at the teen center after school (e.g. socializing, playing video games, doing homework), others came to the teen center strictly for the MBB program. Still, a few participants were stalwart in their attendance, really driving activity—and possibilities—for others. I first provide general background information for all participants in Table 3-2. Then, I describe my focal participants in more detail within an Infographic-like figure below.

Name	Race	Grade	School	Attendance
Martin	Caucasian	10	Lawson	January-June
Eddy	Caucasian	8	Rosa Parks	January-June
Tom	Caucasian	8	Rosa Parks	January-June
Neil	Caucasian	9	Lawson	March-June
Arthur	African-American	9	Garfield Prep	April-June
Ricky	Caucasian	11	Lawson	January-March
Doug	Caucasian	11	Lawson	January-March

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[4] I recognize the gender discrepancy. Two quick responses: 1) The teen center at MPL is primarily visited by males. While there are no formal statistics, I would put it at a 2:1 ratio. 2) Once MBB started up, I did not formally recruit additional participants. While some newcomers joined, I believe other teens (male and female) did not know that this was an open program that they could freely join (and leave) as they pleased.

Artie	Caucasian	11	Lawson	January-March
Jeremy	Caucasian	7	Thomas Magnet	January-March
Malik	African-American	9	Lawson	March-June
Jerome	African-American	10	Riverwoods	April-June
Jasper	Caucasian	9	Lawson	April-June
Powell	Caucasian	12	Lawson	April-May

Table 3-2. General demographic information of participants; focal participants in orange.

Focal Participants

This figure provides background information about each of the focal participants featured in this study.

Martin

- Sophomore at JR Fink, a local magnet school.
- Because the school is in walking distance to the library, he came to the teen center regularly, often hanging out from 3:00 to 6:00 (closing time) Monday through Friday.
- When I first told Martin about the program, he cautioned me that he could get obsessed with gameplay and was worried he might get distracted from his school work.
- Martin described himself as a Minecraft architect. He enjoyed challenging himself by trying increasingly complicated builds.

Eddy and Tom

- Eighth graders at Rosa Parks magnet school.
- Best friends, neighbors, and very much a team throughout MBB.
- Because their school was not within walking distance to the library, they would catch the bus to the library on Tuesdays and/or Wednesdays.
- Frequent Minecraft players, although they reported not playing as often as they once did. They saw MBB as a new, interesting way to advance their Minecraft gameplay.
- Eddy would sometimes take on larger-scale projects (like the capitol building) while Tom would help with logistical issues, like moving builds to the correct location. Most of the time, however, they would identify a joint-project and get to work on it together.
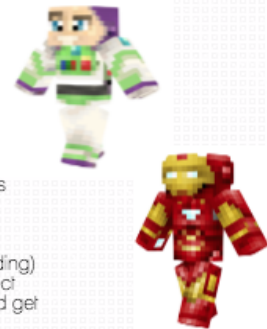
Neil

- Freshman at Fink.
- Identifed the most with Minecraft subculture when compared to other participants. Regularly wore Minecraft t-shirt to programming.
- Often referenced the server he played on from home, Mariande Realms. He found camaraderie on this server, running through a list friends he had made on the server.
- Neil was a source of expertise for newcomers: he would jump in and help others with their builds as necessary.
- Neil would often try to use the in-game chat function to interact with others—a common action on a server—yet others would rarely respond. Those server norms were not necessarily carried into our daily activities.

Arthur

- Freshman at Garfield Prep.
- Arthur played a critical role in developing a transportation system—a complex build that others impressed others.
- Arthur would also play on the server from home, adding on to his transportation system and other builds throughout the week.
- While others often stuck to building edifices that already existed in Metro, Arthur pushed the boundaries more frequently, choosing to imagine possibilities, no matter how unfeasible they may have been (like creating a giant double-helix statue in the middle of a residential park).

Figure 3-13. Description of focal participants, including key points and avatar-skin of choice.

Others participants. A variety of others came through MBB, alongside Martin, Eddy, Tom, Neil, and Arthur. Ricky, Doug, and Artie took part in early programming, always coming and leaving together. They were critical in the initial stages. Jeremy also came through mid-March. Later, a new group of guys became regulars, including Malik, who frequently sang while playing, and Jerome, who enjoyed having a common bond with the rest of the participants. Jasper was also part of this final group, spending a large amount of his time building/designing a single-family home. Powell also attended toward the latter stages, a true newcomer both to the group and to *Minecraft*.

Data Collection

Data collection ran from mid-January to early-June. Sessions at the library typically lasted roughly from 3:00-6:00 on Tuesdays and Wednesdays. The number of participants varied: some days all computers would be filled up throughout the duration of the session. Other days, one person would hang out with me before others would trickle in. Days in which fewer participants attended meant that I had extended opportunities to learn about their gameplay and to ask questions. Days in which many participants attended often meant I was playing alongside them or taking care of technical difficulties.

In order to ensure a thick description of participant activities across settings (notably the physical space of the library and the digital spaces of the game, although I work to eschew such a binary), I document my observations and intra-actions as an experimental partner. The term experimental partner aligns with an ontological shift toward "becoming with"— becoming-with-humans, becoming-with-things (Haraway, 2007). I take experimental partnering as an affective means of corresponding with participants (human and non-human) within the

setting. In short, this is an initial way to describe my role as more than participant-observer. I sought to play as much as possible. Sometimes, I built within *Minecraft* on my own alongside participants while they did their own thing. I felt the frustrations of server crashes; I felt the excitement, the momentum and energy that developed around a unique project.

I maintained a variety of data sources (Table 3-3), including field notes, digital video, and artifacts produced by participants. I also curated a file in the program Evernote to document all field notes, including multiple screenshots from each day's activity to serve as reminders of our progress on the server. These screenshots also documented high-activity areas in which participants played each day. Following Wohlwend (2008), I used this file "to deposit emerging theories, to look up previous interpretations, and to question assumptions against developing data patterns" (p. 36). I was also able to instantly search this file whenever I need to revisit specific clips of data, for instance, thus I tagged each day of data collection by date as well as key terms related to the day, like "Bridge Building," "Sandcastle," or "Redstone."

Data Sources	Description
Digital video and audio (1)	Over-the-shoulder video of gameplay and/or behind participant video. This ensured that analysis did not become over-reliant on the computer screen.
Digital video and audio (2)	IShowU screen capture (including face, audio, gameplay).

Field Notes	Two column-field notes fleshed out observations from each session. I then merged field notes with data logged in ChronoViz. I later transcribed focal sections in Inqscribe.
Semi-structured interviews	Conducted with participants toward end of sessions (late May, early June. These interviews included walking through the digitally built environment.
Backup World Save Files	At the end of each week, I backed up the game world in which participants played and built. This not only acted as a backup file in case something happened to our current world, but also enabled me to re-enter the world as necessary despite changes that might take place over time

Table 3-3. Data sources accumulated during Metro: Building Blocks.

Analytical Moves

In the following, I describe my methodological approach to my data. I do so extensively up front in an effort to position myself alongside emerging efforts to develop mobile methods within the social sciences. As such, my analytical movements follow interests—first in the ways in which they are born, or sparked; then, in the ways in which they "slip and slide" among traditional academic content; and finally, in how they evince forms of civic engagement that takes "different shapes in different places" (Law & Urry, 2004, p. 404).

With an emphasis on mobile methodology, I turn to the ways in which I analyzed my data, contributing three related ways of approaching mobile, (post)qualitative methods (Lather and St. Pierre, 2013): ethnographic commuting, refrains and temporal circling. Together, these

contributions provide a methodological way forward as qualitative researchers continue to grasp for ways to approach data that is always becoming, moving, "in the middle of things" (Deleuze & Guattari, 1987, p. 293).

Mobile Methodology

Within the social sciences, and especially in cultural and human geography, there is a push toward developing more innovative, *mobile* methods (Merriman, 2014). This call for greater expansion, diversification, of methods stems primarily from the epistemological shifts affiliated with the "new mobilities paradigm" (Sheller and Urry, 2006). Mobile researchers, for example, seek new ways to "capture, track, simulate, mimic, parallel and 'go along' with the kinds of moving systems and experiences that seem to characterize the contemporary world" (Büscher et al., 2010). Those working to expand existing methods question how

> existing social scientific research methods that slow down and freeze experiences (the interview, the focus group, the survey) inadequately capture mobile experiences, practices where the context of movement itself may be crucial to understanding the significance of the event to the participant, rather than being simply 'read off' from the destination points and origins. (Fincham, McGuinness and Murray 2010, p. 2)

Thus, the argument stands that there is a need to more "accurately interpret, represent and understand a world increasingly constituted in mobilities" (Fincham, McGuinness, and Murray, 2010, p. 5).

While my analysis aligns with this call for mobile methods, this argument is not entirely unfamiliar to literacy researchers and learning scientists, especially those following participants' across physical and digital spaces. Connective ethnographic methods (Hine, 2007; Leander, 2008) for instance, neither bound nor frame the sites of activity, but rather follow the everyday "sitings" of participants across the settings. My analysis synthesizes connective ethnographic

methods with emerging mobile methodologies. Thus, I not only move with participants across physical (e.g. in-room, in-library) spaces, but also follow them into the digital space of *Minecraft*. I do not simply review data *post hoc* on a computer screen. Rather, my initial analyses occurred *in situ*, with my participants as I played alongside them, built alongside them, laughed alongside them, ate candy alongside them, and "rage quit" alongside them (although the most rage we often felt occurred when the server crashed, destroying our momentum). For all the "movement" that was happening, however, I was also particularly attentive to "stillness, waiting, slowness and boredom," recognize that those moments may be "just as important to many situations, practices and movements as sensations an experience of speed, movement, excitement, and exhilaration" (Merriman, 2014, p. 14). Such an approach echoes sensory ethnographic efforts (Pink, 2013) which attend to experiential feeling, rather than ocular-centric viewing, of data. The experience of data seeks to "create empathetic connections" with participants, a shared goal of closeness.

Yet I by no means abandon traditional ethnographic methods. Merriman (2013) is quite clear in calling out geographers, for instance, who jettison old methods for the new. Even those focused on embodied, moving methods may find that "a well conceived set of interview questions might well be far more effective [than a video recording] at capturing the tension of the performing body as witnessed by the body of the interviewee" (Dewsbury, 2010, p. 325). As a result, while playing alongside participants, I would frequently stop to ask semi-structured questions about their activity. These questions would often turn into long, enthusiastic descriptions of what they were working on, how they came up with the idea, and what they planned on doing next. At the end of our time together, I also conducted more formal semi-

structured interviews, although I did invite participants to move through the game-world to inspire further discussion, to elicit further response, or to teach me as if "I had no idea what they were talking about."

Mobile Analysis

> Often when confronted with the desire to do performative research the kneejerk reaction is to speed fast into devising a research project that involves animating knowledge by using video capture of one form or another: the 'only way' to get at practice and performance, and any other present-tense action. (Dewsbury, 2010, p. 325)

While my analysis relied heavily on audio-video data, I want to first highlight the ways in which I, as researcher, sought to maintain an awareness of affects reverberating throughout the room throughout regular MBB sessions. I first describe this approach though ethnographic commuting (Jungnickel, 2014), which, temporally, took place during and *just* after each session. From there, I jump forward in time to after I had collected all of my data. There, I describe data walking (Eakle, 2007) as a secondary means through which I moved through my data, logging it still with an affective sensitivity. Finally I round out this description of my analysis by detailing my implementation of temporal circling and the mapping of refrains. All of these initial stages of analysis enabled me to target felt focal moments (Hollett and Ehret, 2014) related to interest, academic content, and civic engagement for more thorough analysis. Importantly, for the purposes of this dissertation, I re-visit methods in each analytical chapter (chapters 4-6), providing further nuance to how I analyzed my data given each research question.

Ethnographic commuting. Data analysis began at the library, in-the-moment of gameplay. While I was highly attuned to affective intensities in the room during gameplay (e.g. shouts, lulls, heightened attention to one in-game area), I sought to re-immerse myself in them

directly after collecting my data. Jungnickel (2014) has called attention to the commute that the ethnographer takes to-and-from (or even between) data collection sites. Dubbing this "ethnographic commuting," she describes how her commute to and from her field site by bicycle "became a valuable ethnographic tool" that heightened her "self-awareness in and between field sites, interrupted [her] research and ostensibly changed the accounts of the social worlds [she] encountered" (p. 642). In particular, she urges researchers adopting mobile methods to question: "How are you moving between sites? Why did you choose this method? Is this how your respondents move? Why, or why not?" (p. 647).

I did not ride a bike to and from my field site. I do want to draw attention, however, to the part of my commute in which my analysis began: stopping at a local coffee shop directly after data collection. The coffee shop is trivial; what happened there matters, however. Once at the coffee shop, I dumped all data on to an external hard drive. While adding further detail to my field notes, *I would then re-enter the server space of MBB*, re-visiting focal sites of activity for participants that day—like the capitol building, or an urban farm. To onlookers, it appeared as if I was playing *Minecraft* while sipping a latté. This *post hoc* gameplay was critical because participants could also access the server from home (and thus change the server) directly after school. By re-entering the virtual world, I had an opportunity to be affected, to notice, activity that I may not have been privy to while in the moment during our program: "Who built that?" I would wonder, or "How did that get there?" Moreover, I would take screenshots in-game of focal areas as reminders within my (now visual) fields notes of areas to engage with when fully immersing myself in my data.

Data walking. Upon returning to video data after my ethnographic commuting, I expanded my field notes in a spreadsheet based on additional observations. I did so by performing a variation of data walking (Eakle, 2007). Data walking is an exploration of data "as if you were an open and receptive traveler in a new and unknown territory" (Eakle, 2007, p. 483). Such an approach is not unlike walking through physical space—there are pauses, lingerings, lulls, moments of capture. I was also, of course, drawn back to those focal areas that I highlighted in my field notes. These walks took me through video footage and interviews, and notes. In addition, the three-dimensional nature of *Minecraft* and the footage I have within it (e.g. iShowU video)—the fact that I see/feel the game through the eyes/body of the participant—provided a further opportunity for me, as analyst, to correspond with participants' excitement, frustrations, their tangents and returns. Efforts to feel, then, provided further texture to this specific take on data walking: this is not just novel way of viewing data but, rather, of experiencing data. As such, it aligns with (mobile) methodologies, which do not "slow down and freeze experiences" (Fincham, McGuinness, Murray, 2010, p. 2) but rather "apprehend and experience the mobilities of their research subjects/objects in more direct and multi-sensuous ways—moving, being or seeing with their research subjects" (Merriman, 2010, p. 174).

These observations came from my re-viewing of all video data in the program ChronoViz (Figure 3-14).
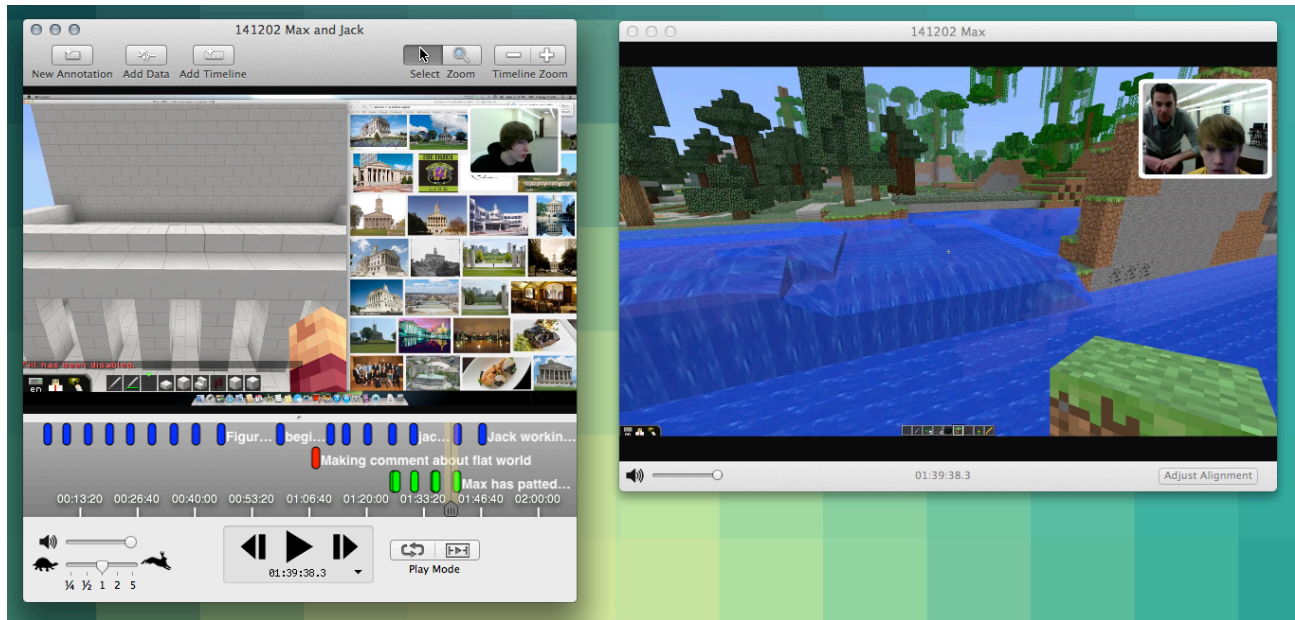
Figure 3-14. Screenshot of ChronoViz analysis in action: two videos synced.

Within ChronoViz, I first logged the content of each video, noting particular strips of activity—

participants' synchronous, if not collaborative, activity around a particular set of materials

(physical maps, in-game blocks, etc.). Within the software, I described each strip briefly. These

strips were "categorized" according to color. Strips of activity, as evidenced in Figure 3-14,

were blue. Because of my initial interest in how I, as a mentor, shaped inter (and intra-)action

within and beyond our setting, I also used another categorization (red) for my own pedagogical

moves. Depending on the number of other participants on a given day, I would use other

categorizations (e.g. orange, green) accordingly, especially if following surprising, interesting,

or aberrant developments.

        ChronoViz was important because of its ability to sync—and then watch—multiple videos

as once. Thus, if Eddy, Tom, and Arthur were all playing together on one day, I would sync up

all of their videos to watch them simultaneously. I then exported all of these strips into a

spreadsheet. Within my expanded spreadsheet then, I not only summarized the general activity from the day, but also noted timestamps of other strips, questions, aberrations for further analysis. Additionally, I would hone in on individual videos as necessary, transcribing them more fully in Inqscribe.

Temporal circling. I did not only watch video, however. In addition to data walking, I performed, what I call, temporal circling. Temporal circling adapts Lemke's hermeneutic circling—a means of following traversals of activity across timescales and settings where "data of each type in each time and place point to and recontextualize interpretations of the others" (p. 150). Hermeneutic circling is helpful when working with large data sets, especially capturing and logging virtual world activity. By temporal circling, however, I underscore the ways in which I *went back in time* to focal points of high energy, productivity, activity. I did so by revisiting server backups of our world that I made throughout MBB. Thus, temporal circling is akin to what I did in my ethnographic commutes, except I was not re-entering the "live" game-world. Rather, *I was re-entering backups* from January, or February, or April, as necessary. No other players were present. Temporal circling enabled me to re-experience the data from my own avatar-embodied perspective. It was a means to supplement the video footage captured from participants' perspectives. Experiencing specific areas in the game world over time—in combination with my other analytic experience of my data—enabled me to focus my analytical attention on, what I call, refrains

Refrains. Put forth by Deleuze and Guattari (1987) the refrain (or *ritournelle*) alludes to an affectively-charged block of spacetime. I employ this term to signal movement and relationality. Within the refrain, certain practices, techniques and habits produce a temporary

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territory. Musically, refrains are returns (and exits), parts of score that repeat, become familiar. Deleuze and Guattari specifically define the refrain as "any aggregate of matters of expression that draws a territory and developed into territorial motifs and landscapes" (p. 323). That is not to say that these territories are made up by explicit borders, however: they can be "affective complexes," produced by the movement of intensities through bodies. Refrains settle and unsettle; they are configured and re-configured.[5]

Because of the open-ended nature of our endeavor in Metro: Building Blocks, participants often started out with a *tabula rasa* upon which they could build; I provided minimal constraints. As participants made headway, new—albeit temporary—borders were produced through their activity. That is, participants put large amount of energy and attention into focal areas or builds. These protean borderlands are refrains (Figure 3-15). Figure 3-15 gives an example of some of the refrains produced by participants from March-April. These are examples of where I targeted my analysis. While these refrains are visually "boxed," they all contain lines, trails, affects moving in-and-out of one another.

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[5] What I am calling "Refrains" are not unlike what Engeström calls the territory/terrain/zone of wildfire activities. This territory is where lines (per Ingold) or "trails" (per Engeström) come together. As multiple trails are marked, Engeström writes, "some trails intersect." A territory is structured by means of a network of landmarks. Multiple trails intersect, "gradually leading to a stable conceptualization of the terrain, and subsequently again to destabilization" (p. 12). I use refrain because of my own epistemological commitments, although Engeström, in this instance, and throughout his entire "wildfire piece," is blurring the lines between structuralist and post-structuralist thinking.
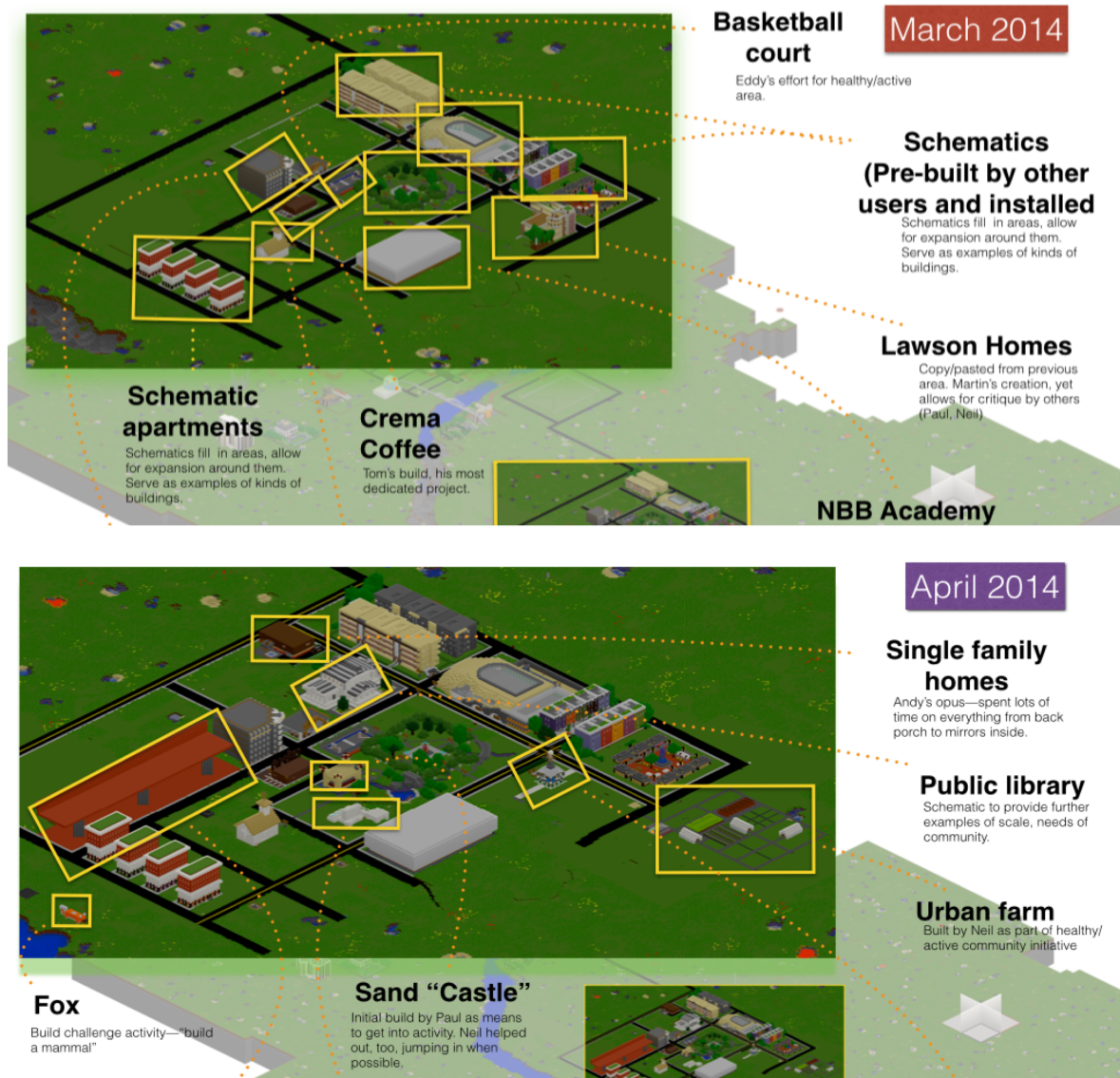
Figure 3-15. Refrains created by participants during MBB sessions over time (March and April)

Felt focal-moments. As a unit of analysis, I adopt what Hollett and Ehret (2014) and Ehret, Hollett & Jocius (in submission) have called felt focal-moments: moments of interruption that are felt upon bodies and that cause those bodies to move unexpectedly. Such a moment arises when the body becomes a site of "intensity through which feelings, textures, and resonances emerge" (Dawney, 2013, p. 635). While the "moment" of this unit of analysis may

signify a static instance, I sought out the resonances, or reverberations, that emanated from this moment. Manning (2009) likens this emanation to elasticity, noting how "movement *folds* around [this point] such that what is felt is not the point per se, but the elasticity of its becoming "(p. 9, emphasis original). Thinking-feeling in terms of elasticity enabled me to trace and tease out the forces that moved toward and dissipated from participants' moments of interruption. Moreover, elasticity provides a different kind of moving language to describe my participants' activity (e.g. folds, stretch, reverberate). It enables me to trace how energies accelerate and dissipate, how force builds and releases.

Specially, within given refrains, I targeted intensities in three waves. In the first wave, I sought out the initial sparks interest for participants, either when working with people, concepts, or specific objects. In the second wave, I targeted intensities that were sought out rhythms, including those at the group, individual, and individual-avatar levels. In the final wave, I targeted intensities related to civic engagement, or political opportunity, following those engagements across space, time, and scale.

Representations

I tell the story of this dissertation through a number of representations. My data is rich, cutting across digital and physical space. I try not to commit too heavily to text to describe events that occurred in-game, especially, often using screenshots to illustrate specific events. Given the representational limitations of print, I have sought to depict my mobile analyses in ways that do not simply freeze my data in individual, static images. While I still use static images from my data to help tell its story (impossible to avoid), I have also created numerous comics to move with talk, action, and feeling across the physical space of the room and the

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digital space of the game. Thus, these representations are meant to give the sense of circulation and movement—almost like quick, jump cuts used in film—as the reader/viewer is forced to move along the page rather than simply view a singular image. I use comics primarily in three ways, which I describe—and illustrate—below to ensure clarity as the reader encounters them in ensuing chapters.

Moving alongside participant-avatar through virtual world. In this example, the comic is simply read from left to right, and from top to bottom (Figure 3-16).

Figure 3-16. An example of comic reading from left-to-right, top-to-bottom.

Moving alongside participant as talk and action traverse room and game.

This comic, too, moves from left-to-right, top-to-bottom. Each interlocutor's discourse bubble

is a different color: the first to speak has a white bubble, the second to speak is yellow.

Connected bubbles aim to give a sense of simultaneity: interlocutors are not necessarily always

taking turns but often overlap (Figure 3-17).

Figure 3-17. An example of comic reading with multiple interlocutors speaking (and avatars

moving) across room and game.

Moving alongside simultaneous talk and action across multiple screens.

These comics contain two images in them: The main image depicts the primary interlocutor and his screen. Embedded within that image is an image from another interlocutor's screen. Although talk is often happening simultaneously, the main image and its bubble are read first, followed by the embedded image and its bubble (Figure 3-18).
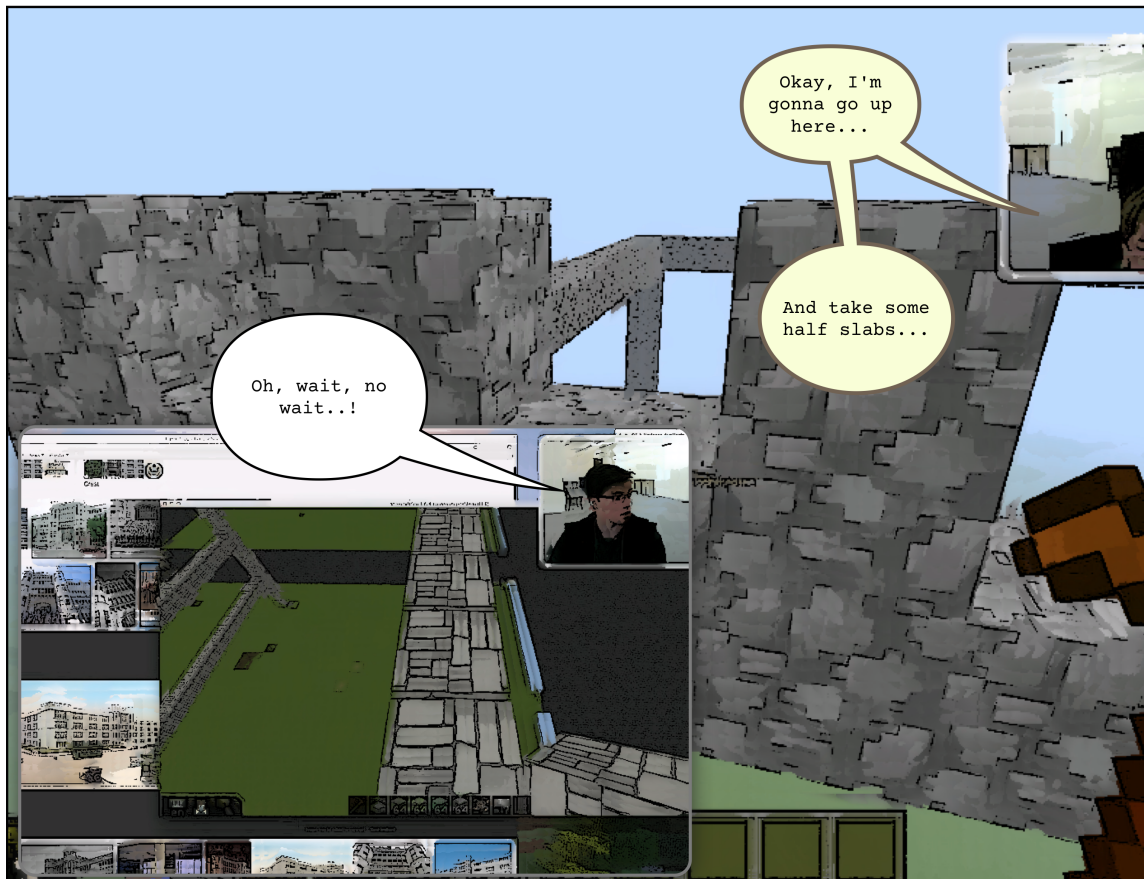
Figure 3-18. An example of comic reading with images embedded within.

Research Questions

With the analytical chapters following, I re-visit my research questions.

1) How are learners affected, or moved, toward interest-powered learning opportunities? And how do interests move and circulate in service of learning?

2) What is the topography of learning within an informal, media-rich setting, and what vocabulary can describe the ways in which it takes form?

3) How does civic engagement move and circulate during participation in this game-based program?

CHAPTER FOUR

INTEREST-POWERED MOBILITIES: MOVEMENT AND CIRCULATION OF
LEARNING OPPORTUNITIES IN THREE PARTS

> …to have a body is to learn to be affected, meaning 'effectuated', moved, put into motion by other entities, humans or non-humans. If you are not engaged in this learning you become insensitive, dumb, you drop dead. (Latour, 2004, p. 205)

In this section, I address my first set of research questions: How are learners affected, or moved, toward interest-powered learning opportunities? And how do interests move and circulate in service of learning? In answering these questions, this chapter refines the "interest-powered" principle of connected learning (Ito et al., 2013). Specifically, I draw on theories of affect and mobility to target the front-end of interest and engagement, the ways in which interests spark, or ignite, and then spread. In the end, I argue for the need for educational researchers to follow—and respond to—interests as they emerge rather than positing them as *a priori* constructs internalized within individual learners. In order to dislocate interest from this internal state, I trace its emergence through a series of mobilities.

I present this analysis as a series of three movements, akin to those in a symphonic score. Each movement makes contact with guiding concerns from new mobilities scholarship: 1) the mobility of people/bodies; 2) the mobility of ideas/information; and 3) the mobility of materials/objects (Hannam et al., 2006). Through this tripartite approach, I intend to depict these findings as parts of a fuller-experience for participants within Metro: Building Blocks (MBB) as opposed to isolated, bound incidents. Musically, a movement is transitional—new movements within a score consist of different rhythms and tempos, like *allegro*, *adagio*, or

sonata. The various movements, of course, fit together as a whole despite the short, silent breaks in-between. The first movement describes the affective intensities resonating between two participants: I analyze this as passengering (Adey, Bissell, McCormack, & Merriman, 2012); the second movement describes affects that emerge between a participant and a specific concept with which he works: I analyze this as mutability (de Laet & Mol, 2000); the third movement describes lingering affects, embedded within peer-produced virtual objects, which stir participants toward action: I analyze this as residue. In the end, I argue that interest-powered learning opportunities opened up and moved throughout this setting by affects that both pushed and pulled participants, that lured and lingered.

From Interest-powered Learning to Interest-powered Mobilities

Youth interest constitutes the core of connected learning. As such, connected learning is "interest-driven," or "interest-powered." At its most general, connected learning is "realized when a young person is able to pursue a personal interest or passion with the support of friends and caring adults" (p. 4). It is important for both academic and community institutions to provide resources and opportunities for youth to pursue their interests alongside one another. Peers and adults within these institutions facilitate the important dialogs and practices that can extend these pursuits into other domains. This process of "building connections to other areas of expertise from the base of an area of deep interest is core to the connected learning model" (p. 57).

There is a deep history of scholarship on interest and learning from which connected learning builds (Hidi, 2000; Hidi & Renninger, 2006; Krapp, 1999). Hidi and Renninger (2006), for example, detail a four-phase model of interest development, which thoroughly reviews

much of the scholarship on interest. The first phase of interest development, they argue, is triggered situational interest. This phase is short-term, resulting from changes in emotional and cognitive processing. These changes stem from surprises, for instance, intensity, or personal relevance. This initial stage of interest can shift into maintained situational interest, focused attention and persistence over a brief duration of time. Maintained situational interest occurs when one was immersed in short tasks, especially those that provided opportunities to collaborate with others. These tasks are often novel or complex. From here, an emerging individual interest can develop, a desire to repeatedly engage with a particular activity or content. This phase of interest is characterized by "positive feelings, stored knowledge, and stored value" (p. 114). It is often driven by curiosity, a desire to ask—and solve—questions that that are self-generated. Finally, emerging individual interests can lead to well-developed individual interests. This deepest phase of interest is signaled by continuous (re)engagement with particular tasks for which the student has a well-developed interest. In this case, students not only self-generate challenges and questions, but also have collected ample resources to help solve those problems, persevering even in the midst of frustration.

Studies of interest are not unrelated to studies of student engagement. Hickey's (1997) review of engagement traces a variety of research, much of it coming from experimental psychology. Literature on engagement arrives in various guises, cutting across issues related to student goals, motivation, and interest. Dweck's (2000) treatise on cognitive-motivational patterns, for instance, details the self-theories that people develop and the internal, psychological worlds they create for themselves as a result. Those who hold entity views, for instance, treat intelligence as fixed, stable. In contrast, those adopting an incremental view,

treat learning as malleable, as something that can be altered, changed. The learning goals for each respective theory of intelligence shape forms of engagement.

As Azevedo and colleagues (2012) note, however, "experimental psychology has been mute about the processes underlying student engagement" (p. 59). As such, the experimental situations deployed have been unable to capture the realities—and complexities—of learning settings, both formal and informal. The literature has been unable to provide answers for questions such as: How does interest or engagement

> develop over periods typical of lessons or whole units (e.g., days or weeks)? How does engagement emerge from the interactions among participants in a classroom? How does the material infrastructure available to students, analyzed in a moment-by-moment fashion, affect their ability to engage classroom material? (p. 59)

While Azevedo and colleagues' questions provide a way forward, a means to get interests and engagement out of the head, these questions continue to promote an approach to interest-powered learning that is bound, contained, in numerous ways. They are concerned with the temporal containers of lessons and units, for example, as well as the spatial containers of classrooms. But Azevedo and colleagues also introduce new questions for those exploring the genesis of interest and engagement, wondering how those engagements spread among "participants in a classroom," how the very materiality of infrastructure and tools ("interest objects") impacts engagement and interest. These questions are critical, moving educational research toward an understanding of interest-powered learning that recognizes its contours, its variability, rather than tracing it along a linear pathway of phases. Importantly, Azevedo calls attention to the emergent qualities of interest and engagement, how interests and engagement can develop in a "moment-by-moment" fashion. Interest, as I will argue, is not an

a priori entity that must be connected to a specific activity, rather it moves and emerges *in-between*—in-between bodies, in-between ideas, and in-between (im)material objects. Interest, I argue, is mobile.

Interest, Affect, and Enthusiastic Mobilities

Scholars adopting the new mobilities paradigm have sought to differentiate the various qualities of movement. These qualities include, for instance, the speed of movement, as well time, tempo, and rhythm. Cresswell (2013) has particularly highlighted the relationship between friction and movement, how friction draws attention to "the ways in which people, things, and ideas are slowed down or stopped (p. 108). In addressing my research questions, I am particularly attuned to interest-powered moments where things appear to slow down— where bodies *take interest* (Dawney, 2013). To analyze these moments of interest, of affective sparks, I draw on recent work from mobility studies which explores the intersection of mobility, affect, and enthusiasm (Hui, 2014). Enthusiasm spurs mobility. Enthusiastic relationships among "people, things, and ideas shift the capacity and potential for mobilities" (p. 173). Connections among people, ideas, and objects "reveal and inspire potential movements" (p. 173). These are enthusiastic mobilities.

Hui (2014) distills enthusiastic mobilities down to three components: atmospheres that promote mobility within space, forces pushing people through space, and lures pulling people to space. In this chapter, I am particularly concerned with the latter two. Attention to affect, enthusiasm, and mobility displays ecologies of affect—the ways in which disparate affects bundle together (i.e. affect manifested as fear + affect manifested as enthusiasm), pushing and pulling a person through space. For example, mountain bikers, cycling downhill, follow "desire

lines": residual traces of mobility, of interaction with the world, which project possible

trajectories for people. In response, Hui notes that the "push and pull relationship of affect

therefore becomes central to the mountain bikers' movements" (p. 176). Similarly, parkour, a

form of street running, or urban gymnastics, also illustrates this affectively-charged push-pull.

Parkour enthusiasts, for example, not only propel themselves through space—their enthusiasm

carrying, pushing them forward—but they are also lured in by the qualities of specific walls or

rooftops. Exploring enthusiastic mobilities is therefore, Hui writes, "not about identifying

people who move during emotional states of passion"; rather, "it is about interrogating

relationships where passion and inspiration are manifest in mobilities" (p. 173). To target

moments in my data in which "passion and inspiration are manifest in mobilities," I further

refine my overarching mobile methods to account for the specific forms of "following" that I

perform. I articulate this methodological nuance below.

Methodological Refinement

Researchers have adopted mobile methods in variegated ways. Jungnickel (2014)

provides a thorough overview of mobile methods, including methods that follow those that

"follow the people, thing, or idea." This approach is most recognized in Marcus' (1998) stance

that multi-sited ethnography is useful for "suturing locations of cultural production that had not

been obviously connected and consequently, for creating empirically argued new envisionings

of social landscapes" (p. 93). In my analysis, I build from my previously described methods by

performing a variation of this approach. While my participants were not physically mobile, their

collaboration, their ideas, and their avatars were. And, importantly, much of this movement was

powered by enthusiasm. Thus, in the first movement—passengering—I begin with an

enthusiastic felt focal moment as two participants collaborate with one another. In the second movement—mutability—I begin with an enthusiastic felt focal moment as one participant moves with and develops a specific structure over time. Finally, in the third movement—residue—I begin with an enthusiastic felt focal moment related to an in-game object that lures a participant toward it, moving, and pulling him toward participation. To be clear, however, I am not arbitrarily trifurcating people/things/ideas. When moving with people, for instance, I am often moving with ideas; when moving with ideas, I am often moving with things.

Relatedly, by presenting these findings in movements, I do not intend to imply that they are mutually exclusive. Rather, I argue that these movements are very much related: they are separated here for clarity. Within each movement, I organize my followings by (1) providing a thick description of the interactions among participants, game-based artifacts and/or characters that contribute to the refrain; (2) identifying the felt focal moment; and (3) analyzing the ways in which learning opportunities emerged from that felt focal moment.

Three Movements

Movement 1: Passengering

In this section, I describe the ways in which enthusiastic affects reverberated between one collaborative pair, Martin and Jeremy. Specifically, I emphasize the ways in which Martin's bursts of excitement in learning how to create a non-player character (NPC) spurred Jeremy's own interest-powered learning. As such, I contribute an expansion of peer pedagogy (Carter Ching and Kafai, 2008) that emphasizes the affects between learners and (peer) teachers as they move forward together along a learning trajectory. Borrowing from mobility studies, I will

refer to this affective learning progression as passengering (Adey et al., 2012; Hui, 2014;

Laurier et al., 2008)

On the third day of activity (January 28), Martin and Jeremy worked next to one another

in-room, but far apart from one another in-game. Martin worked by the Columbia riverfront;

Jeremy by B. Dewitt Dam (Figure 4-1).
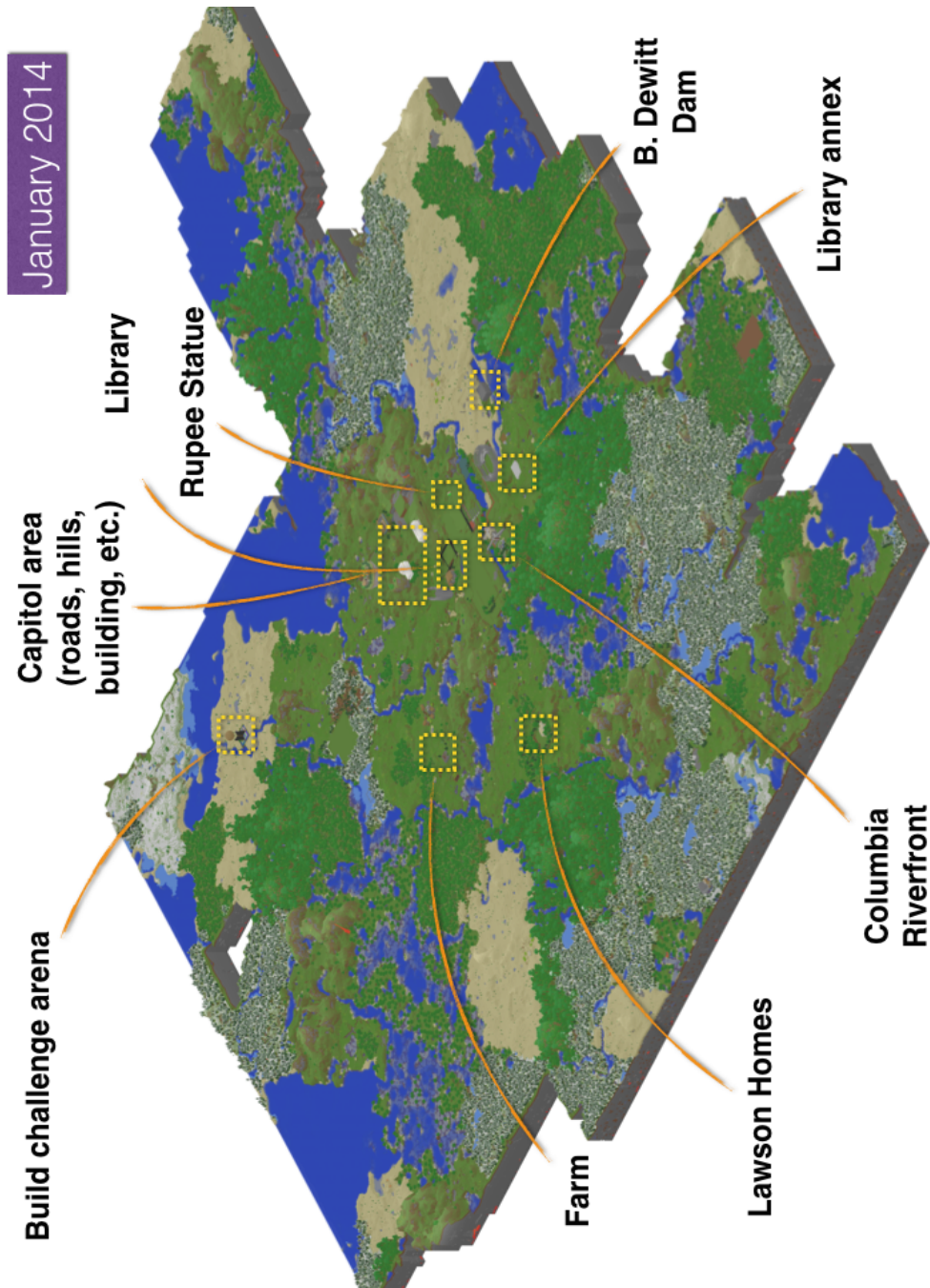
Figure 4-1. A map of Metro, including the initial refrains, in its earliest stages of the MBB program, the final two weeks in January.

Martin picked up where he left off the previous day, concentrating most of his activity on a park adjacent to the Columbia River. He took his time, first clearing out aesthetically unpleasant

blocks, then placing down the sidewalk that circled throughout the park. To do see, he drew on inspiration from both his own embodied experience in the park, as well as a host of pictures that he called up via Google Images. He recognized that there was no art in the park, so he built his own: a circular stone structure reminiscent of a globe. Upon completion, Martin explored the surrounding landscape, stopping by the library, and eventually finding an open area with nothing nearby it. He began to build a giant rupee, a form of currency found in video games.

Once the rupee was completed—an hour and twenty-five minutes after his arrival—Martin made his way to the capitol building, which he built in a session the previous week—and began exploring the creation of non-player characters (NPCs). NPCs are in-game characters with whom human players can interact. In a role-playing game, for instance, an NPC might send a player on a quest, or give her a healing potion. In MBB, participants used a modification to the game called "Custom NPCs," which allowed players to create and insert their own NPCs into the game. In designing his NPC, Martin took his time, testing out the different possibilities for an NPC—trade with it; giving it a bow, a sword; enabling it to move quickly, slowly. Eventually, Martin created a skeleton, making it a guard that would protect Martin if other zombies came and attacked him (Figure 4-2).
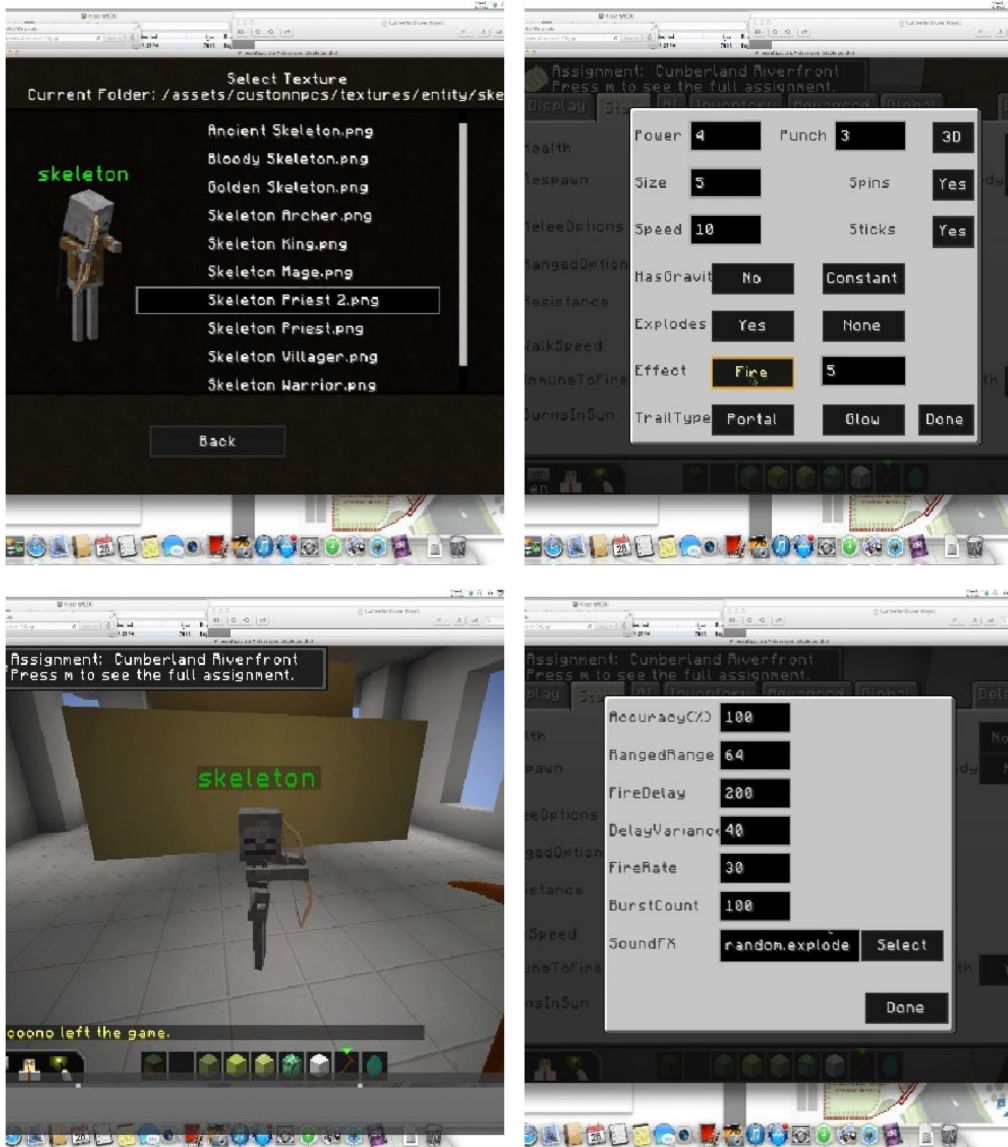
Figure 4-2. Martin's process of creating an NPC, including selecting the type, altering its settings, placing it, and adjusting it (clockwise, from left).

Martin's playful trials taught him that he could make an automatic "spawner"—a block that would infrequently spawn, or create, additional skeleton guards. This awareness led him to shout out, "Ohhhh….oh God!...Oh jeez!" as he realized what he had just stumbled upon. Textually, it is difficult to show feeling, the ways in which Martin's interest began to transform at

this moment and how it adhered to Jeremy. Audibly, this moment sounded like this (Figure 4-3):
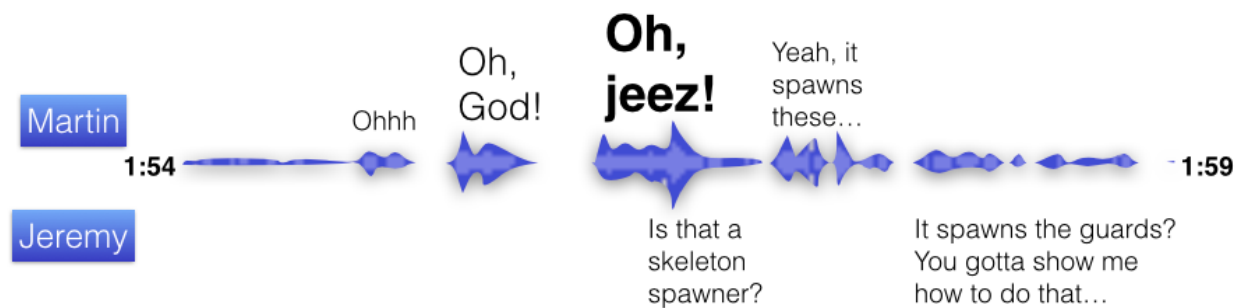
Figure 4-3. Audio visualization of the rise of Martin's excitement and Jeremy's initial orientation toward it.

I identify this moment of excitement between the two participants as a felt focal moment, the instant in which Jeremy and Martin both exuded an increased level of interest, of momentum, evinced through their body-talk. This enthusiasm re-oriented their participation as Jeremy, seeing what Martin had just created, beseeched: "You gotta show me how to do that…"

Initially, Martin took the lead, giving Jeremy an overview of possibilities for the creation of an NPC: the kinds of NPCs available, their capabilities, their aesthetics, and more. But Martin was still learning how to work with the NPCs himself: His skeleton guard would not actually *guard* him; rather, it would simply walk toward enemies without shooting arrows. Jeremy was unimpressed, asking: "So, it just leaps at him?" With a captive audience, Martin had to quickly figure out how to fix his supposed guard: he tweaked the "Advanced" settings, assigning the skeleton the role of "Guard." Upon his return to the game, his skeleton had now attacked a nearby zombie, turning the zombie into a slab of rotten meat (as so happens in *Minecraft*). Martin then spawned a number of zombies for his guard to practice on (Figure 4-4).

Figure 4-4. Martin's guard defeats the dreaded zombie horde.

Martin's guard made quick work of the zombies, shooting arrows which engulfed the zombies

in flames. This led Jeremy to exclaim, "Whoa! They're super fast!" He then began to work on

his own guard.

While Martin instigated the implementation of NPCs, Jeremy quickly caught up—

becoming more active, more excited—testing out new capacities for the NPCs on his own.

Jeremy partially narrated his progress, asking questions to Martin along the way (Figure 4-5). I

present their dialogue in the following figures in comic form, as a means to move with talk as it

traverses both real and virtual, room and game:
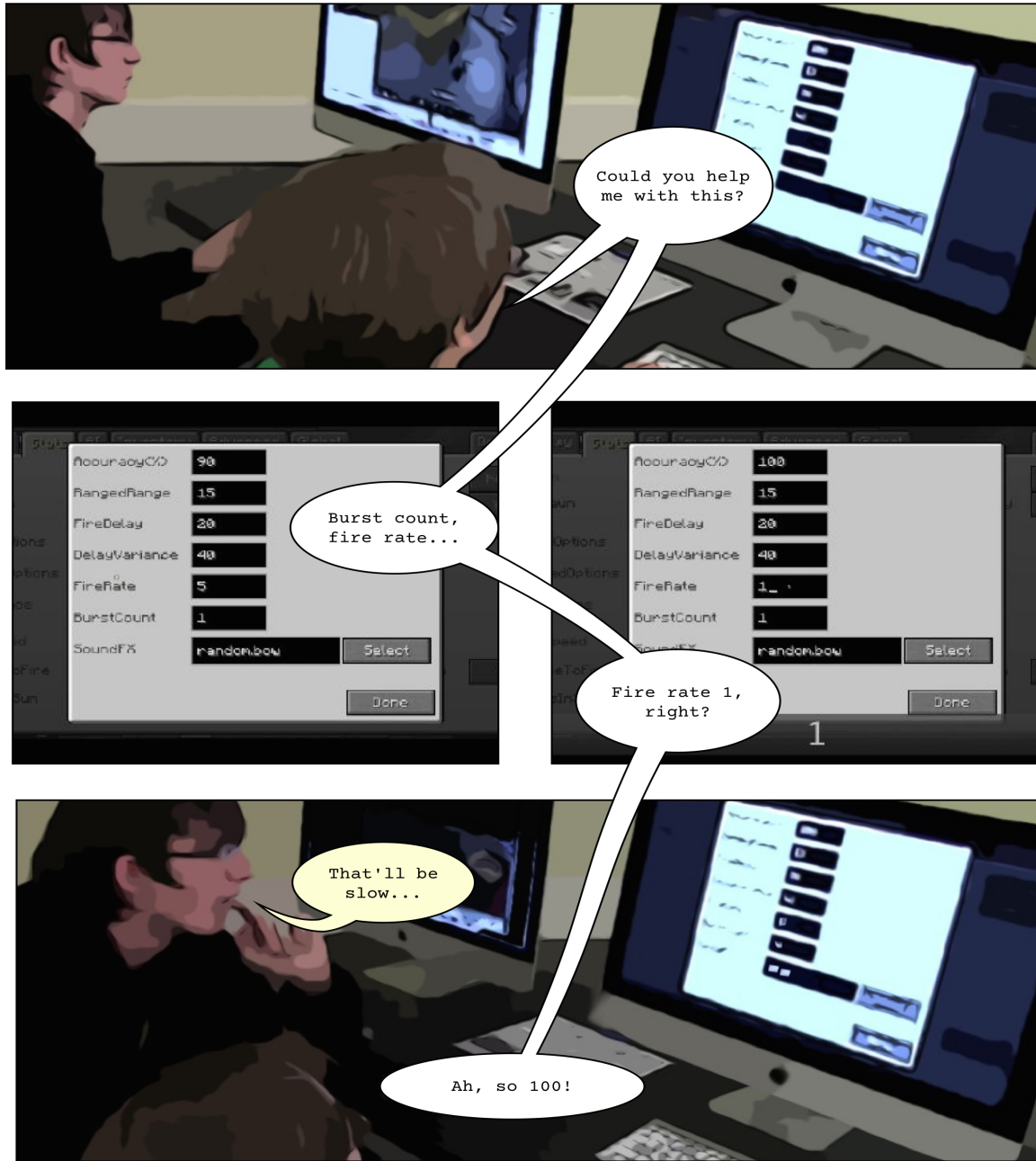
Figure 4-5. Jeremy seeks Martin's guidance as he develops his own NPC.

Jeremy queried the interface that enabled him to create an NPC. He began by asking for

Martin's help, although Martin was caught up in his own NPC creation. As Jeremy cycled

through different options for his NPC, he encountered an issue with which Martin also just

overcome: the rate at which his NPC would fire a weapon. This piqued Martin's attention—he knew how to solve this issue—and he leaned toward Jeremy, clarifying that a fire rate of one would be slow.

With the issue of fire rate solved, Jeremy tested out his NPC—but nothing happened. His NPC would not retaliate against nearby enemies. Jeremy was frustrated; he kept tweaking options—narrating them out loud— but nothing seemed to work. Jeremy again posed his question out loud: "Why won't he shoot?" His frustration, and desire to figure out what was wrong, was evident in his rapid talk as he again sought an answer in the NPC interface, hovering his mouse over options: "Stats…AI." When nothing in the interface clarified the issue, he called out to Martin: "Can you please help me?" Martin guided Jeremy to the "Advanced" tab; from there, Jeremy chose the kinds of monsters he wanted his NPC to attack, clicked save, and returned to the game to find that his NPC had attacked and killed a nearby zombie (Figure 4-6).
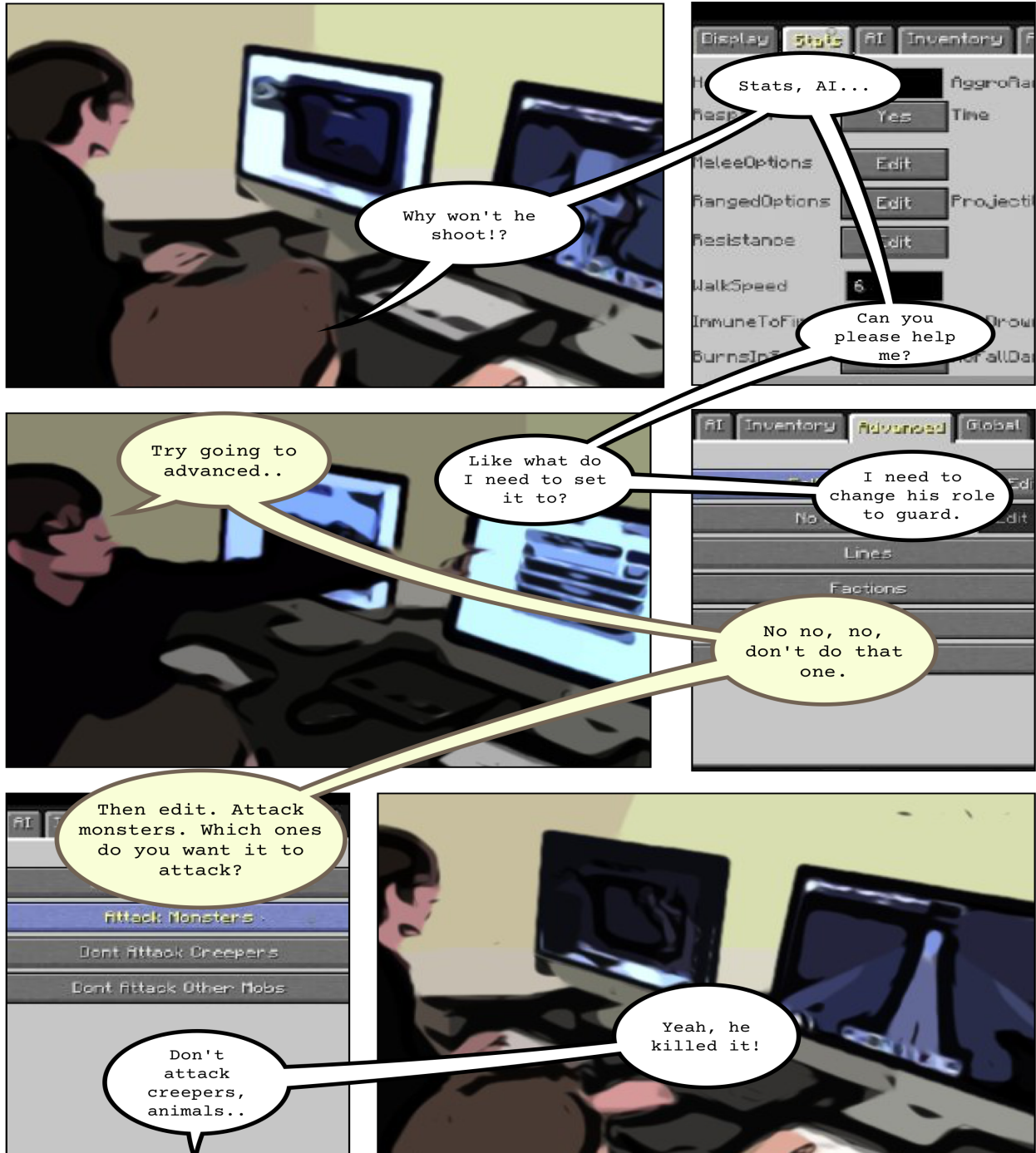
Figure 4-6. Jeremy solves his NPC problem with Martin's guidance.

Analysis: Passengering as affectively-charged peer pedagogy. Martin and Jeremy progressed forward, learning how to create NPCs together as they encountered a difficult, yet engaging. This experience, however, was not just interest-powered, but interest-propelled. Martin and Jeremy learned how to develop NPCs alongside one another, rapidly prototyping, failing, re-adjusting and, finally, succeeding. But this learning progression, I argue, emerged from more than their dialogic interaction between one another, or the spatial configuration of their bodies. Rather, it was affectively-charged, led forth by the enthusiastic, responsive, push-pull between Jeremy and Martin. This is passengering.

Etymologically, the term passenger dates back to the 15th and 16th centuries where it marked both the person who travelled, as well as the person, or thing, that enabled the travelling. Within cultural geography, a number of studies have investigated the experience of the passenger (Adey et al., 2012; Hui, 2014; Laurier et al., 2008). These studies note that the "bodily experience of the passenger—be it by boat, car, or train— is not simply one in which [the body] is an anonymized parcel of flesh…shunted from place to place just like other goods" (Thrift, 1996, p 266). Rather, for one to become a passenger, one is always in the emergent process of "being" or "becoming with" (Bissell, 2010, p. 270). In fact to talk of "'fellow passengers might gesture to the fraternity of togetherness that emerges through moving with others" (Adey, 2012, p. 171). Passengers are always "becoming with" someone or something—other riders, other drivers, other things. In "becoming with," the passenger emerges through the "torsion of the active and the passive; the deliberative and the acquiescent" (Adey et al, 2012, p. 187). Over a span of 12 minutes, I argue, Martin and Jeremy "became with" one another.

In previous work, I have described the ways in which various "bodies"—human and non-human—"became with" one another throughout the experience of gameplay (Hollett & Ehret, 2014). In that case, I described how those bodies—including chairs, lights, game characters, sounds— were "in a constant state of becoming" with one another throughout the experience. In the case of Martin and Jeremy, while I emphasize the enthusiasm that propelled both of them to learn how to implement NPCs, in-game bodies (the ability to make NPCS, zombies, spawners, etc.) certainly contributed to the emergence of this enthusiasm. Jeremy's interest, initiated by Martin's shouts, waxed and waned as he sought to create his own skeleton-guard. He was first captivated by Martin's overt excitement, lured in by those shouts and the fact that Martin could now, conceivably, spawn as many zombie-guards as he wanted. But Jeremy's interest faded as the skeleton-guard failed to do its job: it only leapt at its target; it would not shoot the zombie. Martin felt, and responded to the attenuation of Jeremy's enthusiasm, rapidly trying to figure out what was causing this failure. Martin's so-called "success," then, was not only apparent in his guard's crushing defeat of a horde of zombies, but also in Jeremy's renewed excitement toward learning how to create his own skeleton-guard. "Please, show me how to do that," Jeremy requested again.

Figure 4-7 illustrates this sense of "togetherness" that emerged among Martin, Jeremy, and even the in-game "bodies" throughout their joint-production of NPCs. It re-visits pivotal moments (portrayed as images or through quotations) introduced above. Rather than isolating individual frames, however, I am interested in ebb-and-flow of enthusiasm and how it propelled both Martin's and Jeremy's creation of their respective NPCs.
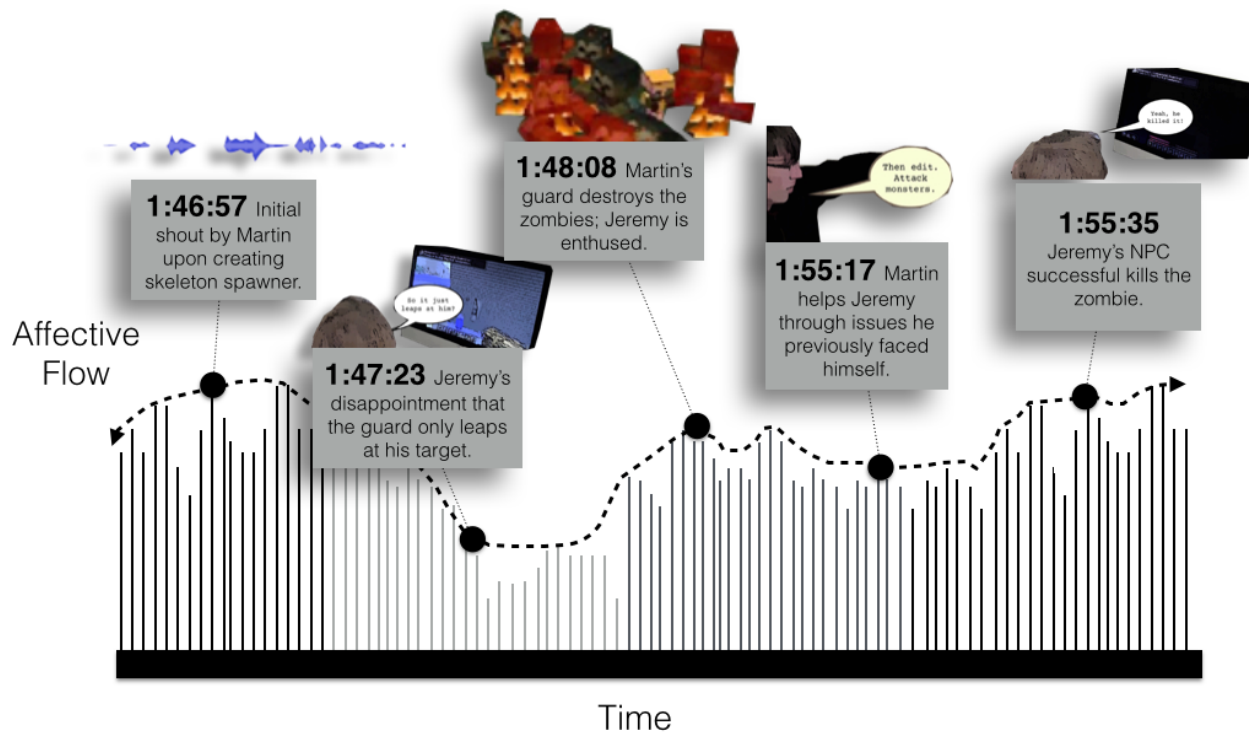
Figure 4-7. Enthusiastic flow across Martin, Jeremy, and in-game bodies toward production of NPCs.

While affective intensities reverberated between the two players throughout the duration of their play, this twelve-minute period was particularly charged with affect. In this span, an energy—and excitement—emerged that propelled the production of NPCs further for both Martin and Jeremy. I put forth passengering as a form of peer pedagogy (Carter Ching & Kafai, 2008) that results from "becoming with" another learner, from repeated affective encounters between (or among) learners. Passengering is one form of mobility within this learning setting. In this instance, both Martin and Jeremy moved onward—they traveled—together as they learned how to develop NPCs. While Martin's initial affective encounter introduced NPCs to Jeremy, affective intensities continued to reverberate between Martin and Jeremy as they

experimented with alternative ways to create NPCs. Martin and Jeremy became-with. They

moved together, further learning how to work with NPCs, through this torsion between active

and passive, deliberative and acquiescent.

Martin passengered Jeremy, acting as both catalyst of his learning, then docent, and

then learning partner. This shepherding, I recognize, is not unlike the long history of

conceptions of learning that appreciate scaffolding by more capable others (Rogoff, Paradise,

Arauz, Correa-Chávez, & Angelillo, 2003), collaborative learning (King, 1993), or peer

pedagogy (Carter Ching & Kafai, 2008). Passengering offers an extension to peer pedagogy,

however, that moves beyond "patterns of student collaboration" (Carter Ching & Kafai, 2008,

p. 2611). Martin certainly fell into patterns of talk—responding to Jeremy, suggesting what to

click—but Jeremy's successful creation of an attacking NPC was the result of more than simple

guidance throughout this episode. In "becoming with" Martin, Jeremy sensed and felt his

excitement. He responded to that enthusiasm, and that enthusiasm pushed him to pursue a

new learning goal. Martin, too, responded to Jeremy—first his initial intrigue, then the waning

of his enthusiasm, and later his pleas for his help. Patterns of talk—which cohere to make up

the "everyday collaborations between experienced and inexperienced students" (Carter Ching

and Kafai, 2008, p. 2611)—cannot describe the feeling that surrounds emergent learning

opportunities. Passengering provides further nuance to the experience of learning alongside

another.

Movement 2: Mutability

This section transitions into an explicit focus on the ways in which learning opportunities

circulated between Martin and a non-human component of the game that he created. That is,

rather than following the enthusiasm that circulated between two players learning together, I now follow a specific idea—a lighting system developed by Martin. Specifically, I focus on the mutability of the lighting system, the ways in which Martin repeatedly manipulated the lighting system, building it in multiple locations, to re-new interest—and learning opportunities—for himself.

Our initial production of Metro began on the Columbia Riverfront Park—a large family-friendly greenspace that the city recently developed next to Argonaut Stadium. The park includes a play area for youth, including climbing walls, waterspouts, as well as a nearby walking trail that is designed to attract butterflies. A small stage sits in the middle of the park, a flat green in front providing seating for an audience (Figure 4-8).

Figure 4-8. A juxtaposition of the actual park (top) and as built by participants (bottom).

The pedestrian bridge looms over the park, making travel to the other side of the river easily accessible. Next to the Pedestrian Bridge is the Bridge Building, a small structure often used for celebratory events because of its proximity to the riverfront, large windows, and rooftop view. An elevator stands along the southern side of the building, making the Pedestrian Bridge easily accessible from the park.

The group spent its first two weeks together working on the riverfront. Artie and Ricky carved out the area for the park; Eddy and Tom built the bridge; Doug developed the elevator

leading up to the bridge. Martin, however, planned, built, and designed the jewel of the park:

The Bridge Building (Figure 4-9).

Figure 4-9. A juxtaposition of the actual Bridge Building and Martin's re-vision of it.

Because of the persistence of the virtual world, and the (a)synchronous nature of our activity,

new builds emerged while some participants were not physically present. Notably, the

elevator, for instance, came about while Martin was not in attendance. Upon his return to the

group, and the server, the following week, Martin, made his way toward the park, saying, "I

had an idea of what I could build today. I was thinking about building the building across from

the elevator. The Bridge Building."

Later that day, while Martin was working on the building, Tom entered the room/game, and remembered: "Last time I was working on lights." To effectively work on lights, he needed the gaming environment to be dark, so he used the in-game command "/time set 40000" to change the game mode from day to night. All commands were visible for all players, so this command showed up on Martin's screen as well (Figure 4-10).
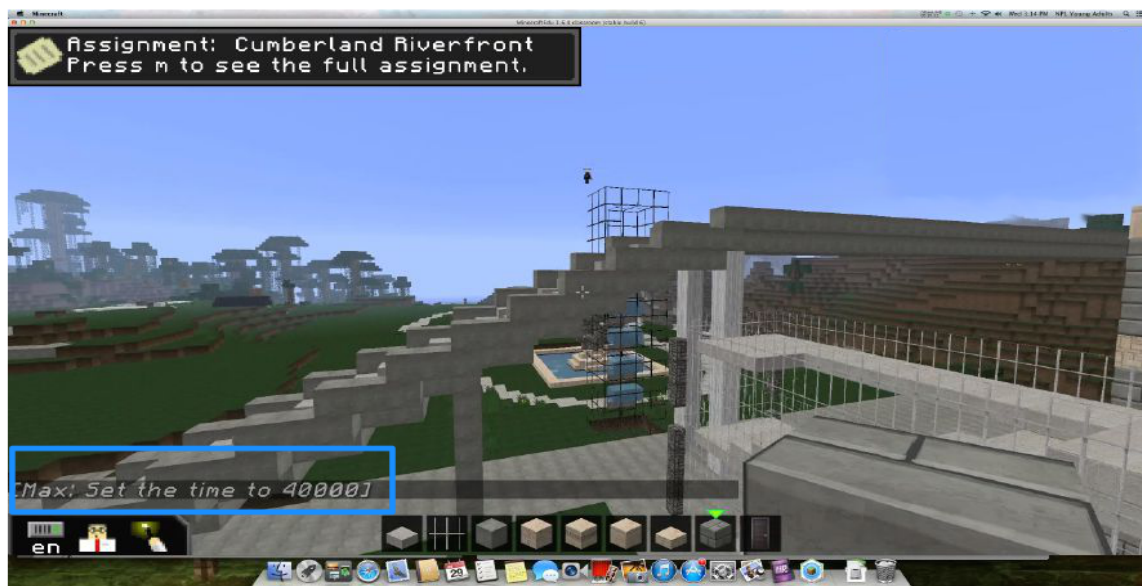
Figure 4-10. Tom sets the time; a notification appears on Martin's screen.

This emphasis on lighting triggered something in Martin—it affected him—and pulled him away from his work on the Bridge Building. "Oh, I just had a brand new idea," he said immediately. He then readied himself to develop a lighting system for the elevator that would move a current of energy up the elevator one block at a time, signifying the elevator moving upward. I identity Martin's sudden shift from the Bridge Building to the lighting system as a felt focal moment. From here, I analyze what I will describe as the mutability of this intricate lighting system which he will make—and alter—multiple times throughout the duration of the

program. Importantly, that initial affective encounter stretched across space (in-game locations)

and time (three weeks) each instance in which Martin reconfigured his lighting system.

Martin's lighting system—in which he used a particular block called redstone—was

intricate. As he initially described it:

> I had the idea for a redstone schematic that would be lights and the redstone would
> move up the light strand, because it would have a red stone torch on top of each
> redstone lamp. The redstone torch below that, on the lamp, on the next lamp down,
> would activate the one above it, turning it off, so you would kind of have this endless
> stream of lights moving up the elevator, and I was going to check like the first thing that
> I need to do is kinda build a redstone clock…

Briefly, redstone—a specific block in *Minecraft*, just like cobblestone or sandstone—is the only

block that can carry the equivalent of an electric charge. When redstone blocks are linked with

redstone dust and a redstone torch that electric charge can travel (Figure 4-11).

 Figure 4-11. A crude redstone demonstration.

Martin's redstone "schematic" was much more elaborate (Note: I will continue to use the term

schematic to follow Martin). He employed what are called "redstone repeaters" to propel a

greater amount of energy through the system. For aesthetic purposes, he designed this

redstone schematic underground, out of sight, below the elevator (Figure 4-12).
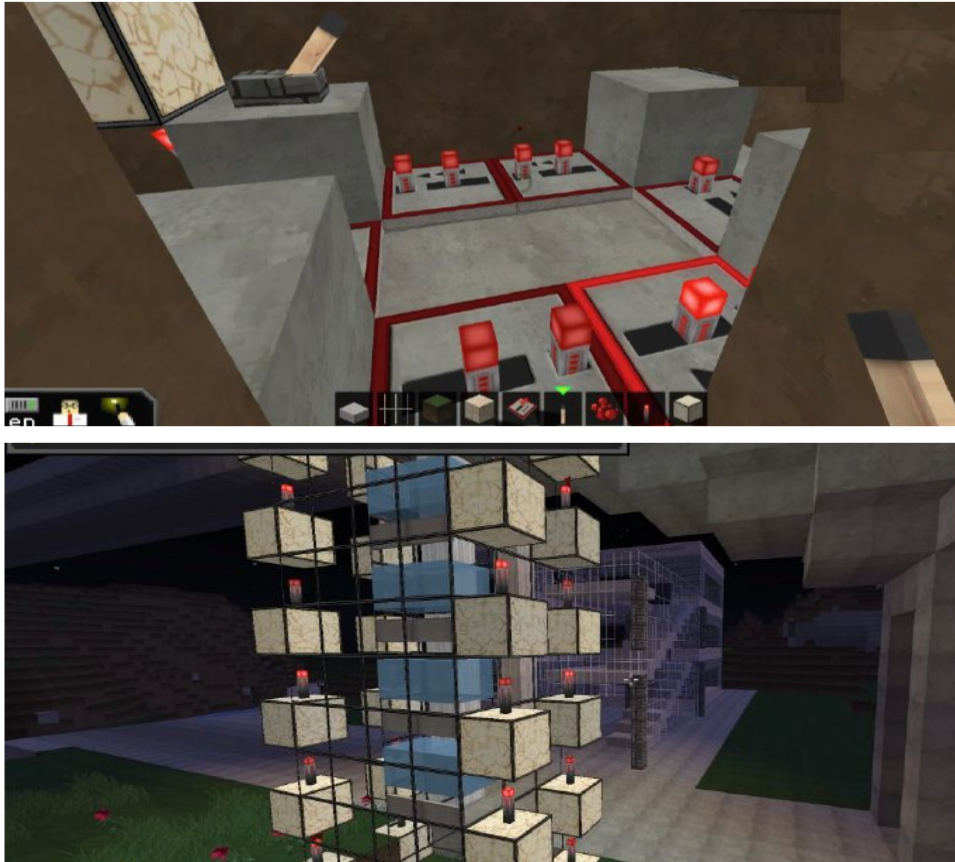
Figure 4-12. Martin's underground redstone schematic and aboveground elevator.

While Martin's expertise with redstone circuitry is worthy of deeper analysis (which I revisit

through another participant in the following chapter), I focus particularly on how he continually

adopted this redstone schematic for other purposes across space and time—the ways in which

this concept—this specific redstone schematic—moved throughout our cityscape, serving a

similar purpose, yet subtly re-arranged each time.

Martin's redstone schematic was mutable. It moved and changed form over time. Throughout the next week, Martin moved this particular schematic to two other locations. As the group continued to work on Columbia Riverfront Park, they eventually created a large stage for concerts and other public presentations. Martin recognized that the stage needed a lighting system, so he dug underground once again, planted his redstone clock and then linked it to glowstone blocks that he placed on the stage. Martin not only flexibly used his schematic in different locations, but also consistently re-created a version of it based on the underground landscape (Figure 4-13).
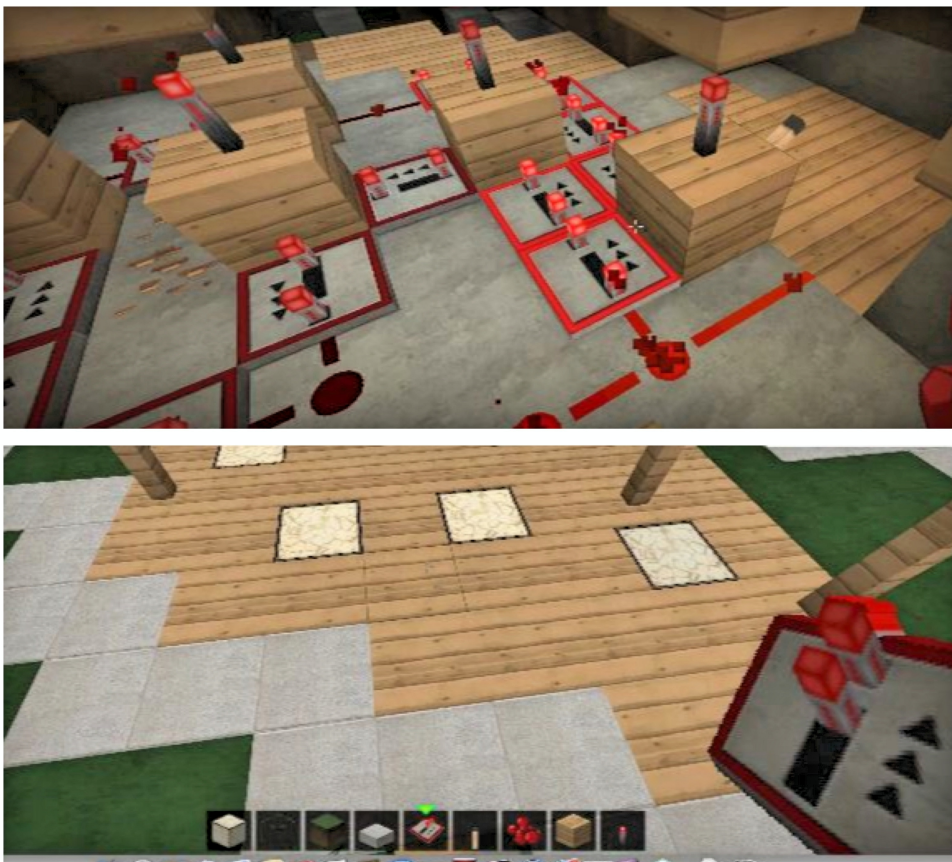
Figure 4-13. Martin's underground redstone schematic and its aboveground stage.

In another instance, Martin built a small restaurant that overlooked the Columbia River inside of the Bridge Building. Once again, he reconfigured his redstone schematic to produce a stream of lights rising upward from the base of the restaurant (Figure 4-14).
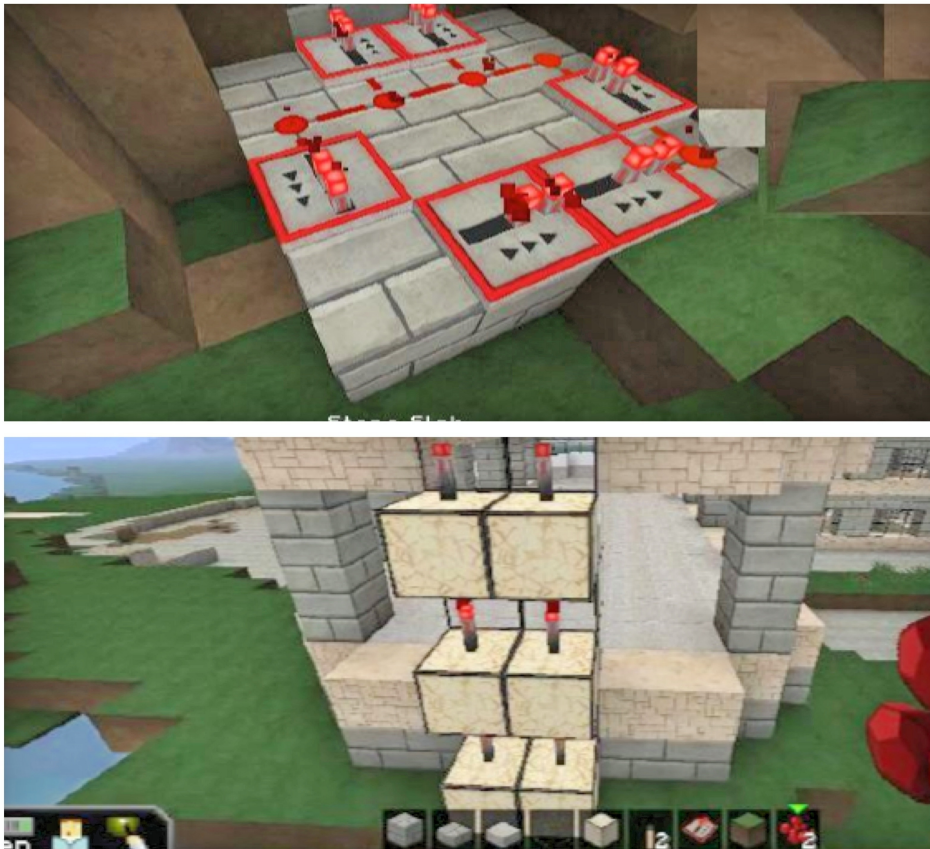
Figure 4-14. Martin's redstone schematic re-configured as exterior restaurant lighting.

Analysis: Making light with mutable mobiles. Martin's redstone schematic is a mutable mobile (de Laet & Mol, 2000). It is a fluid concept. As a mutable mobile, it not only allowed Martin to work with it in three discrete locations but it also allowed him to test out his continually burgeoning expertise each time. Martin generated learning opportunities for himself, gradually increasing his own level of difficulty, as he repeatedly encountered a new

problem set consisting of new materials within a new setting—the material configuration of the elevator was much different than that of the stage; the material configuration of the stage was much different than that of the restaurant. His interest, in this case, spread, moving across time and space through his consistent re-production of the schematic-as-idea.

Mutable mobiles, as de Laet and Mol (2000) write, are fluid. Their boundaries are vague and moving. There are "many grades and shades of working," they write. "[T]here are adaptations and variants" (p. 225). Mutable mobiles are strong because of their adaptability, flexibility, and responsiveness. Furthermore, mutable mobiles challenge what it means to be an actor, allowing that category to "include non-human, and non-rational entities" (p. 227). de Laet and Mol pursue the notion of a mutable mobile through their description of a Zimbabawean bush pump, how it not only acts as water-producing device but also as sanitation and hydraulic device. It takes on a new state depending on the actors using it, the materials it with which it combines, and the needs of a particular setting. This is not to say that the pump is "everywhere and anything," they write. Rather, its "various boundaries define a limited set of configurations" (p. 237).

Martin did not consistently re-configure his lighting schematic in a vacuum, though. That schematic existed in social milieu that blended together our MBB community with the overarching community of *Minecraft*. His lighting system lingered and provoked, it drew others towards it. When other players were nearby the elevator, for instance, Martin had the opportunity to describe the ways in which he "rigged up the elevator." That is, Martin's interest not only emerged through the mutability of idea of the schematic in-and-of-itself, it also emerged—or even took on a new form—when he could share that idea with others.

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Showcasing his work *in situ* to other participants also enabled Martin to reflect upon and question the design decisions that he had made. When describing to Ricky how the elevator-lights worked, for example, Martin began to re-think is design: "Now that I think about it, I should have made the lights actually part of the elevator. Just like destroy the corners and then move them, like one block in," he told Ricky.

Martin's redstone schematic, like the bush pump, had its own limited set of configurations. It was meant to produce light—yet Martin was able to re-arrange how the schematic emitted light each time based on both the underground layout upon which he built the schematic, and the above ground layout of the lighting system. Thus, not only did the non-human schematic move Martin towards additional learning opportunities, but those learning opportunities were also dependent upon other non-human components of the game (e.g. the ground, the elevator, the stage, the restaurant).

In the following section, I build from this focus on mutability to delve further into the role of the non-human in activity, particularly how it lingers and lures. Specifically, I focus on the ways in which non-human artifacts—oftentimes left in the wake of activity—acted as affective lures for participants, especially as entry-points for newcomers to the group. I call this affective residue.

Movement 3: Residue

Throughout the duration of the MBB, participants often encountered vestigial artifacts, or markings, resulting from the activity of other participants. As a result, participants would pick up where others left off, finding inspiration in existing builds, in order to take part in production-centered activities. Field notes from Day 15, for instance, describe the ways in

which two new participants—Neil and Lito—were drawn to the affective residue left by others

the previous week:

> Today, two new guys showed up, Neil and Lito. After a few minutes of poking around
> the downtown area, Tito asked: "Do you have Lawson?" "Yeah," I replied, "Some guys
> just started building it last week." "Cool, I'll work there then," he said. Both Neil and
> Lito attend Lawson, a nearby magnet school. Both guys flew their avatars over to
> Lawson with Lito critiquing the current build, saying Lawson doesn't have those, like,
> castle   things on the sides—they're more in the center." Unable to deal with this issue,
> he got to work laying down the floor inside the building. I flew over and helped him
> out.

In this movement, I further elaborate on the productive detritus from previous activity that

enticed others toward it—what I call affective residue. Affective residue denotes existing

products—builds, structures, or objects in this setting—which first lured participants toward

them and then engendered learning opportunities for those participants. I pay particular

attention to the ways in which affective residue moved participants toward in-bound learning

trajectories (Nasir & Cooks, 2009) through Neil and Lito's initial interest-powered continuation

of Lawson.

In describing affective residue, I first detail the initial production of Lawson by Ricky,

Jeremy, and Doug. Then, I jump forward in time two weeks to the point in which Neil and Lito

were lured in by the remnants of Lawson. In this sense, rather than "follow the thing"—

Lawson— as it moves through space, I follow the thing as it moves (or, rather, remains still)

through time.

Leaving It For Others: The Initial Stages of Lawson

About two weeks into the program, we began working as a group along a major

thoroughfare in downtown Metro. Because Lawson was located at the western edge of this

area—and because many of the participants attended the school—they decided to build it together. Doug, Ricky and Artie began discussing an approach: Who should build the stairs? What about the columns out front? The process was slow as we tried to negotiate the height and width of the building. Ricky pulled up images of Lawson from Google Images, using them as models to build the façade of the school. What ensued was a complex adjudication that cut across digital, physical, and imagined spaces. In short, Ricky is trying to build a frame for the school, counting off the embrasures at the top of the building. Jeremy, who does not attend Lawson, begins to add "half slabs" to Ricky's work—which Ricky calls out for not being accurate. Doug, who has been monitoring development of the school, inserts himself into the conversation, letting everyone know that the height of the building is, in fact, wrong. I illustrate this process in comic form to illustrate how residue initially becomes embedded in-game (Figure[s] 4-15):
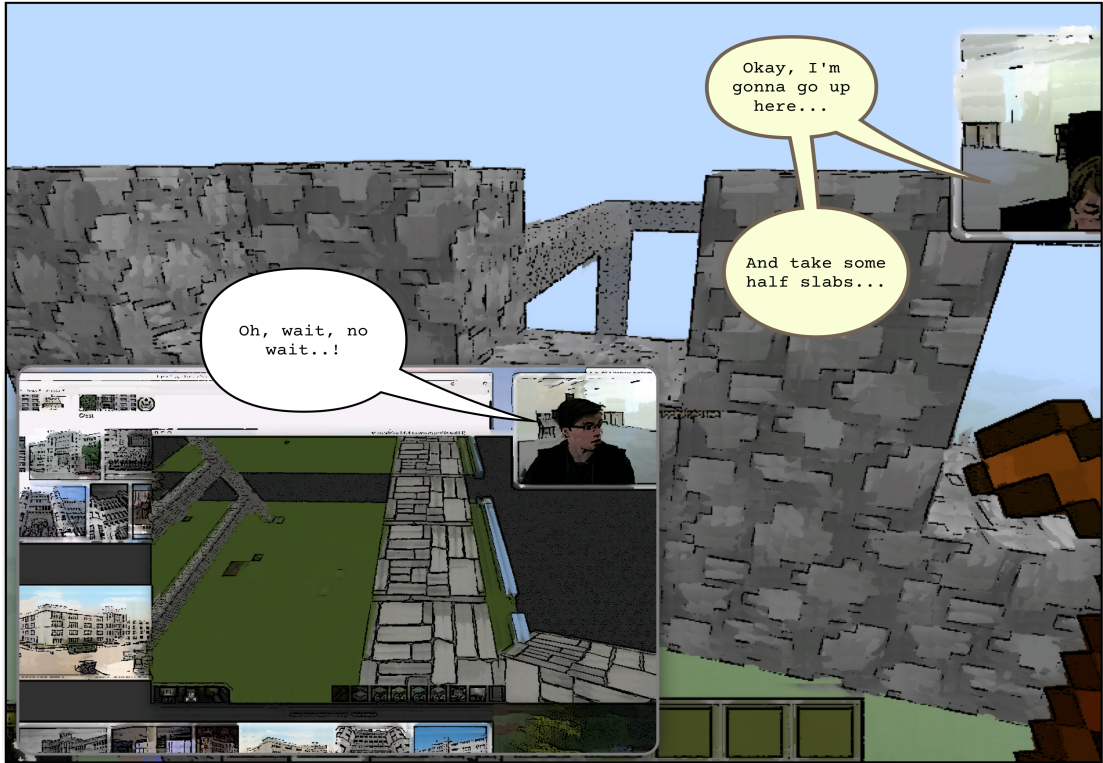
Figure(s) 4-15. Comic representation of participants building Lawson.

The group did not make much headway. About five minutes after this exchange, three of them

had to leave for the day. Because of circumstances related to their respective after school

schedules, they were unable to return to the group to complete the school. Thus, Lawson

remained unfinished, a rough frame and the foundation for two columns the only identifiable

features (Figure 4-13).
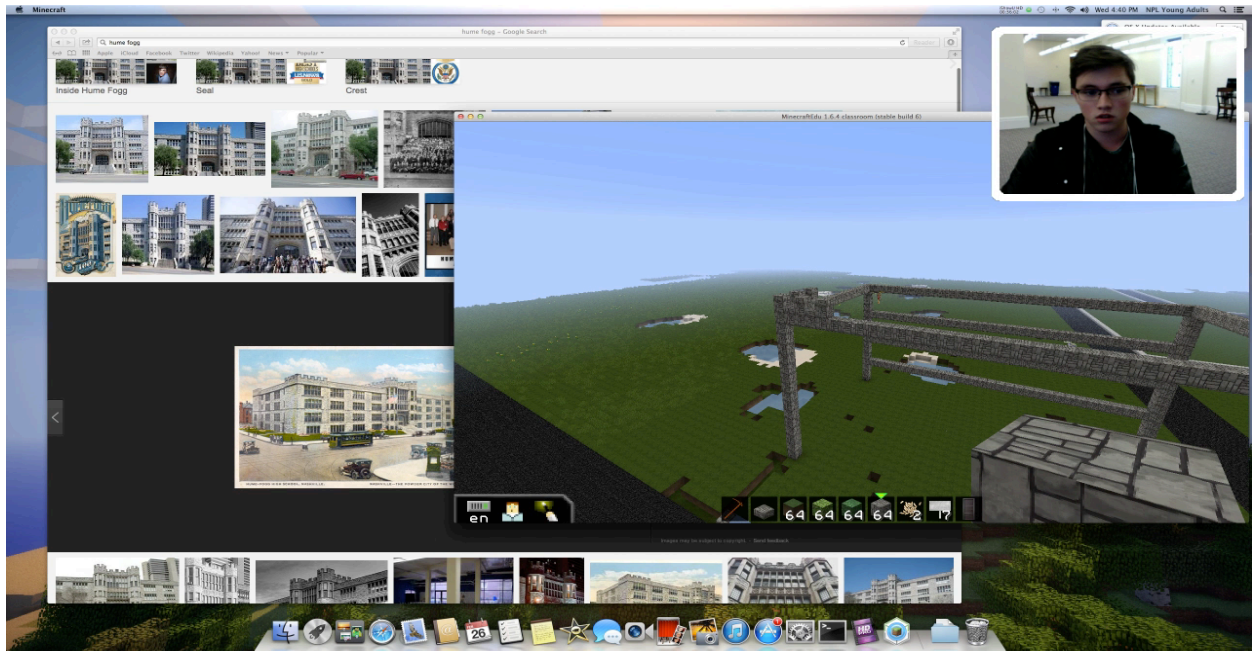
Figure 4-16. A screenshot from Ricky's computer of Lawson before he and others departed.

Picking Up the Pieces: Lawson as Entry Point for Newcomers

Just over two weeks later, Neil and Lito joined the group for the first time. They each flew their avatars around the main strip of downtown, checking out buildings, but unsure of what to do. I return now to Lito's first meeting with Lawson from my fieldnotes to describe the school as form of affective residue:

> After a few minutes of poking around the downtown area, Lito asked:
> "Do you have Lawson?" "Yeah," I replied, "Some guys just started building it last week." "Cool, I'll work there then," he said. Both Neil and Lito attend Lawson, a nearby magnet school. Both guys flew their avatars over to Lawson, with Lito critiquing the current build, saying Lawson doesn't have those, like, castle things on the sides—they're more in the center" (Figure 4-17).
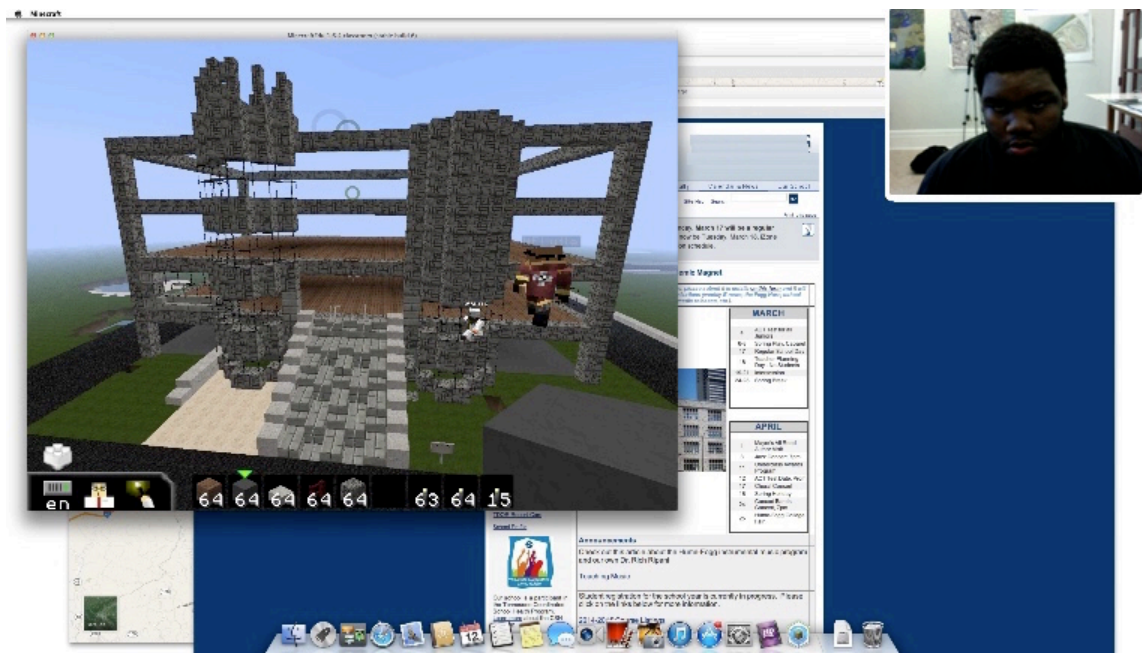
Figure 4-17. Malik watches on as Neil and Lito add on to Lawson.

Lito was searching for some way to contribute on his first day. His excitement to take part in this program—and this new opportunity provided by the library—was evident. But, he came on his own, curious about this *Minecraft* program people were talking about in the teen center. Without any real peer docent, however, he was unsure of how he could contribute: What could he build? What was possible? What might be frowned upon by regular participants? Lito was pushed toward the program by his enthusiasm; an interest in *Minecraft* brought him there. Lawson, however, pulled him in. It provided him with an in-bound learning trajectory *that already existed*. That is, the persistence of the virtual space pre-loaded the world with peer-driven possibilities for Lito. These possibilities, in turn, mobilized his participation. And he took advantage of this opportunity, quickly offering design critiques to Neil, stating: "Lawson doesn't have those, like castle things on the sides—they're more in the center." From there, he

got to work, re-shaping those "castle things" to his liking, and finishing off the floors for each

level in the school.

       Analysis: Persistent artifacts as affective lures. Affects push and pull. They

catalyze mobilities. Lito, as noted, was *pushed* toward the program by initial interests related to

Minecraft, to an overarching peer culture. Once in the program, however, that interest

stagnated: Lito did not know what to do, how to contribute. The skeleton remains of Lawson,

however, *pulled* him in. They acted as an affective lure, giving Lito a means to effectively

enter—and contribute to—the community instantly. Lawson was saturated with affective

residue, traces of participation that previous participants had left behind—buildings, bridges,

homes.

      It is important to note, however, that Lito did not move towards those buildings,

bridges, or homes. He was lured toward the school, likely because of his familiarity with it (the

fact that is was multi-spatial, existing in both the physical and digital world), but also because it

was incorrect: Lawson didn't "have those, like castle things on the sides." Lawson, as both a

real virtual and affectively-charged edifice, put Lito on an in-bound trajectory of participation.

He was already an expert to a certain degree: He regularly moved toward, through, and from

(the real, physical) Lawson each day. While educational researchers frequently describe, and

encourage, the funds of knowledge (Moll, Amanti, Neff, & Gonzalez, 1992) that teachers can

activate in formal learning settings, researchers have placed less emphasis on embodied ways-

of-being that youth tap into on their own. That is, how do learners, move, for example, at

home? How might that movement contrast with how they move outside of school? (Ehret &

Hollett, 2013). Here, I argue, that Lito does not simply make a "strategic connection" (Moll et

al., 1992, p. 132) to those embodied experiences, but an emergent connection to them: his

own history of moving through the city of Metro, of arriving and departing from Lawson,

intersected with his participation in MBB at *this time* (his first day at MBB) and *this space* (sitting

down with the group for the first time) with *this thing* (Lawson High). Because of the coming

together of these elements—time, space, thing—Lito rapidly found a productive line of

participation for himself, one in which he was particularly interested.

     Interest in digital media spaces—especially social networks—waxes and wanes.

Facebook, for instance is structured in such a way that the "new"—comments, pictures, links—

continually overtakes the old. As a result, interest spikes and flat-lines. My emphasis on residue

stems from research within these venues, particularly in the social networking "traces left on

projects or profiles such as 'love-its,' friend requests, 'favorites,' 'likes' and even gifts …that

show that users have viewed and appreciate projects" (Grimes & Fields, 2012). Grimes and

Fields call this "networking residue"—all of the chatter and discussion that emerges on social

networking platforms around a given topic. Oftentimes, that chatter, however, dies out rapidly,

either buried by other posts, or replaced by new, more pressing topics (see Shapiro & Hall,

2015). Lee (2014) provides a striking visual of this gradual affective deterioration through the

rise and fall of Twitter-based discussion surrounding the Ebola virus in the fall of 2014 (Figure

4-18).

Ebola - New headlines cause spikes in tweet activity

Twitter, Jul 28 through Sep 19, 2014: #Ebola, #EbolaOutbreak, #EbolaVirus, #EbolaWatch
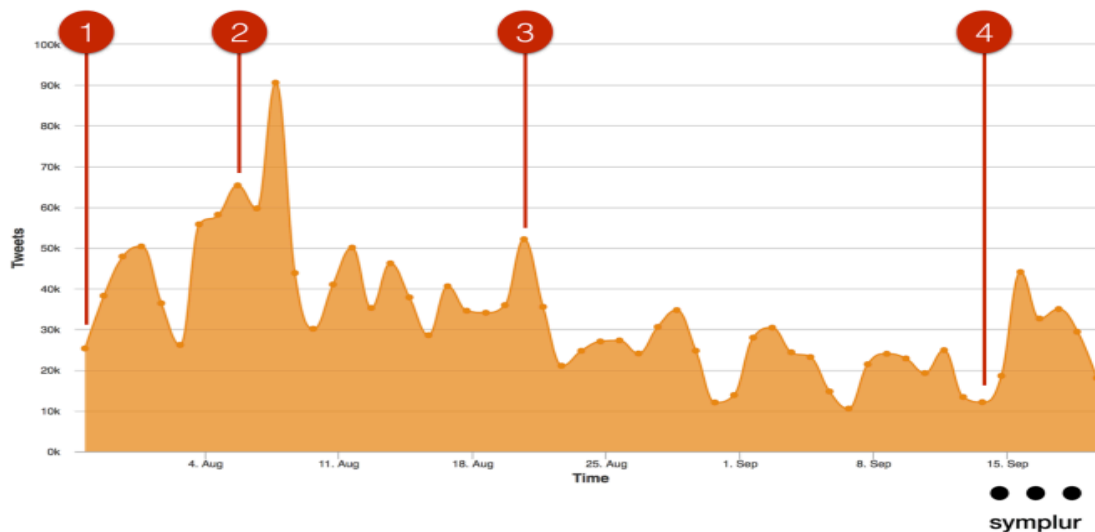
Figure 4-18. Ebola-related tweets from, July 28th through September, 19, 2014. Accessed from:

http://goo.gl/97zayu

Unlike social media networks, in which that residue is buried, only accessible through variations

of deep, digital scraping (Shapiro & Hall, 2015), virtual worlds—and the objects and artifacts

within—are persistent. As opposed to the affective spikes evident in social networking, virtual

worlds produce affects that are potentially sustainable: Residue is accessible rather than

submerged. This residue, then, has the potential to affect—and re-affect—participants like Lito.

While this is not an apology for virtual worlds, I am struck by the ways in which affects resonate

from artifacts and objects, luring learners toward them, moving learners both physically and

emotionally. Unlike a school classroom, which might be called a site of erasure (e.g. whiteboard

wiped clean after each period, markers re-writing the same notes, over previous etchings, each

class period), the server that MBB operated on was a site of duration. Previous artifacts

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persisted, like Lawson, their residue flickering with affect, drawing potential participants towards possible learning trajectories.

Summary

In this section, I have addressed my first set of research questions: How are learners affected, or moved, toward learning opportunities? And how do interests move and circulate in service of learning? Analytically, I have targeted felt focal moments as sparks of interest. From there, I moved forwards and backwards through time and space, tracing the contours of interest development. Learners were affected toward learning opportunities in variegated ways: First, through passengering, or interest that moved and circulated through affective intensities resonating between participants; second, through mutability, or interest that moved and circulated through affective intensities resonating between participants and concepts; and third, through residue; or interests that moved and circulated through affective intensities resonating between participants and peer-created objects embedded in-game.

I answered these research questions in a series of movements. In doing so, I recognize that the dissertation genre in which I am writing does not typically support brief snapshots. In fact, each of these movements could be extended into its own analytical chapter. That predicament, however, is precisely what makes working with topological, or relational, theories of place so frustrating—and so powerful. Lines, per Ingold, or stories, per Massey, are always moving though place, knotting up, or coalescing temporarily. But other lines, and stories, remain invisible, dismissed, forgotten. In this chapter, I have specifically targeted instances in which participants were moved, lured, toward potential learning opportunities, with an eye

(and body) toward initial sparks of interest. And I have demonstrated that these instances—and intensities—are not always individually, or even human, driven.

Of course, there were many other interests operating throughout MBB—from *Minecraft*, to the challenge of building Metro, to the opportunity to collaborate with friends at the library after school. All of these are other lines moving and circulating throughout this program, components of the meshwork. Still, this begs the question, and I return to Massey's query: "…if everything is moving, where is here?" Here, I argue, is made by participants through place-making, which I revisit in my final discussion—chapter seven—to bring together the ensuing analytical chapters.

CHAPTER FIVE

TOPOGRAPHIES OF LEARNING: AMPLIFICATION, PROPAGATION, OSCILLATION

Introduction

In the previous chapter, I was particularly attuned to affectively-charged moments that signaled initial sparks of interest for participants. I traced the relationship between affect, mobility, and interest in three movements, emphasizing affective reverberations between peers, affective reverberations between participants and mutable ideas, and affective reverberations between participants and peer-created objects. In this chapter, I shift my analytical attention toward the topography of interest-powered learning. I alluded to the topography of participation in the previous chapter, particularly through my description of the affective flow—rising and falling—between Martin and Jeremy. I use the term topography here to denote the relief, or the texture, of participation within MBB. Through topography, I hope to both "express and enliven," the ways in which participants—as a group—come together, only to pull apart, following their own lines of activity. Topography, I argue, can attune the researcher's gaze—and body—to the contours, the relationality of activity within a given setting.

Moreover, rather than isolating static instances of "academically-oriented" participation (Ito et al., 2013), I trace the relief of activity within this setting—following its contours—to illuminate when, how, and through what configurations, learning opportunities arise. To do so, I refine analytical approaches to movement and mobility through an explicit emphasis on

rhythm. Thus, by focusing my analysis focus on activity surrounding the development of one artifact in MBB—a transit station—I contribute three ways of moving alongside the rhythms of participation: amplification, propagation and oscillation. These three approaches to rhythm help me address my second research question: What is the topography of learning within an informal, media-rich setting, and what vocabulary can describe the ways in which it takes form?

"Check-Box" Learning Within and Across Informal Settings

Research within informal, media-rich settings has, to date, focused primarily on individual trajectories—how to track and map youth learning, participation, or identity development, over time, checking boxes for what learners did, like blogging of playing a game, or with whom they interacted (Barron, 2013; Dixie, Ching, Santo, Hoadley & Peppler, 2014). And this overt emphasis on the individual is justified given that a tell-tail sign of learning within informal settings stems results from learners' participation in an activity "for its own sake, often engaging in it intensely of their own accord and remaining committed to it of their own accord" (Lemke et al., 2015, p. 3). While this research certainly emerges from corpuses of data that include collaborative learning engagements, it does not account for the dynamic experience of learning for youth within—and beyond—these settings. That is, this research for does not trace the ways in which learning moves and fluctuates, ebbs and flows; how it rises in intensity, whether individually, with a collaborator, or among an entire group. Barron's biography of one learner, for instance, details Luis' developmental pathways as a producer of stop-animation films over time, noting that he played "reading and math games" at school from the ages of eight to nine and played computer games from home during that same span.

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Others have adopted similar ways of documenting learning across space-time. Nacu and Pinkard's (2012) portrayal of one youth's activity at YouMedia, for instance, illustrates her development of new media skills—primarily photography—over a two-year duration as relatively static points (Figure 5-2). Both cases exhibit signs of techno-determinism, focusing primarily on tools employed, like "computer games" (Barron, 2013) or "photo" (Nacu & Pinkard, 2013), thereby disconnecting those forms of participation from the socio-emotional milieu within which youth find themselves in informal, media-rich settings
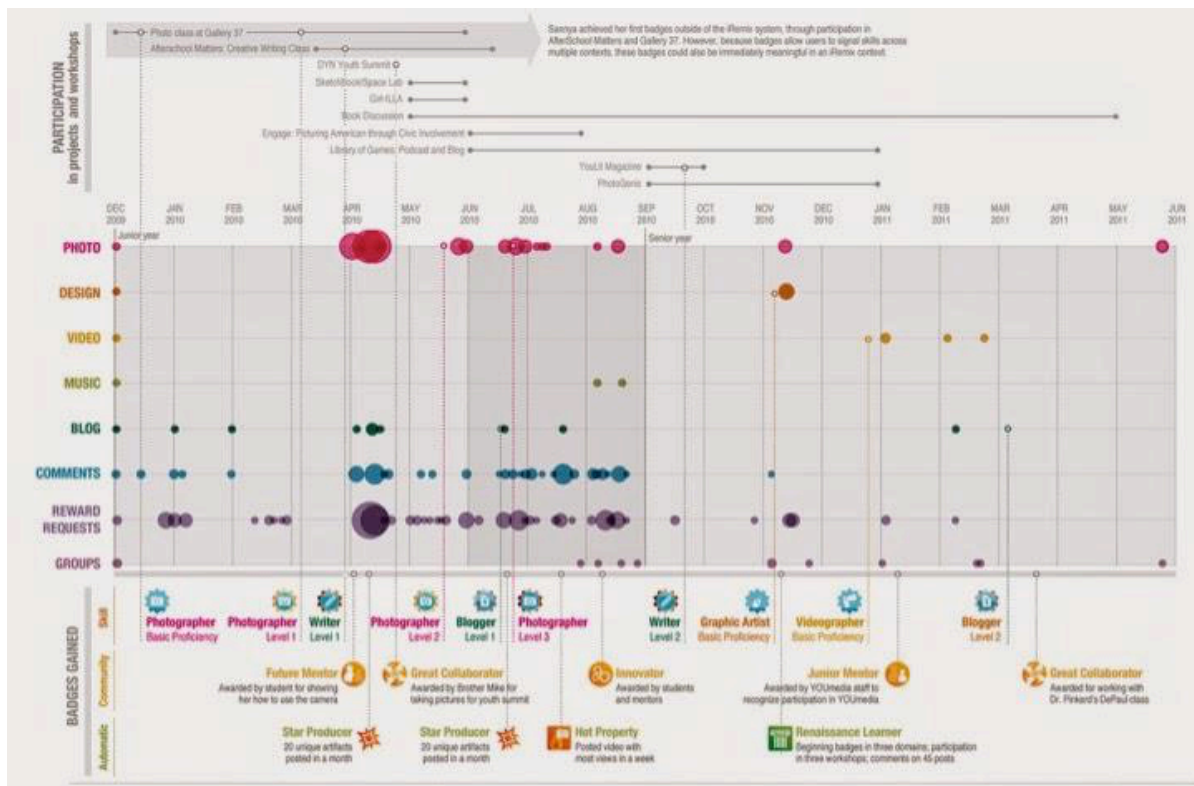
Figure 5-1. Activity at YouMedia over time (Nacu & Pinkard, 2012).

More recently, however, Lemke and colleagues (2015) have called attention to this socio-emotional milieu. They conclude that "the scope of valued learning outcomes for informal learning activities should include social, emotional, and developmental outcomes as well as content knowledge and should include learning by groups and whole projects as well as

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by individuals" (p. 89). Rather than individual snapshots, Lemke and colleagues cite the need

to follow learning as it scales across individuals, groups, and projects. They do so by breaking

down their overarching outcomes into two categories: the first dedicated to social-emotional-

identity development and the second dedicated to the cognitive-academic development, or

what they call "know-how." Each category of analysis, then, contains its own outcomes for the

project/community, group, and individual. Table 5-1 depicts this matrix:

Outcomes	Project/ Community	Group	Individual
Social-emotional-identity development	Developing social-emotional climate; community or project ethos, goals, and local culture, system of roles and niches	Mutual support, challenge, inspiration; joint enjoyment and engagement	Comfort and sense of agency in domain; engagement; long-term interest and persistence versus obstacles and frustration.
Cognitive-academic	Developing strategies for organizing and distributing know-how; work practices and division of labor	Shared, distributed know-how; collective; intelligence; dialogue and cooperation skills; explanation skills	Knowing to how to go forward in the domain; knowing how to mobilize and integrate know-how across domains.

Table 5-1: The outcomes-by-levels model for documentation and assessment of informal

learning in media-rich environments.

Yet, despite the multi-scalar (e.g. project/community, group, individual) approach to

documenting and assessing learning in informal settings put forth by Lemke and colleagues, I

wonder: To what degree do these different scales support, or collide with, one another? To

what degree do they co-exist, albeit perhaps at different intensities for different individuals?

How are individuals pulled in to the group, only to pull away on their own accord? How do elements of one scale, spark, or ignite, another? What if, as opposed to plotting learning as a series, or pathway, of incremental practices over time, we visualized it as musical score, with varying intensities, combinations, and connections (Figure 5-3)? Steiner's artistic representation of "Solitude," for instance, disrupts traditional, Western musical notation systems by depicting the "texture" of various sounds over time—the rising and falling of intensities, near-silences, rapid fluctuations. Steiner's work, I argue, depicts a musical topography.
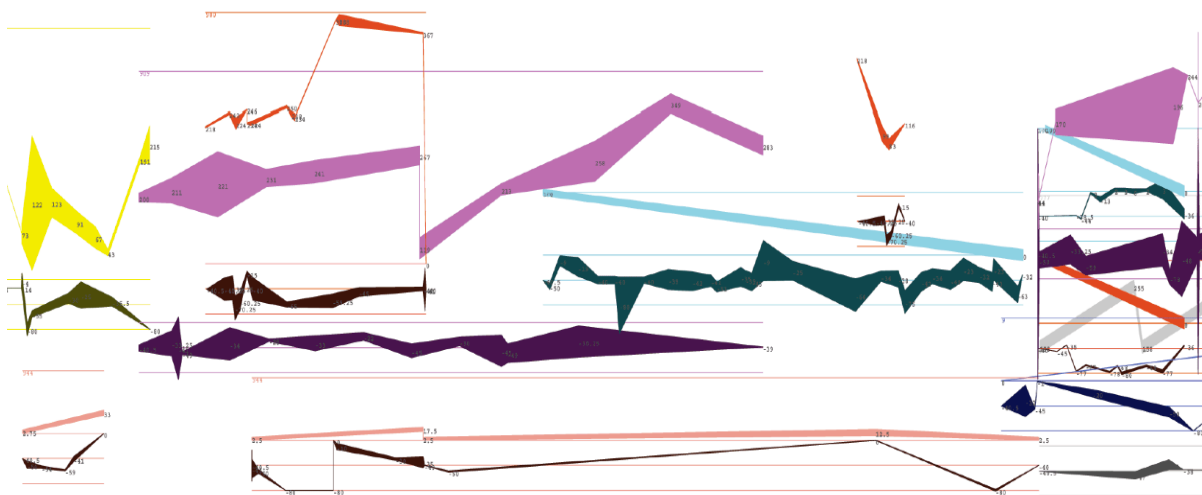
Figure 5-2. "Solitude," a musical score depiction by Hans-Christian Steiner.

With Steiner's depiction of "Solitude" as an influence, this chapter questions: What is the topography of learning within an informal, media-rich setting, and what vocabulary can describe the ways in which it takes form?

Theoretical Refinement

In describing my theoretical orientation, I want to bring back key points from my initial focus on place, mobility, and affect. In terms of place I again call attention to what is moving within a given setting. For example, Leander and colleagues (2010) allude to Lefebvre's (1991)

description of a house to initially describe their take on learning-in-place. Rather than

contained, the house is "permeated from every direction by streams of energy which run in

and out of it by every imaginable route: water, gas, electricity, telephone lines…and so on" (p.

92-93). This house is a "complex of mobilities," an "active body" (Leander et al., 2010, p. 332).

Through this emphasis on the mobilities coursing through the house, Leander and colleagues

pivot toward classrooms, questioning what happens when researchers "destroy the

appearance of solidity" and instead see the movements, the flows, operating within and

beyond:

> What types of materials (books, clay, earthworms, mounds of trash), energies
> (electricity, gas), resources (federal money, lottery surplus), information flows
> (Channel One, Internet, parent phone calls) permeate the classroom from every
> direction? (p.   333)

By following materials, energies, and information flows, the classroom becomes less as a

container and more nexus of relations: a (relational) place. Such a vision of place resonates

with Ingold's (2011) description of the meshwork, a "web of flows," he writes, that come

through the "intertwined trails along which people carry on their lives" (p. 149). Place—the

meshwork— is produced through the "binding together of lines, not in the connecting of

points" (p. 152).

But not everything moves in the same way. The world is not awash in fluidities (Marston,

2005, p. 423). As Marston and colleagues note, scholarship has confronted its own static,

structuralist calculus, by replacing it with the language of flows and fluidity. According to this

approach, they note,

> the material world is subsumed under the concepts of movement and mobility,
> replacing old notions of fixity and categorization with absolute deterritorialization and

openness. While we do not find ourselves at odds with the possibilities of flow thinking per se, we are troubled by what we see as liberalist trajectories (absolute freedom of movement) driving such approaches, particularly when these develop alongside large-scale imaginaries such as the global and the transnational. (p. 425)

An overt emphasis on fluidity fetishizes movement in a way that makes invisible its blockages, coagulations, and assemblages (p. 425). To alleviate this fetishization, scholarship on place and affect has begun to provide a language that recognizes the dynamics of movement. In other words, rather than considering the lines that are moving through a given setting, scholars have turned to rhythm to describe the topography of that setting, tracing, feeling and moving alongside its contours (Figure 5-3).

Rhythm brings together place, mobility, and affect, while also providing a vocabulary to describe the textures of a given setting. Everywhere there is an interaction "between a place, a time, and expenditure of energy," Lefebvre writes, "there is rhythm." For Deleuze rhythm is entwined with sensation. Rhythm, is "a movement 'in-place,' a spasm . . . the action of invisible forces on the body' (Deleuze, 2003, p. 41). While there is a large literature dedicated to rhythm and place, ranging from Lefebvre's influential rhythmanalysis (2004) to more recent studies in human geography (e.g. Edensor, 2008, 2010, 2012, 2013), I am drawn to Henriques' recent (2010, 2014) exploration of the vibration of affect within a given setting (i.e. a Jamaican dancehall), because of its emphasis on bodies that move and feel. Specifically, it acknowledges the dynamics of movement through bodies, including their "relationships, reciprocations, resonances, syncopations, and harmonies" (p. 58). This rhythmic variation of movement, Henriques (2010) writes, is made with a "control-release pattern, or movement and rest" (p. 77). Overall, a rhythmic take on movement consists of

the intensive variations, (meta)stabilities, and transmissions of activity that underpin and constantly – imperceptibly – reorganize the seemingly permanent substance and phenomenological qualities of material, physical, and perceptual entities. (Henriques, 2014a, p. 19)

Furthermore, this approach does not simply break rhythm down into eurhythmia or arrhythmia

(pace Edensor, 2013), for instance, but rather provides the language to describe the ways in

which bodies—both in ensemble and as individuals—move.

To trace the topography of activity within MBB, I adapt three approaches to rhythm that

describe the "kinetic expression of feeling" in activity (Henriques, 2010; Table 5-2) across three

scales: 1) the collective-group (ensemble); 2) the collective-individual; and 3) and the individual-

game. The first approach at the scale of the collective-group, amplitude and amplification,

underscores the "driving up [of] pressure gradients, temperatures and volumes, or accelerating

intensive processes" (p. 81). These intensities, however, spread from the group toward the

individual—they propagate—opening up new, affectively-charged, opportunities for

participants. Thus, following amplification, I turn to propagation. Finally, I dial down to micro-

rhythms that emerged within MBB by describing the oscillations that participants enacted

during gameplay, or the ways in which they routinely expanded and contraction activity across

embodied perspectives.

Category	Definition	Related Elements
Amplification	• Driving up pressure gradients, temperatures and volumes, or accelerating intensive processes" (2014, p. 81).	• Acceleration/Deceleration • Volume • Tempo • Intensity
Propagation	• The transmission, or spread, of intensity into new territory/region by (amplified) individual.	• Spread • Contagion • Extension • Pulsation
Oscillation	• Expansion/contraction of activity across embodied perspectives	• Cycling • Circulation • Reciprocation

Table 5-2. Guiding rhythmic elements.

Methodological Refinement

An emphasis on rhythm in this chapter necessitated a few methodological tweaks to my overarching analytical approach. Just as in the previous chapter, I continue to adopt a mobile methodology (Büscher, Urry, & Witchger, 2011), moving with participants through our real virtual space. When "walking" through my data (Eakle, 2007), however, I paid attention to forms of participation within specific refrains that were particularly saturated with affect. That is, those refrains which lured *all* participants toward them—and facilitated participation—at some point during a given session. This emphasis led me to focus more closely on the transit station, which I describe in more depth below. My interpretive coding of this data, then, was further informed by my aforementioned emphasis on rhythm. My process can best be described as identification, coding, and comparison of the guiding rhythmic elements of amplification, propagation, and oscillation (e.g. Leander & Lovvorn, 2006, and their analytical deployment of Actor Network Theory). To be clear, however, these elements are very much entwined,

operating simultaneously, although separated here for analytic purposes. This rhythmic

orientation is emergent and incomplete, by no means encompassing *all* rhythmic elements

present within a given setting, yet it is a productive heuristic for describing the topography of

learning and activity within an informal, media-rich setting.

Data and Analysis: The Topography of Activity

In this section, I analyze the topography of activity—the rhythmic ebbs, flows, bursts, and

pulsations—surrounding the development of a transit station spearheaded by Arthur. After a

brief description of the initial stages of Arthur's development of the transit station, I then turn

to the three focal characteristics of rhythm—amplification, propagation, and oscillation—as

they coursed through participants' experience developing the transit station.

The Transit Station

The most prominent build in Lutece Place was the transit station. The station was to

Lutece Place what Martin's Bridge Building was to the Columbia Riverfront: participants

gravitated toward it, finding ways to participate in various components of the system, like

setting down tracks, building the front lobby, or even test driving the cars. Arthur, however,

was the mastermind behind the whole system, having begun the transit station on his own by

appropriating components of it from a YouTube video demonstration. "There really wasn't any

kind of transportation," he said, so he "built something that the community needed." Here's

how Arthur described how the train station worked once (nearly) completed (Figure 5-3):
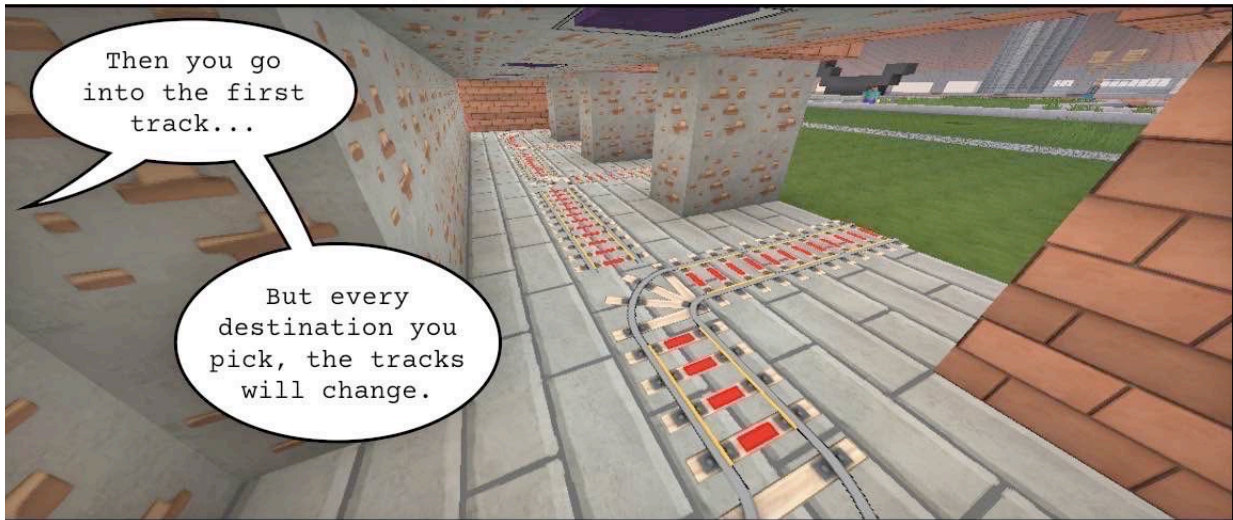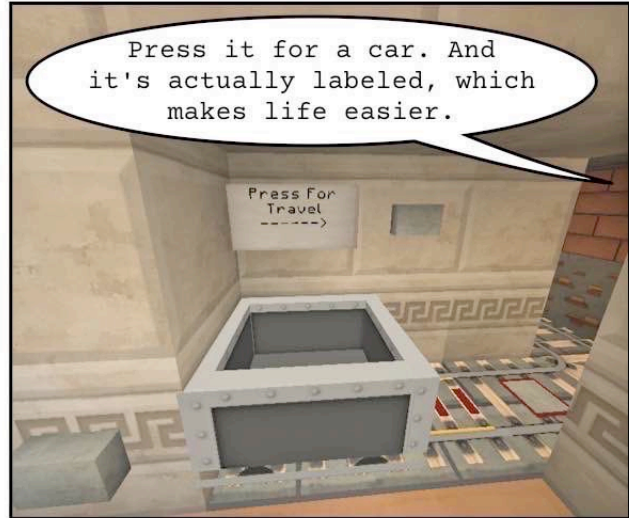
Figure 5-3. Arthur's explanation of how the transit station operates.

While the transit station was never developed to the point that tracks were connecting different neighborhoods in the city, its production became a hotbed of activity over a three-day period. The second day, on which I focus the ensuing analysis, demanded the greatest workload from participants. This day, more than the others, was the most affectively-charged. In addition to Arthur, Tom, Eddy, Neil and Jerome all took ownership of some component of the system. An energy developed across the real virtual setting as each participant, to some degree, jointly envisioned and developed the transport system alongside Arthur. I begin with an overall description of this day before focusing more explicitly on the intensities coursing throughout.

Prior to Arthur's arrival that day, all other participants worked on individual projects. Neil continued to work on an urban farm, which he had begun previously. Tom and Eddy entered about twenty minutes later. Tom had brought his personal laptop with him, hoping he could use it to modify our server through a specific package called "Feed the Beast" (FtB). Eddy tried to help Tom. Upon realizing it would be to difficult to install on each computer, Eddy re-entered our server, observing a number of buildings before flying his avatar to a Metro station entrance, not yet connected to the transit station, and entering it. Tom, however, did not want to give up and continued to research FtB, staring down at his laptop. While Tom continued to work on FtB, Jerome entered the room, flying back over to the movie theater that he had started in another session (Figure 5-4).
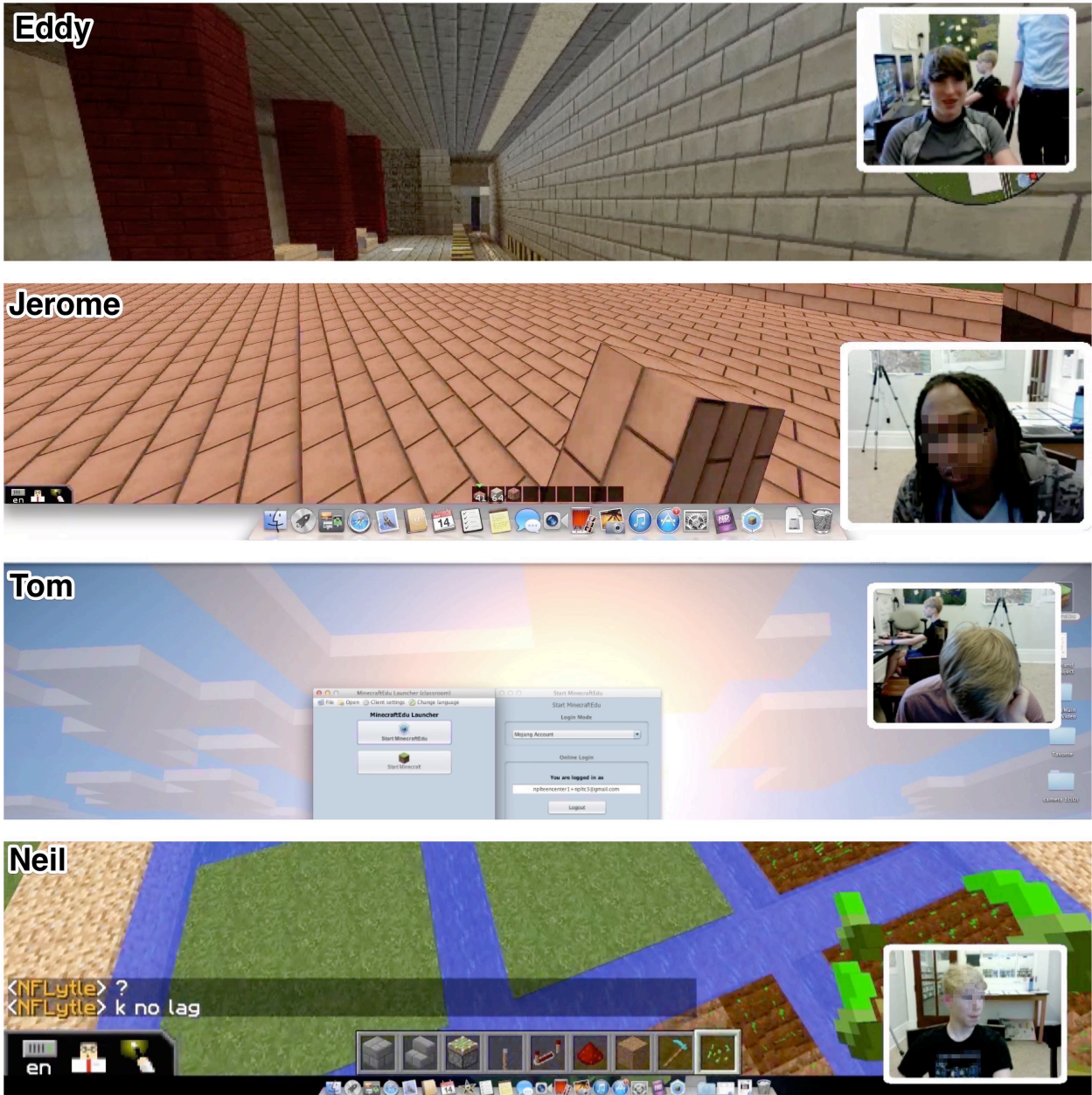
Figure 5-4. Eddy, Jerome, Tom, and Neil simultaneously, geographically distributed across game-world at 3:30 PM.

Thirty minutes after Eddy and Tom arrived, Arthur entered as well, flying his avatar back to his transit station, ready to get back to work. Upon Arthur's arrival, Eddy stood up and

walked over to him, asking if Arthur was the one who had started to build the transit system. Eddy explained to Arthur the plan that he developed to connect the transit system to the underground Metro stop that he had explored earlier. Arthur agreed to the plan, recognizing the distribution of labor. Jerome then walked over to Arthur, first asking Arthur to explain how the transit system worked, and later acting as track tester, riding the carts to troubleshoot any problems. Tom, realizing that trying to install FtB was futile, joined in as well, asking if he could build a "canopy" and signs for the waiting area. Neil flitted back and forth between his new project, a fallout shelter, and the transit system.

Arthur's arrival shifted the rhythm of other participants in the room. Analytically, I identify his arrival as a felt focal moment. Not unlike my emphasis on passengering in the previous chapter, the enthusiasm Asher and Eddy exuded as they developed the transit station was contagious, adhering to Jamal, Neil, and, later, Tom who each adopted tasks within the emerging project. This enthusiasm amplified the energy in the room. Arthur and Eddy, for instance, became highly engaged in the production of a fully functional transport system; Tom participated in bursts, focusing primarily on the entrance to the station; and Neil flew his avatar in to check in on the action, before returning to his own build (Figure 5-5). Jerome, less skilled than the others, found a way to become an active participant by testing out how well the rails actually worked by riding in a rail cart, as wells by querying Arthur about how it worked.
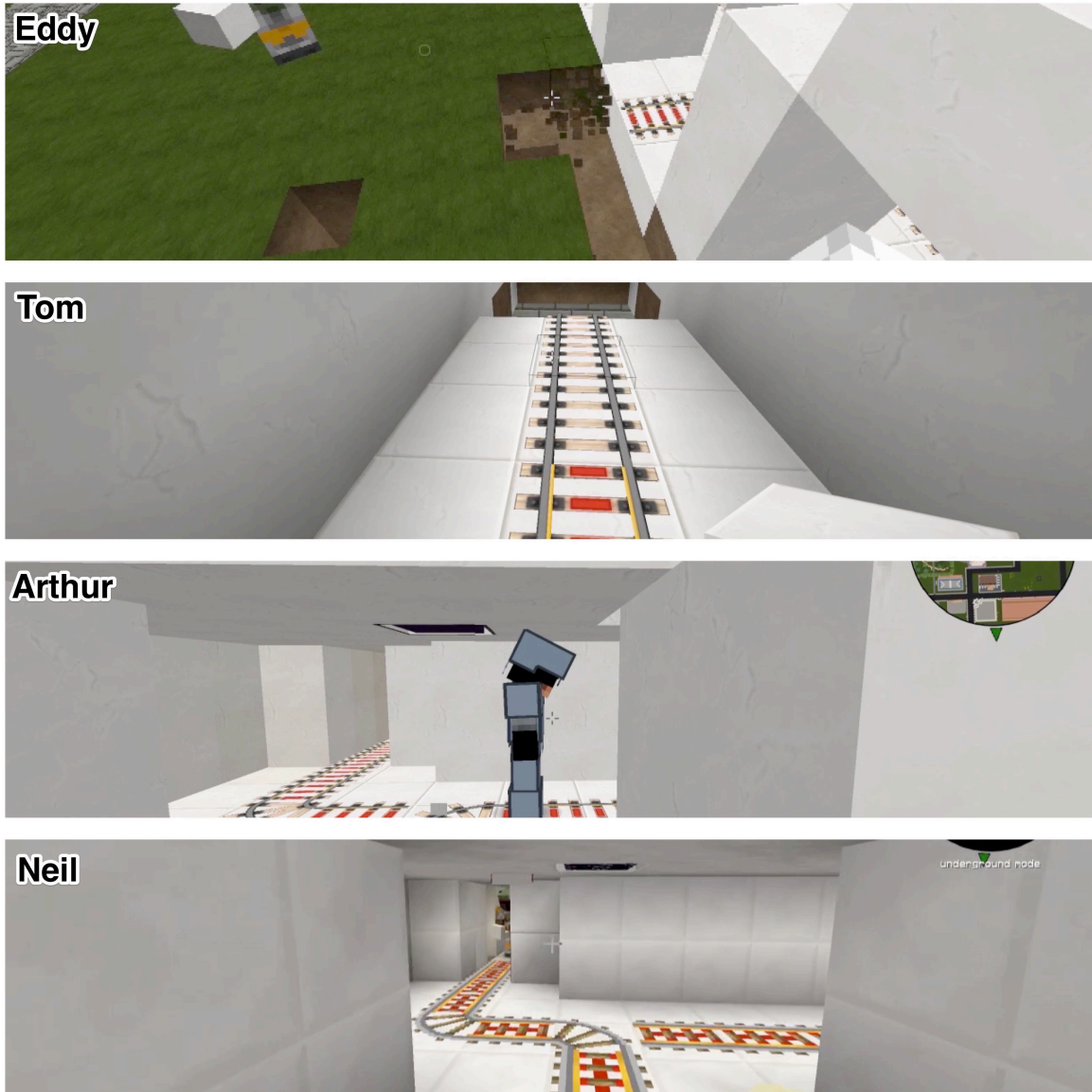
Figure 5-5. Eddy, Tom, Arthur, and Neil converge at the train station at 4:15PM. Jerome had turned off his screen-capture software after leaving briefly.

In the following, I attend to the rhythmic dynamics that reverberated throughout the production of the transit station. First, I focus on the rhythmic dynamics of the group, moving alongise the emergent *amplification* of the setting. Then, I follow one participant as he peels

off in his own related direction, following the affective *propagation* of intensity. Finally, I scale

down further, following the rhythmic *oscillations* of one participant-as-avatar.

Amplification

The amplitude of this moment rose steadily, over time, building up to Arthur's arrival

and the subsequent joint-production by the group of the transit station. As evidenced in Figure

5-4, all participants were geographically distributed throughout the game world prior to the

rise of energy which, inevitably, drew them toward the transit station and the activity

surrounding it (Figure 5-5). This rise of energy indicates amplification, the felt-sense that

reverberated among Arthur, Eddy, Jerome, Tom, and Neil, bringing them all together in the

moment. The energetic buzz surrounding the transit station necessitated multiple

participants—a crowd, so to speak. Thus, amplification, as Henriques (2014) writes, "requires

energy…These intensities are expressed across areas and volumes, as pressure, force, effort,

heat or auditory volume." In the following, I concern myself with the ways in which this

energetic force "expresse[d] itself" across area, or space, and adhered to others participants.

Acceleration toward this period of intense production was most evident in Eddy's

participation. Eddy, at first hoping to install the FtB on our server with Tom, was lured toward

the unfinished Metro stops, residue from previous unfinished activity. Curious about why the

Metro stop didn't connect to the transit station, Eddy began to consider taking the completion

of the tracks on as his personal project for the day, exploring the subterranean lair prior to

Arthur's arrival. At this point, Eddy was in the early stages of extending the track of the Metro

stop—and of realizing how difficult it would be to connect them to the existing transit station.

When Arthur arrived, though, Eddy noticed that Arthur was also working near the transit station. Because Eddy and Arthur typically did not attend NBB on the same day, Eddy asked, "Are you the one that's working on [the transit station]?" Once Arthur confirmed, Eddy told him his plan: to make the tracks connect to one another.

As a result of their collaboration, activity surrounding the connection between the Metro stop and the transit station continued to accelerate. Upon Arthur's logging in to the game, Neil, although focused on his own build, acknowledged Arthur's entrance by chatting "wb," or "welcome back" to Arthur. Jerome returned to the game as well, immediately sensed the flurry of activity surrounding the transit station and began to explore it. Arthur quickly realized there was an issue with the transit system: the carts were not moving forward with a passenger; rather, they were getting sent back to their original location (a fail-safe of sorts that Arthur had created to maintain enough carts in the system). In short, Arthur needed to install a specific rail along the track to "detect" when a passenger was present, thus propelling the cart forward. Arthur began to narrate his own progress, and the issues he was confronting, to others out loud: "THAT'S WHY", he blurted. "I figured out the problem! I think. Yup! No detector rail! I connected that for nothing. I'm so proud of myself." Jerome enticed, by Arthur's narration, jokingly responded: "I'm proud of you, too." Arthur continued to demonstrate aspects of the transit station to Jerome, hopping in to a mine cart to exhibit how the various train lines work. Upon successfully doing so, Jamal, expressing approval, said: "Like a Boss."Participants' energies continued to amplify this moment, now luring Tom in—and away—from his attention to the FtB server. As Tom engaged with the production of the station, he noticed the system

that Arthur had put in place to make carts continuously re-generate for passengers. Tom flew his avatar around the building, stating: "I gotta try it now." To understand the mechanics of the system, Tom was able to "open [it] up" to "see how it works"—literally breaking (and later replacing) the blocks so he could see the mechanism itself. As Tom checked it out, Arthur clarified what was happening, noting that the "trap door makes a quick enough pulse for one cart to come out."

While Arthur did not give himself credit, the ability to drop carts down for passengers was quite profound. Facilitated by simple circuits, a redstone torch sent an electric pulse through redstone dust (creating a current); the trapped door, then, received that current (Figure 5-6).
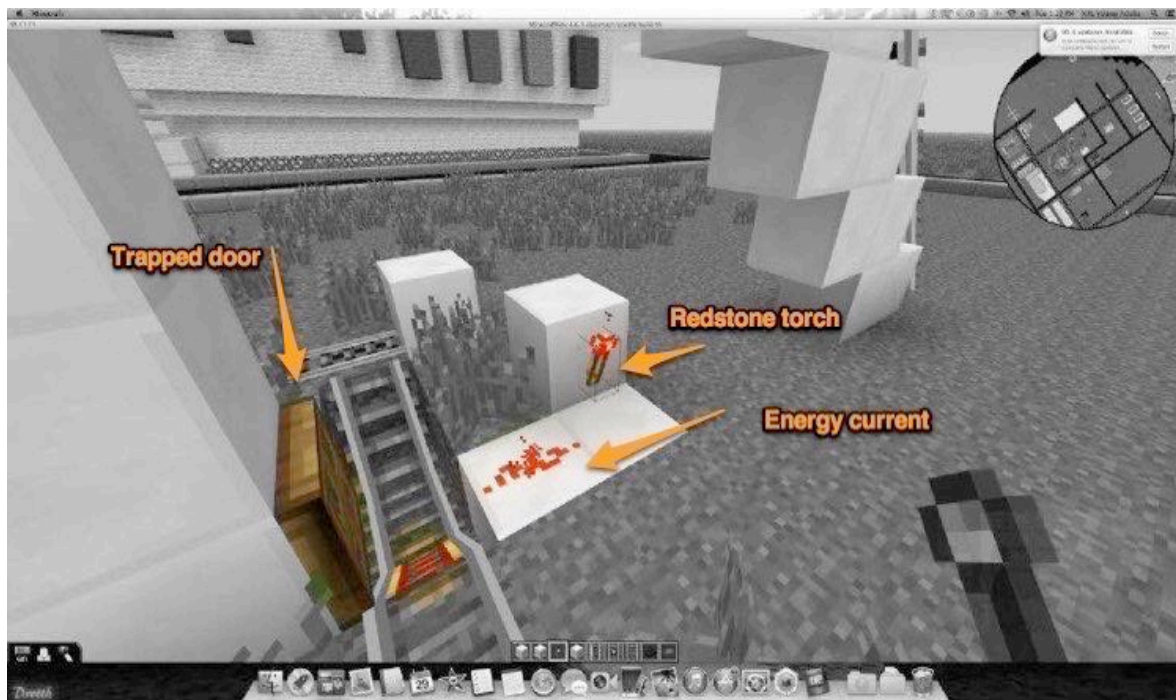
Figure 5-6. Arthur's simple circuit designed to enable carts to drop in for passengers, prior to completion.

As a result of Arthur's brief tutorial, Tom now understood how the redstone mechanism opened the trapped door and dropped a cart down to the rail. From there, Tom became heavily invested in the entrance to the station, beginning to self-generate tasks for himself that would add to the collaborative effort: "What if we put a blocker here?" he asked Arthur before moving on, and continuing "Can I build, like a canopy part, and maybe some signs on these [buttons]?" It is important to note, from this instance, that amplification not only accelerates from human-human interaction, but also through the (potential) energy residing, as evidenced in the previous chapter, in both ideas (this complex mechanism) and things (redstone-powered entities).

By this point, the pronounced amplitude related to the production of the transit station began to fall, to *decelerate*. Although Tom's attention was directed toward the development of the transit station's canopy, Arthur's work was primarily finished. Thus, Arthur flew his avatar toward another project, leaving both Tom (now working on the canopy), Eddy (continuing the connection of tracks) and Jerome (testing out the carts), to complete their own projects, all of which were off-shoots of Arthur's original creation.

It is important to note that amplification does not reside simply in the collective ensemble, or in individuals themselves. While Arthur's presence certainly catalyzed the energy surrounding the transit system, the system itself was an assemblage, consisting of—to recall elements from the previous chapter—mutable ideas, as well as residual "things." Jerome, for instance, continued to pepper Arthur with questions about how the system worked; Tom,

already aware of how it worked, began saw possibility in how he could contribute to, and

expand, Arthur's original conception.

Amplification offers a means to target, or move with, affectively-charged flows of

activity. It builds through movement: Physical bodies move toward each other, digital avatars

come together, chat messages are sent, ideas are altered (Figure 5-7).

Figure 5-7. Amplification through coming together of bodies, avatars, messages, ideas.

This movement of "information, people and things, Engström (2009) writes, "create textures that are constantly changing but not arbitrary or momentary" (p. 4). Amplification is not unique to informal, media-rich settings like MBB; it is not uncommon in any given learning setting, although certain constraints—including those related to bodily surveillance, or audible volume, for instance—modulate the amplitude of more formal settings. This is not to say that a greater amplitude is more desirable in a learning setting, either. But intensely amplified settings do open up new forms of participation for learners. Amplified settings are emergent, dependent upon accelerations and decelerations; energies rise and fall, only to ignite again elsewhere.

Moreover, through an emphasis on amplification, I have sought to move away from individual acts of engagement—or deep, extensive immersion in one topic, or activity— seeking, instead, to follow how amplification beget emergent forms of participation for numerous participants. In the following, I trace one of those emergent forms of participation through an emphasis on propagation, a means to describe the affective spread arising from the group ensemble.

Propagation

The energy that surrounded the group's joint-production of the transit station began to propagate. By propagation, I mean the transmission, or spread, of intensity from the group to the individual and his or her subsequent (pop-up) objectives. Importantly, propagation is both "individual and collective" (Henriques, 2014), p. 99): it is not stripped away from the group. Rather, propagation serves as a mean to accent individual, affectively-charged practices that occur simultaneously alongside those of the group. In this case, heterogeneous participants

work together "symbiotically," thriving not only on mutually beneficial partnerships, but also on

their mutual energy (Engestöm, 2009, p. 6). For instance, individuals, like Tom, began to offer

their own extensions to the (collective) station. Lured in by the amplified transit station, Tom

now had the opportunity to offer his own, personal contributions to what had become a joint-

production by the group.

One way in which amplified energy propagates is through, what Henriques (2014) calls

inflection. In terms of rhythmic expression, inflection denotes the ways in which a pitch, or

tone, can be altered, modulated. Specifically, when describing inflections, Henriques (2014)

calls them the "twist, the flick, the spin—that special touch of novelty that makes a style

distinctive" (p. 82). Inflection entails unique personalizations that arise from intensities.

Inflection denotes "personal style," where certain elements are "selected for additional

emphases" (Henriques, 2014, p. 82). Tom's ongoing production of the "canopy," an entrance

to the transit station, was his own extension of the intense activity surrounding the station. It

displayed his own style, his own, unique "spin" on what the station's entrance could look—and

feel—like to visitors. Although he had left to work on a new project (the propagation of energy

in a separate toward a separate objective), Arthur continued to come and check on Tom's work

over a period of forty minutes (Figure 5-8).

Figure 5-8. Arthur's checks in on Tom as Tom builds the transit station's canopy.

Over that period of time, Tom set down wood flooring and created his canopy out of a

combination various brick elements, including blocks and individual stairs to give off a roof-like

pattern. Tom's inflection resulted from the energetic rise surrounding the transit station. It

emerged naturally alongside the ongoing development of the station. That is, it did not arise in

a vacuum on its own. Tom's inflection was an expression that was both "individual and collective."

I want to hold propagation closely to amplification, to intensity. That is, while participants regularly built their own unique artifacts, propagation, as described here, is not separated from the energetic build-up resulting from amplification. Participants, like Tom, pulled apart from the group tenuously, moving in their own individual(-collective) directions yet maintaining "presence" with the group. Tom, for instance, consistently punctuated his building process with (embodied) discourse directed towards the group, both directly related to his work (e.g. asking them to check out his evolving canopy) and unrelated to it (e.g. joining in on singing songs with Jerome; although, I'd argue that singing along was just as connected). In that regard Tom entered into rhythmic cycle of individual-collective work → direct consultation → indirect "presencing" → individual-collective work.

This rhythmic movement across the real virtual space, and collective-individual contributions echoes (very) early work on networked settings, which sought to support a "social rhythm and density of interaction necessary for community building (Mynatt, Adler, Ito & O'Day, 1997). This work calls for the need for networked venues to provide workers, or even learners, with the "ability to engage in many different kinds of interaction, such as 'face-to-face' conversation, 'hallway' meetings, and greetings, or peripheral or ambient awareness of 'distant' noise or conversation" (p. 211). Moreover, the authors note importance of "livability" within networked spaces that enabled members to enter into "different but reliable social rhythms for interaction" (p. 199). In this case, however, I want to accent how Tom rhythmically cycled

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through these forms of social interaction—not because they were built into the system, but because of the propagation of that affective intensity that surrounded the transit system.

Propagation signals a felt-response to collective intensities. It enables playful, individual-collective participation: the opportunity to be a part of something, working—and feeling—alongside others incrementally. Propagation does not arise from neat, pre-planned pathways; rather, propagated participation stems from pulsations, excitable bursts, the desire to contribute to the collective, while also testing out one's own developing expertise. As such, the stakes for participants are relatively low as no individual takes completely control of the ongoing project.

Oscillation

Rhythmanalyses often seek to unearth, or feel out, the multiple rhythms, or polyrhythms, operating within a given setting. Lefebvre, for instance, senses not only to the rhythms of the body, but also to those of institutional, regional, national, and even global scales (DeLyser & Sui, 2013, p. 299) embedded within place. In the following, and building from the propagation of affect from the group to the individual, I hone in further on bodily rhythms that participants regularly enacted throughout the program. Specifically, I focus on the ways in which participants regularly oscillated, or cycled, among embodied perspectives during activity.

Oscillation denotes the expansion and contraction of activity. Here, I am particularly attuned to the ways in which participants regularly oscillated, or cycled, through embodied perspectives in-game. I describe this oscillation by elaborating on Eddy's efforts to connect the

transit station to the nearby Metro stop. In particular, I pay close attention to Eddy's oscillation between his first-person embodied perspective and a god's-eye, map-based perspective to coordinate his activity.

Eddy's experience that day was not completely removed from previous practices he enacted. Throughout MBB, participants often deployed cartographic representations to identify their location or to follow a desired trajectory of movement. Using a modification (mod) to the game called MapWriter, participants were able to locate themselves in-game using a mini-map positioned in the top-right corner of the screen, a frequent feature of first-/third-person video games (Figure 5-9). The map itself displayed one's position in the center, as well as one's orientation (i.e. which direction the player was currently facing).

Figure 5-9. Example of mini-map in top-right corner.

Players could also toggle back-and-forth between a full screen map and the mini-map. In addition to enabling a player to locate themselves in-game, the full screen map also allowed players to plot their own way points, making it easier for them to move from one location to the next or to name specific regions or areas. Moreover, the full screen map provided one's latitude/elevation/longitude as a distance from the player's origin, or spawn point (Figure 5-13). In this case, *Minecraft* uses latitude to reference the number of blocks the player has moved horizontally (x-axis) from that point, elevation to denote how much higher or lower she is from the point (z-axis), and longitude to describe how far vertically (y-axis) she has moved from that point.

Making the connection between the Metro and transit station necessitated that Eddy orient himself to the distant transit station while below ground. That is, Eddy had to figure out not only where he was located in reference to the transit station, but also what direction he needed to build toward in order to make the connection. Thus, because the Metro tracks were underground, Eddy was quite literally in the dark—both in terms of the surrounding landscape and in his understanding of which direction he needed to move. To remedy the former, Eddy began to place light bulbs around the cavern, thus greatly improving his ability to see. To improve the latter, Eddy remembered about the capabilities of the mini-map. It dawned on him: "Oh, I have that map that goes above my head so I can see where I'm going!" At this point, Eddy began to rhythmically oscillate between first-person (avatar) and god's eye (mini-map) perspectives—moving forward incrementally by cycling between the two.

Using the map's representation of his avatar as a guide, Eddy began to build the

underground tracks in the general direction of the transit system, recognizing that he would

have to turn the tracks multiple times to make them line up. He rhythmically oscillated between

his first-person perspective and map-based perspective, hybridizing the two in order to

continue his forward progress (Leander & Lovvorn, 2006). This oscillation led to repeated

adjustments, shifting his avatar-body one block to the left or right side in order to align himself

correctly with rapidly approaching location of the transit system (Figure 5-10).

Figure 5-10. Eddy repeatedly oscillated between first-person embodied perspective and god's-eye perspective to orient himself.

Eventually—and guided by the map—Eddy found himself in the vicinity of the train

station, letting Arthur know: "I'm getting really close to your thing!" Because he was

completely underground, however, Eddy only knew of his proximity to the transit system

because of his oscillation between first-person avatar and god's-eye map. Eddy did not want to

tunnel beyond the station, however, so he began to move forward incrementally. At this point,

Eddy added another map into his cycle, opting for the full-screen map upon which he could

plot specific points to both find his current location as well as mark his desired location (Figure

5-11).

Figure 5-11. Eddy toggles to the full screen map in order to check his location when compared to the train station.

For Eddy's purposes, two coordinates were important: 1) his own personal position in respect to the train station and 2) his desired position, or where he wanted to tunnel up and break the surface in front of the train station. By hovering his cursor over the arrow representing his avatar, the map displayed Eddy's latitude, elevation, and longitude coordinates (-452, 48, 676). Because he wanted to be exact with the location in which he would both stop building tracks and then tunnel upwards to the surface, Eddy plotted a stopping point for himself on the map (-447, 64, 678), naming the point "STOP." Over a period of fifty seconds, Eddy observed the map, hovering his cursor first over his personal coordinates and then over the stop coordinates (Figure 5-12).
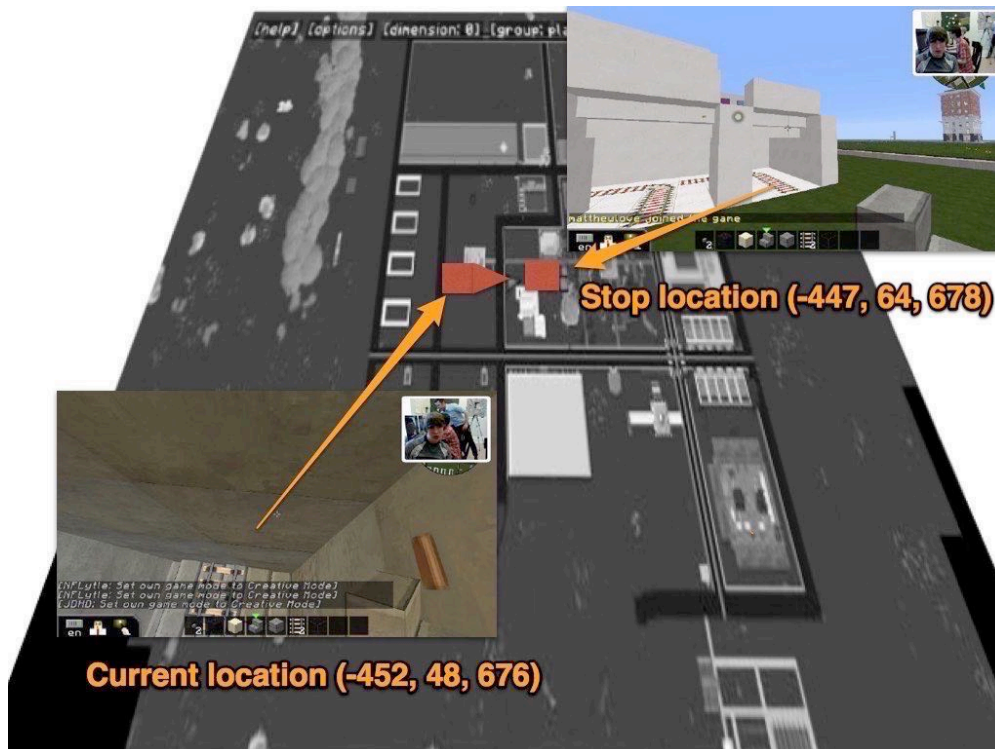
Figure 5-12. An enhanced version of Eddy's overhead map, depicting the view from his current location and the view from his stop location.

After three hovers back and forth he said out loud, yet to himself, "452…447." With those numbers in mind—a distance of 5 blocks—Eddy then exited the full-screen map and returned to his avatar's perspective, oscillating again between avatar and mini-map with the knowledge (and feeling) that he had to move his avatar forward those five blocks. He tunneled forward a distance of seven blocks (as opposed to the required five, although it did not make a difference), set down the tracks, and then tunneled upward, breaking through the surface and arriving directly in front of the train station, shouting, "Okay, perfect, look, look where I am!"

In the end, Eddy spent nearly one hour oscillating between avatar-body and mini-map in order to extend his track.

In a final interview, Eddy reflected on his use of maps throughout the program, stating:

> We started looking at a lot of maps and I started to see where all of the major buildings were, so you go down to the city and you see all these bigger uh buildings, and you're like, oh yeah that big building's on second and that's on first so you know like, you can basically see the map while you're standing there.

There is a difference between looking at a lot of maps and *being in* a lot of maps. Even further,

however, there was a greater difference in being in maps and *moving in* maps, of being

mobile. Eddy's oscillations between first- and god's-eye perspectives were rhythmic, constantly

moving as he progressed forward from the metro station toward Arthur's transit system. Rather

than taking on the perspective of an avatar, I argue, Eddy became the arrow, on his mini-map,

that represented his avatar. As a result, Eddy entered into what might be called embodied

metonymic activity as his avatar-body was translated into the directional arrow (map-body).

This experience for Eddy was highly mobile, however, forcing him, initially, to adjudicate

between avatar-body and map-body. Later, once he toggled into the full-screen map mode,

Eddy was also forced to play with temporality, plotting out future locations for his avatar-body

and coordinating how to arrive there. Following Leander and Lovvorn (2006), then, it was never

that Eddy himself was simply "smart and motivated" in working to connect the tracks. Rather,

Eddy-as-avatar-body became embroiled in a robust configuration that mobilized him—that

affected him—by enabling these rhythmic oscillations. Classroom and gameworld, write

Leander & Lovvorn, "are not dull and unmotivating merely because they are filled with

unmotivated persons. They are unmotivating because they are immobile" (p. 336). Eddy—and

his activity—was incredibly mobile, continually oscillating across embodied perspectives to

overcome a self-generated challenge.

Summary

In this chapter, I have described the topography of activity in MBB. Rather than isolating static instances of so-called "academics," I traced the relief of activity within this setting—following its contours—to illustrate the ways in which activity was an emergent production, often bubbling up in felt-response to other participants. In describing the topography of activity, I have also contributed an initial means to move across the multiple levels, or scales, put forth by those documenting and assessing learning in informal, media-rich settings (Lemke et al., 2015), which call attention not only to individual learning, but also to the development of the group and project. Specifically, I followed the contours of activity through an emphasis on rhythm. I focused my analytic attention on the development of one artifact in MBB—a transit station—to contribute three ways of moving alongside the rhythms of participation: amplitude/amplification, propagation, and oscillation. Amplification described the accelerating, and dissipating, intensities during activity: the joint-production of the transit system by all present participants evidenced amplification. Propagation described how those intensities led individual participants to peel off toward their own, related projects. Tom's unique, personal flourishes on the transit system provided him access into its production. Finally, oscillation took these rhythms to a micro-level, describing the rapid back-and-forth that Eddy enacted as he hybridized both avatar- and map-based perspectives.

CHAPTER SIX

CIVIC GEOGRAPHIES: ENGAGING CITIZENSHIP ACROSS SPACE, TIME, AND
SCALE

Introduction

My previous analytical chapters followed two "lines" of MBB's meshwork, respectively.

First, I targeted sparks of interest, moving alongside participants as they pursed their personal

interests, like learning how to make non-player characters. Then, I followed the topography of

activity by following the rhythmic contours of participation in MBB. In this chapter, I foreground

civic engagement, another dominant "line of growth" that stretched outward throughout MBB.

In introducing civic geographies, I challenge existing, spatiotemporally bound conceptions of

the kinds of civic engagement, or political participation, that youth enact within, and beyond,

informal, media-rich settings. Specifically, I offer civic geographies as a means to imagine civic

engagement opportunities for youth that cut across multiple spaces, temporalities, and scales.

By drawing on relational theories of place, I marshal civic geographies to question the

"agential cuts" (Barad, 2003) researchers, teachers, and mentors make during civic enactments.

That is, in what ways do teachers, students, and mentors care for—and design opportunities for

youth to engage with—"this place" rather than "that place"? And to what degree does "that

place" become integrated into "this place," or vice versa? An emphasis on civic geographies

advances Metzger's (2014) query: "What are the limits to responsibility and how are these

worked through in different [spatiotemporal] arrangements?" (p. 1007). To align this query with

my research questions, then, this chapter asks: How does civic engagement move and circulate

during this game-based program?

I situate this chapter alongside research that has sought to document heightened forms of youth civic engagement and political participation through digital media. In doing so, I develop a working understanding of civic engagement in a digital era with an emphasis on Mihailidis and Thevenin's (2013) definition of engaged citizenship. I then expand engaged citizenship through my focus on civic geographies.

I explore the civic geography of MBB in two ways. First, I tease apart the ways in which engaged citizenship cuts across space, scale, and time individually. I do so in order to setup the heart of this chapter in which I explore the fluid civic geography enacted by Neil. There, I describe how Neil's civic engagement *dilates* outward into another *Minecraft* server and then *contracts* back into our MBB server. In doing so, I pay particular attention to how Neil *calibrates* his civic practices on another server ("that place") into his gameplay on our server ("this place").

Digital Media and Engaged Citizenship: Participatory, Collaborative, and Expressive

A number of scholars across disciplines have sought to describe traditional conceptions of civic engagement through digital media (Jenkins, 2006; Kahne et al., 2012; Kahne et al., 2013; Lenhart et al., 2008; Vickery, 2014; Östman, 2012). Traditional conceptions of civic engagement, in this case, describe *citizen duties,* like voting, paying taxes, and obeying laws. In contrast, an *engaged citizenship* displays signs of independence, greater assertiveness, and a concern for others (Dalton, 2008, p. 4). Importantly, Mihailidis and Thevenin (2013) have developed a media literacy framework for an engaged citizenship. In doing so, they call for an engaged citizenship that operates with a participatory competency (Jenkins, 2006), or a

"culture of participation as default" that often begins in digital spheres and promotes "responsible, aware, and purposeful contributions to local, national, and global communities" (p. 1618). In addition to a participatory competency, an engaged citizenship sustains a collaborative competency, or a means to "recognize the capacity they have to form connections and extend their communications to a large group of interested peers" (p. 1618). Moreover, to participate and collaborate with others, engaged citizens must have expressive media literacy competency, or the ability to contribute, receive, and reflect on civic content. Finally, and perhaps most importantly for my purposes, an engaged citizen operates with a critical competency, where the critical consumption of content also "helps define and orient a sense of place and cultural connection to the world" (p. 1618).

In this chapter, I expand Mihailidis and Thevenin's (2013) take on engaged citizenship. I approach engaged citizenship as an act that is relational and extensive. Specifically, I follow the contours of engaged citizenship that circulated within and beyond MBB. In doing so, I contribute to reports of youth civic engagement that seek to locate what Sandor and Putnam (2010) have called the "right mix of virtual and real strands." Specifically, I offer civic geographies as a means to further describe—and follow—the spatiotemporal contours of civic engagement, or the ways in which civic engagement moves across space, time, and scale.

Theoretical Refinement

Civic Geographies

In developing civic geographies, I draw on relational conceptions of place, which approach place as a multiplicity of intersections (Massey, 1994), and as a product of practices and trajectories, including "interactions at all levels, from the (so-called) local to the (so-called)

global" (Massey, 2004, p. 5). Specifically, I focus on Massey's (2004) articulation of "geographies of responsibility." Three principles guide geographies of responsibility: 1) responsibility is relational, depending on any entity (an individual, a group) being constructed through its relations to others; 2) responsibility implies extension rather than restriction to the immediate or local; and 3) responsibility stretches across time and is not temporally bound to a specific event.

I bring together geographies of responsibility with work related to (educational) scale. Scale refers to spatial and temporal orders that teens, in this case, generate as they move toward, detach from, circulate through, and, finally, assemble within certain sites (Nespor, 2004, p. 310). Scale is dynamic, rather than static. Thus, Following Herod (2001), there are no "'natural' scales by which to order and organize human geographies. Rather, scales are historically and geographically negotiated…social actors create geographic scales through their activities" (p. 38-39, as cited in Nespor, 2004, p. 310).

Scales and calibration. I apply Nespor's (2004) five aspects of "educational scale" toward engaged citizenship. First, people generate scale through the production and circulation of artifacts. These artifacts can circulate at different rhythms and flows. For Nespor, these artifacts include textbooks, tests, desks, homework assignments, and more. Textbooks, for instance, signify a scale that expands to education at the state level. Second, people produce scale by the ways in which they are moved physically by various entities (e.g. their school, the MBB program). Schools, for example, physically and symbolically transport youth at specific times of day. This means that scale is produced as youth are transported (by school) through and across both social and material landscapes. Third, scale depends upon the space-

time properties of the networks—including people and environments—in which youth are enmeshed. Nespor thinks in terms of person-as-network, or the fact that people themselves are geographically and temporally distributed. Encountering a new person means encountering a new network. Fourth, scale is produced by what is made visible, and what remains invisible. Systems of power are at play, in this case, that facilitate (in)visibility. As an illustration, Nespor, compares schools to prisons, specifically noting the ways in which both institutions carefully control their public presentation: certain events, activities, or people can be made "unseeable." Finally, and importantly, scale depends upon the ways in which people "calibrate" events that occur in disparate locations (e.g. school and home). Teaching and learning, for instance do not occur within a container; rather, teaching and learning occur in response to events and space-times outside of the classroom. No description of teaching, Nespor writes, "can be complete without a description of the spatial and temporal orders of the worlds to which is it calibrated by teachers and students" (p. 313).

     Place-making. Nespor's emphasis on calibration resonates particularly well with my aforementioned emphasis on place-making. Calibration, I argue is similar to the act of "bundling," of joining up with or linking into other space-times. Importantly, when bundling people select, or choose, the raw materials, or elements, which comprise the places that they experience (Pierce, Martin & Murphy, 2010, p. 58). Still, those selections, as I have argued, are affectively-charged. While, affect may be the "strange attractor lingering in place awaiting its realization in practice, habit, and sensation" (Duff, 2013, p. 892), I argue that through the process of calibration, affects can also traverse scale. This deliberate transformation of place by

integrating not only external space-times, but also external affects, gives shape to civic geographies. Thus, "scale-making" as Nespor calls it, occurs during place-making.

Methodological Refinement

The focus on civic engagement in this chapter demanded a few tweaks to the methodological approach employed in the previous chapter. Overall, I continued to adopt a mobile methodology, considering civic engagement a "moving system" (Büscher et al., 2010) that I followed across digital and physical spaces. When "walking" through my data (Eakle, 2007), however, I was particularly attuned to instances of *engaged citizenship (*Mihailidis & Thevenin, 2013*)*. When re-viewing video data, field notes, and interviews, I did not adhere to a strict definition of this term; rather, I held on to it loosely in order to be open to various forms of "responsible, aware, and purposeful contributions to local, national, and global communities" (Mihailidis & Thevenin, 2013, p. 1618). Thus upon logging data in ChronViz, I noted particular moments of engaged citizenship—like helping people in-game, or collaborating in-room; of an awareness of others' needs—like those in the Lutece Place community; and of the feeling of making potential, purposeful contributions to the city—like developing new forms of art, or community centers.

After logging the data and developing an initial awareness of these emerging forms of engaged citizenship, I then continued with my previously described analytical methods, including temporal circling and the identification of refrains. Both temporal circling and the identification of refrains worked together, enabling me to develop an acute sense of the "affective complexes" that participants produced through activity. With an awareness of these affective complexes, I then returned to my data logs, working to bring together those

affectively-charged zones of production with my initial notes detailing the space-times of engaged citizenship.

A few new alterations to my initial description of methods transpired at this point. Inspired by social learning ecology maps (Ching et al., 2014) and event mapping (Putney, 2007), my approach resulted in mapping sites of participation with a specific focus on the spatiotemporal contours of our participants' civic engagements. Following the contours of civic engagement led me to reimagine civic engagement in terms of civic geographies by attending to the space, time, and scale of activity. I present the civic geography "map" up front in the findings as an initial entry point into describing the civic geography of MBB.

However, the data also pointed me toward the need to articulate the expansive scale of the civic geography, especially in terms of how it reached beyond MBB, the library, and the city of Metro. Specifically, I followed the networked residue (Grimes and Fields, 2012) of one participant, Neil, to trace his civic engagement on another *Minecraft* server removed from his MBB experience. Neil, an active participant on a server called Mariande Realms, left a trail of networked residue on his profile page affiliated with the server (which he directed me towards and said I should check out). In following this residue, I again targeted instances of engaged citizenship by Neil as demonstrated by posts to the server's forum, messages left for other players, screenshots taken from gameplay, and posts directed toward moderators noting when other players have broken the rules of the server. From there, I was able to make direct connections between how Neil calibrated his citizenship across servers, from the Mariande server to our MBB server, and *made place* while doing so.

Findings

The Contours of Engaged Citizenship in Metro: Building Blocks

In the following, I first introduce the civic geography of MBB. To do so, I pull apart the ways in which engaged citizenship opportunities for youth expanded across space, time, and scale. Of course, while I pull apart space, time, and scale to be more precise in this analysis, each element overlaps with the others considerably. Thus, in the latter portion of this chapter, I describe the fluidity of Neil's civic geography, with a specific focus on the ways in which he actively calibrated civic engagement across multiple *Minecraft* servers. I begin, though, by illustrating the ways in which engaged citizenship cut across space, time, and scale (Figure 6-1).
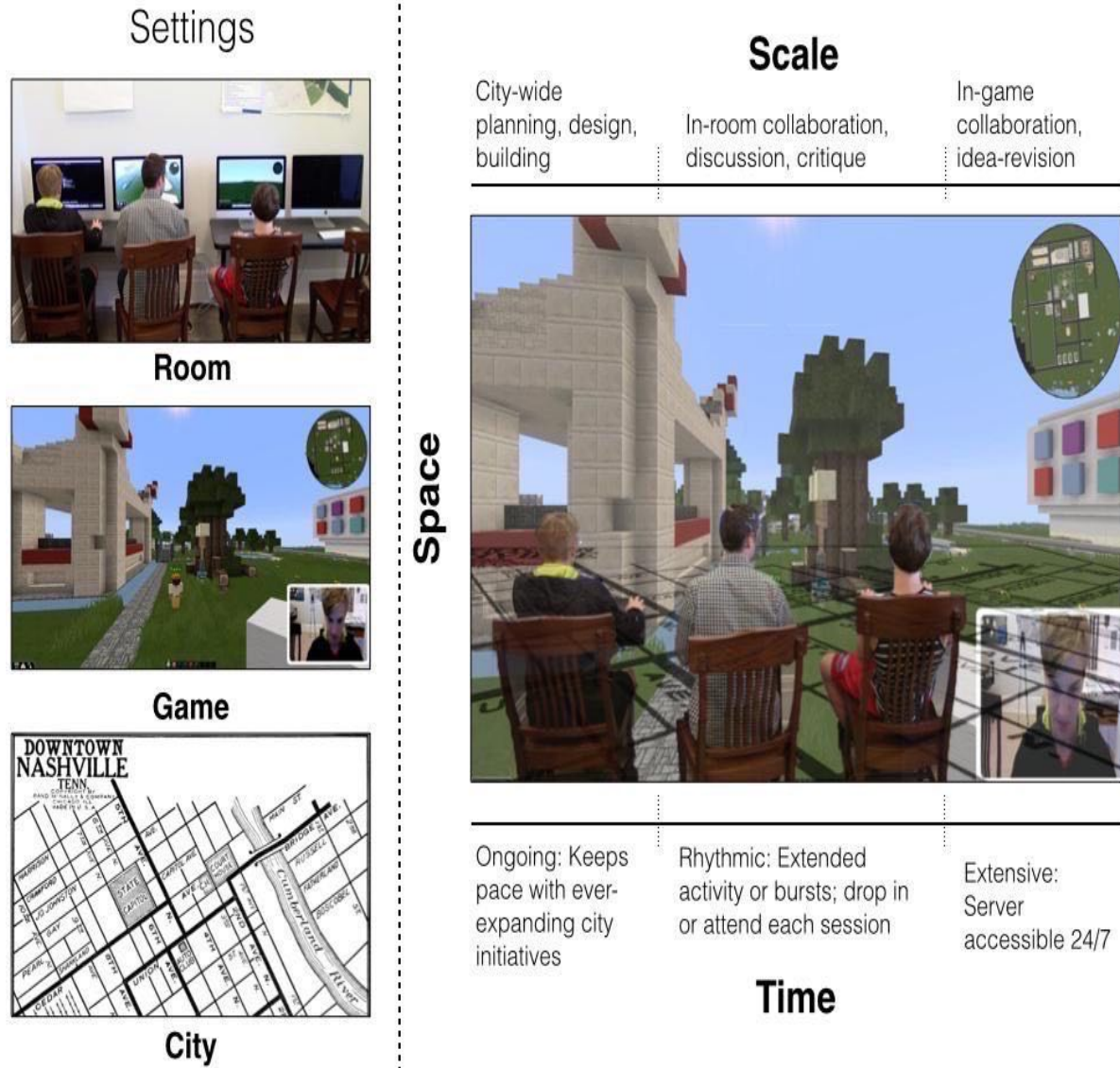
Figure 6-1. The civic geography of MBB, including space, time, and scale.

Space. MBB was a real virtual space (Ehret & Hollett, 2014). Rather than traversing back and forth between "physical" space and an imagined "cyberspace," bodily activities in digital and physical spaces are connected. Thus, the digital does not exist simply "on the screen" but rather spills outward into reality and "become[s] the experience" (Castells, 1996, p. 328). Here, through an emphasis on space, I first underscore the permeable settings of

engaged citizenship. That is, in emphasizing space, I emphasize "where" activity occurred. Scale, which will follow, emphasizes "what" forms of engaged citizenship occurred within those spaces.

Figure 6-1 illustrates the ways in which room, game, and city interacted with one another. The real virtual space of MBB was produced through the complex interplay of game, room, and city (Stevens, Satwicz, & McCarthy, 2008). Given the task of building the city of Metro in-game meant that, from the start, the real and virtual regularly intermingled. Participants, for instance, would often turn to visual (and, one could argue, embodied) resources like Google Maps's Streetview capacity to help fine-tune specific details related to their builds.

This spatial blending of embodied and digital space was most evident as activity shifted towards Lutece Place, a neighborhood that had been slated for further development for the Metro housing authority. For example, having lived near Lutece Place at one point in his life, Tom wanted to develop a richer, more embodied perspective regarding its location prior to building anything within Lutece in-game. To do so, he located his former home on Google Maps, zoomed into it, and then "walked" from there to Lutece Place via Google Streetview (Figure 6-2).
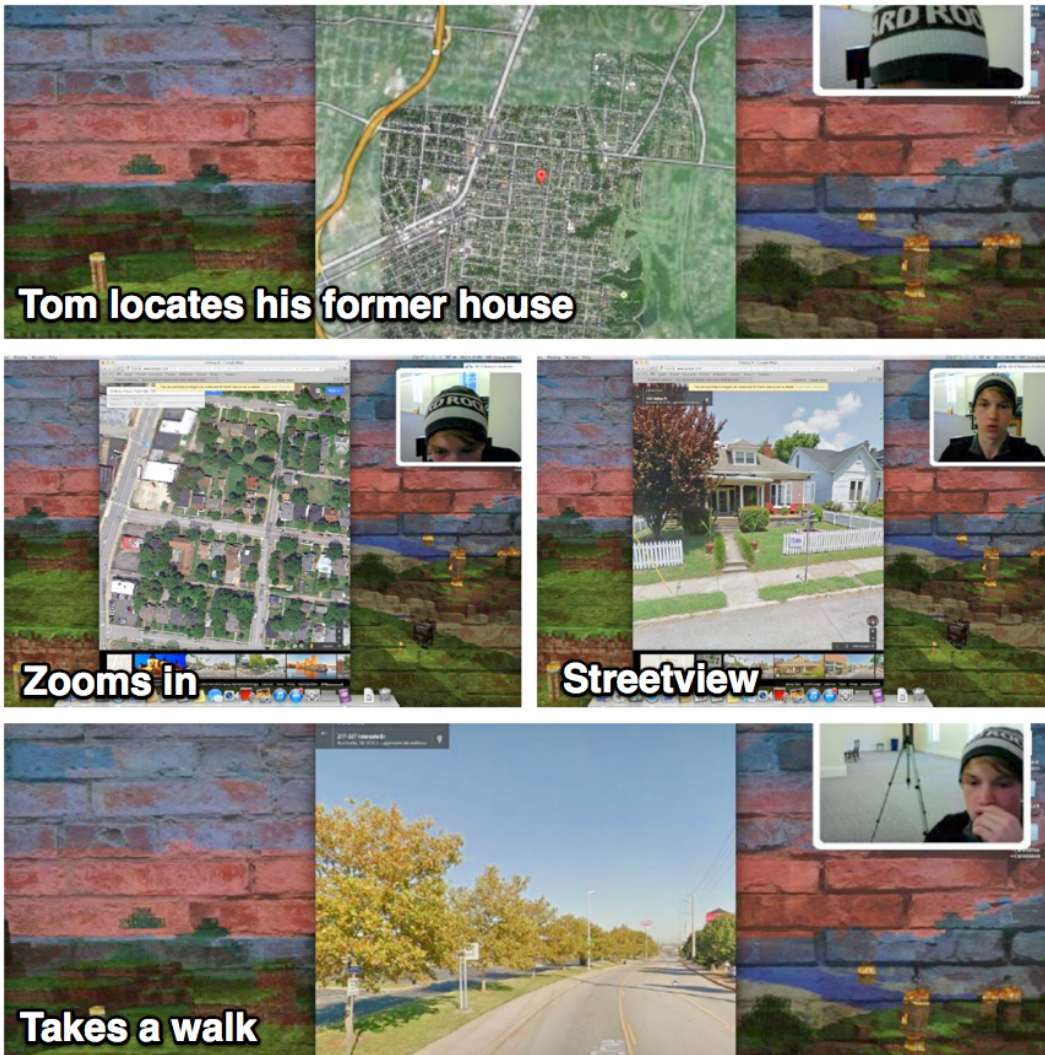
Figure 6-2. Tom locates his former home using Google Maps and then "walks" to Lutece Place.

Tom refused to participate in kind of building until he had adequately felt—and sensed— the area in which he was working. By traversing through the (virtual) space provided by Google Streetview, he primed himself for a form of engaged citizenship that was not detached from his own personal experience living in a nearby—although very different—community. Tom's spatial experience in this case quite literally provided an initial means for him to "orient a sense of place" (Mihailidis & Thevenin, 2013) from which he could engage critically—if not

emotionally and bodily—with a neighborhood undergoing change. Still, Tom's previous experiences in his neighborhood near Lutece place were not only spatial but also temporal. In recovering those memories—like walking to school, playing with friends, or driving with parents—Tom reached back through time, enabling himself to draw upon his own lived experience in Metro. Thus, just as multiple spaces interpenetrated one another, so did multiple temporalities.

Time. As evidenced in Tom's walk down the street, participants' lived experience in Metro acted as an overarching—and ongoing—temporality that influenced their (civic) engagement in MBB. While his lived experience in the surrounding area largely shaped Tom's participation once we began building in Lutece Place, that was not the case for all participants. Arthur, for example, rarely referenced his experience living in, and moving through, Metro. Certain temporalities carried more weight, so to speak, for each participant (i.e. Tom's Lived Experience > Arthur's Lived Experience). Figure 6-3 illustrates some—not all—of the temporalities that streamed through—and intersected with—focal participants' experience of MBB. Thicker lines denote extended temporal experiences. Tom's line for "Lived" experience is thus thicker than Arthur's. I further elaborate upon these temporalities below.

Timestreams in MBB
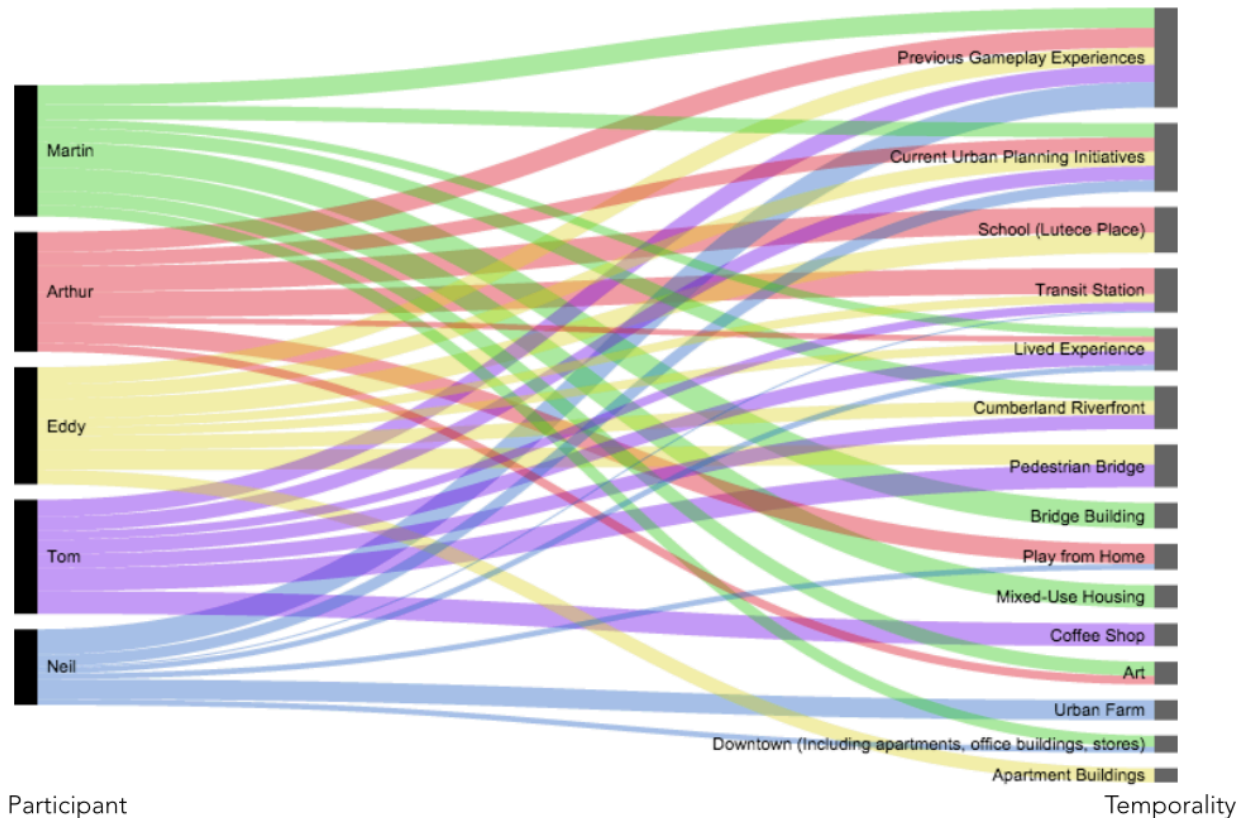
Figure 6-3. Timestreams of MBB participants.

As depicted here, all participants drew upon their lived experience living in Metro to some degree. Each stream, however, is weighted differently for each participant. As I have described, Tom, for example, evidenced a much greater reliance on previous (and ongoing) spatiotemporal lived experiences than Arthur did. Neil, like Arthur, also rarely referenced his personal experiences in Metro.

Moreover, forms of engaged citizenship were ongoing, keeping pace with ever-expanding urban planning initiatives. For instance, while earlier phases of MBB production focused on the downtown Cumberland Riverfront park, later phases moved alongside current

citywide planning initiatives, enabling participants to work in neighborhoods like Lutece Place, using the same documents presented at meetings with residents (Figure 6-4).

Figure 6-4. An example of documents (made accessible by the Metro housing authority) used

Alongside overarching temporalities like lived experiences and planning initiatives, MBB produced its own temporalities. Subsequent phases moved participants across areas in the city, moving from the riverfront park, then to the downtown/Broadway area and, finally, toward to Lutece Place. Moreover, regular activity provided its own temporalities for each participant and their individual builds—some participants worked on one project, or build, for extended periods of time whereas other participants moved quickly from one build to the next, helping and collaborating with others as necessary. Jasper, for instance, spent his entire time in MBB working on a single-family home (Figure 6-5), first building the home itself, then the

rooms, then the car in the driveway, and finally adding various accoutrements within individual

rooms.

Finally, time stretched beyond our regular sessions for some participants, too, as they

continued to contribute to and play on our server from home after installing it on their personal

computers. Arthur, as depicted in Figure 6-3, took advantage of this opportunity the most,

noting that "there's no time limit." He was most proud of his work when it "took its time,"

when he could continue to think and work over days, and even weeks, at home and during

MBB. This capability was a stark contrast to, as he noted, the twenty minutes he often had to

complete worksheets in math class, which he often rushed through and rarely completed.

Scale. These spatiotemporal dynamics contributed to the possible scales of engaged

citizenship within MBB. If space describes the setting of engagement (viewed broadly as room-

game – city here), then scale describes what forms of engaged citizenship occur within (and

beyond) those settings. In the following, I describe the forms of engaged citizenship

happening across scales, temporarily sifting them apart. Once I have done so, I then illustrate

the ways in which scales in fact, operated simultaneously—a critical component of the civic

geography of MBB.

At its broadest, engaged citizenship worked at the scale of the city as participants

questioned and analyzed ongoing planning and housing issues in Metro, like mixed-use

housing and urban farms. Because we were using the Metro Civic Design Center's "Plan for

Metro," all activity centered around its guiding principles. Thus, participant talk—and the

structures they built—revolved around forms of engaged citizenship, like maintaining visual

order in the city, developing housing, considering the role of art, and imagining new forms of

transportation. Rather than boxing up these civic practices, however, I "unfold" and "splay them out" (Doel, 1999), recognizing that participants shift their attention to specific practices at the city-scale over time (i.e. focusing more on transportation, as evidenced in the previous chapter, than on art). Figure 6-5 illustrates the unfolding of these practices. I play these representations out at each scale, "unfolding" them here only to re-fold—and re-mix—them later.
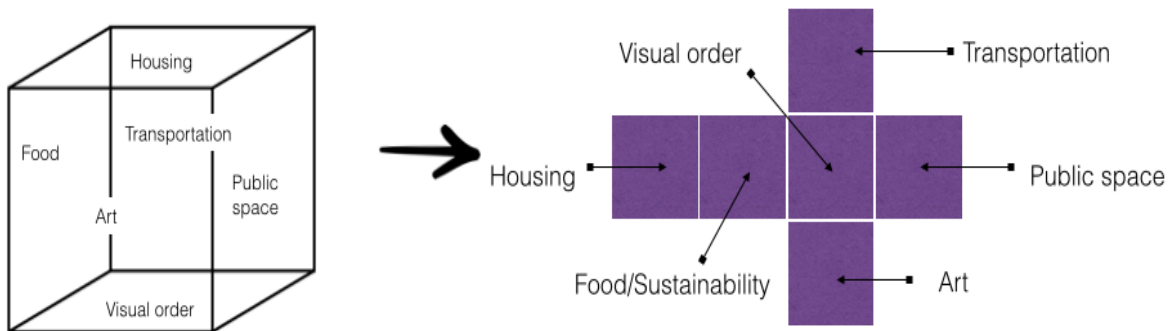
Figure 6-5. Unfolding engaged citizenship practices at scale of city.

Engaged citizenship at the scale of the city and the scale of the room were never truly separated, however. Participants collaborated with one another at the scale of the room, working together as they encountered problems and sought help from each other. MBB activity was often peppered with chatter across the room as participants swarmed to certain in-game locations and then worked through problems together across the real virtual space (Figure 6-6). Figure 6-6, for instance, offers a brief example of this kind of collaboration. Here, Malik has begun to build a "sand castle that looks like a real castle" within a community park. Eddy has flown his avatar over to the location of the castle, notices the thin moat that Malik has

built, and offers to contribute a drawbridge to the park.

Figure 6-6. Eddy and Malik collaborate at the scale of the room.

While this kind of collaboration was frequent, participants also routinely assisted one another

with builds, taking on joint-responsibilities for various components. Moreover, they recognized

one another's expertise, making bids for help as needed. Again, I unfold those practices below

(Figure 6-7).
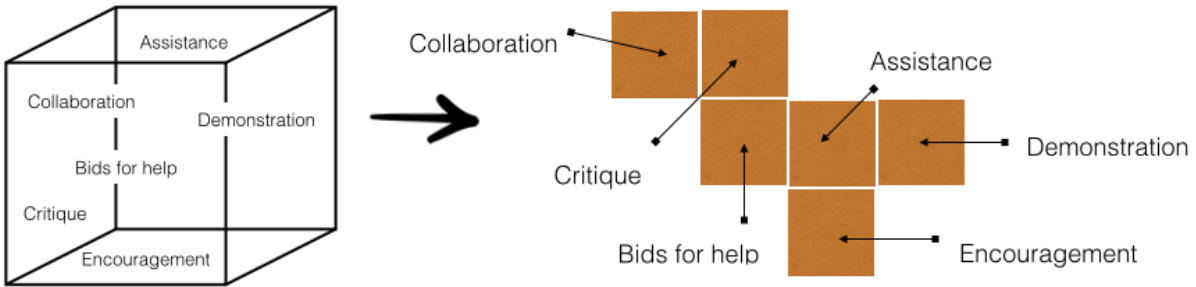
Figure 6-7. Unfolding engaged citizenship practices at scale of room.

While this kind of room-based collaboration was frequent, participants also helped and collaborated with one another uniquely in-game (e.g. the ways in which the transport station came about in chapter five). Many of these practices aligned with forms of participatory culture, like the sharing of diverse links, videos, and other resources, as well as the remixing of others' builds. The differences between in-room and in-game aid are not trivial, however, as certain participants were more willing to engage with others in different spaces. For instance, one participant, Neil rarely spoke to others in-room, but often helped them in-game, flying in to teach others how to build a specific edifice, or helping them along with their ongoing builds. Thus, while there was certainly cross-over between forms of engaged citizenship that occurred at the scale of the room, the scale of the game provided additional opportunities as well (Figure 6-8).
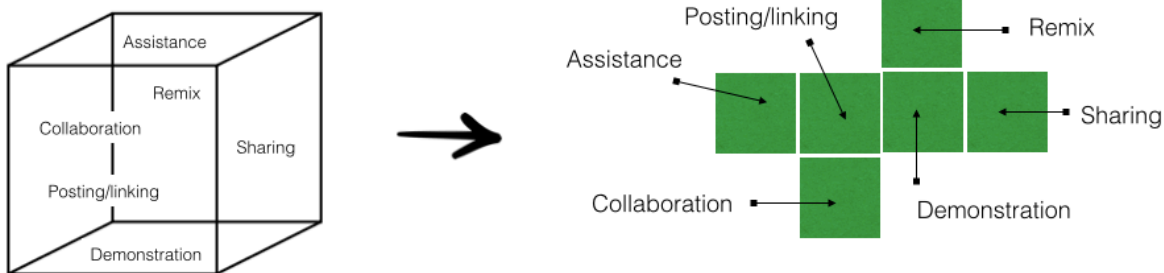
Figure 6-8. Unfolding engaged citizenship practices at scale of game.

Again, these scales are not necessarily separate. I have only pulled them apart for illustrative purposes. Importantly, each of these scales—as depicted in the figures above—can be calibrated differently by participants. Participants calibrate seemingly disparate scales (e.g. room/game/city) by bringing them into contact with one another, by tracing out "particular networks of association" (Nespor, 2004, p. 312). Participant-driven calibrations, then, loosen an overt focus of forms of civic engagement at one scale, bringing them together as multi-scalar civic enactments (Figure 6-9). Each participant re-folds, and re-mixes, his or her own, unique, forms of civic engagement. Thus the boxes, as evidenced on the right of Figure 6-9, neither fold back up in the same manner nor do they contain the same elements.
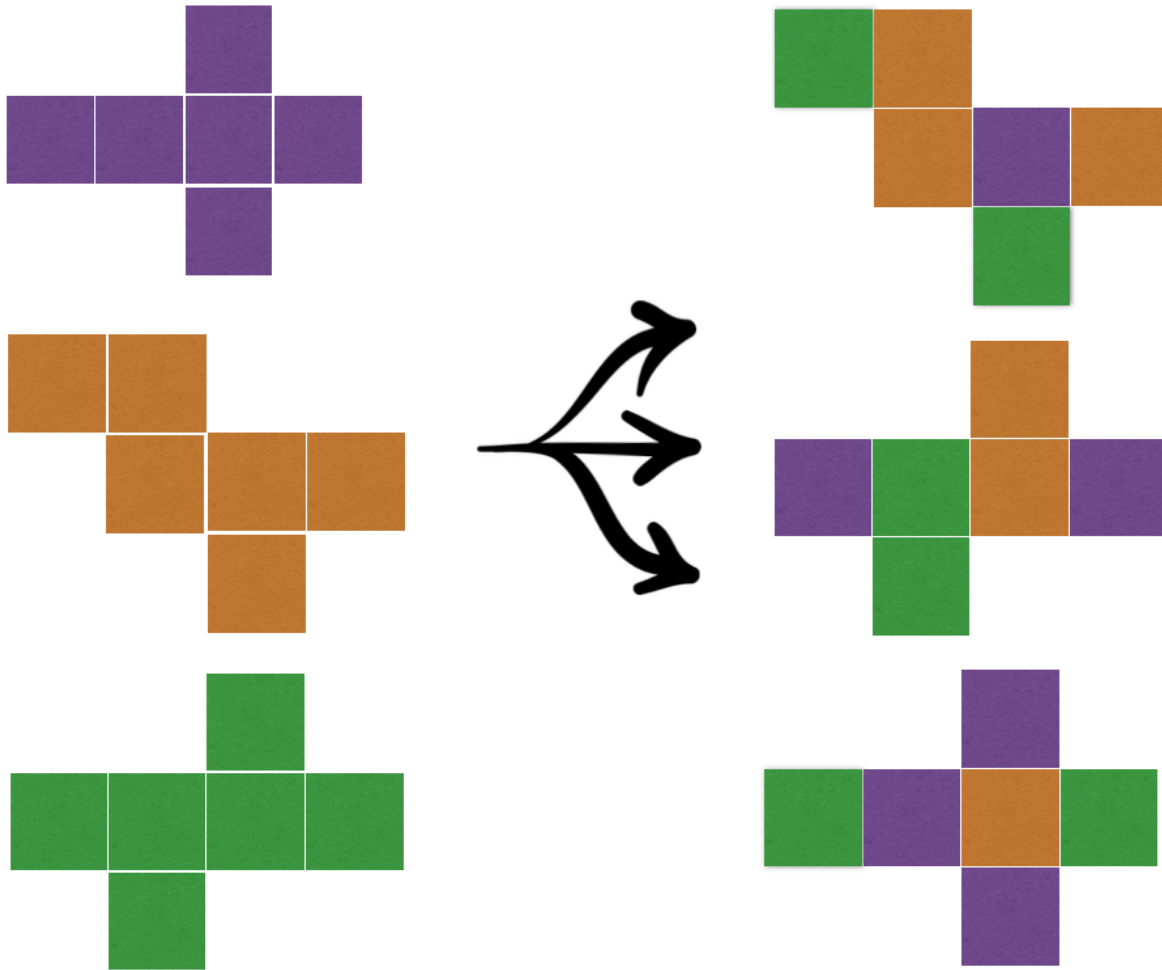
Figure 6-9. Scales of city, room, and game, unfolded and re-configured.

With this overarching understanding of the ways in which MBB operated across space, time, and scale, I now turn more specifically to Neil's civic geography and the expansive scale that informed it. In the following, I analyze the ways in which the scale of Neil's *Minecraft* gameplay ventured beyond the library and impacted the ways in which he civically-oriented himself within the MBB community. Thus, I attend more explicitly to how Neil calibrated his forms of civic engagement across space, time, and scale.

Calibrating Engaged Citizenship Across Multiplayer Servers

Neil's way of engaging—and helping—others revealed a scale that expanded beyond that of the game, room, and city and into the affinity space of *Minecraft* more broadly. I refer to Neil's integration of gameplay outside of the program *into* the program as calibrating. Within the program, Neil participated differently than others. As described above, he did not often engage with others in-room, but frequently helped and collaborated with others in-game—to the degree that he maintained in-game proximity to others in order to help out as needed.

On one occasion, for example, a newcomer, Powell, was building a fountain in Lutece Place. Powell frequently sought out help while creating his fountain, asking Neil directly if he could "make it more symmetrical" once things began to go awry. Neil quickly flew to Powell's aid, taking a break from his own project to fix up minor details in the fountain, like making its base more symmetrical and adding components to the surrounding area, like a picnic table with chairs. In fact, Neil even put on a mini-lesson for Powell, highlighting how three very different blocks, once put together, could give the impression of chairs (Figure 6-10).

Figure 6-10. Neil's mini-demonstration to Powell on how to create chairs.

Neil's post-interview illuminated where this helpful style of play originated. Outside of our program, Neil was a frequent player on a *Minecraft* server called Mariande Realms (hereafter Mariande). In our interview, he was excited to show me the online portal through which he interacted with others who played on the server: "It has forum posts, your wall, like Facebook for gamers," he said. And then added, "there's no swearing."

Neil's comment about swearing is important because of the culture that surrounds so-called inappropriate activity on Mariande. There are specific rules and regulations on the server that make it a positive community for Neil and other members. Because Neil "really love[s] the

server and the people on it," he helps the server's moderators (mods) as they monitor players

who may not abide by the rules. This means that when players break the rules—like swearing,

"scamming," or destroying people's work (griefing)—Neil will report them to the mods. Once

reported, the mods can ban players, mute (making them unable to speak with others), or even

kick players off the server. In response, players can argue for an appeal, or for a shortened

sentence (Figure 6-11).
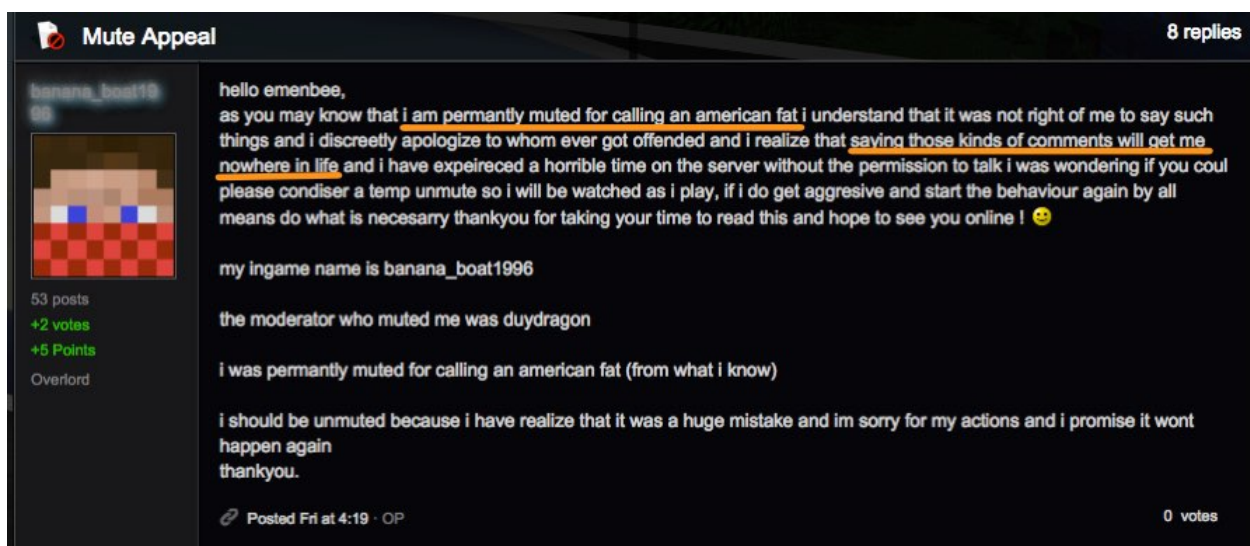
Figure 6-11. Appeal made to the mods by a player who "called an American fat."

In Figure 6-11, for instance, a player has filed a "Mute Appeal" for "calling an American fat."

The player has also sought to prove to the mods that he or she understands the wrongdoing

and "realizes that saying those kinds of comments will get me nowhere in life."

While this communications occurs on the server's forum, others forms of engaged citizenship

occur in-game. For instance, players regularly organized protests to dispute bans in hopes of

gaining the mods' attention. Neil established one such protest, calling for others to take action

in removing a ban from an undeserving friend (Figure 6-12). Each clump of "dirt" dropped into

the chest signified another players' support of Ninjapotao06, who had been banned. Upon

opening the chest, mods could see how much "dirt" was in there and thus confirm the amount

of support others had for Ninjapotato06.

Figure 6-12. Screenshot from Neil's call to action to support a player who had been banned.

In our interview, Neil pointed out a specific instance in which he reported someone.

"It's pretty vulgar," he said, as he showed me a screenshot of the sexually-charged tirade

directed towards another players mother, which Neil submitted to the mods.

The embedded chat log also displayed other players' response to this attack:

Awesome_guy1122, for instance, called out, "Whoa! language bro!" User defectiveclaws

laughed, "lol there's another language report tonight that makes 2." As evidenced by players

like Awesome_guy1122 and defectiveclaws, Neil was not alone in his recognition of the

original infraction.

Neil was not merely tattling on another player, though. Aside from that fact that it "gets annoying when someone is constantly swearing," Neil was also trying to prove to the mods that he was a responsible member of the server, someone who could demonstrate leadership qualities by helping the mods monitor a rather massive server that, on average, had about 250 people online playing together (Figure 6-13):

Figure 6-13. Neil's states his desire to be a staff member on the Mariande server.

It was Neil's desire to be on staff—to take on a larger role in this meaningful community—that

not only spurred him to report people, but also to help newcomers, much like he did with

Powell. He consistently wanted to "help any one that's new." Neil made good on this

statement two weeks after our interview, formally applying for a position on staff as a Junior

Moderator of Mariande. In his application, he wrote:

> I believe I should be JrMod because I am good at helping other people, while being
> funny and useful to everyone. I am 15 years old, I will help new players to get started on
> the server, and I can help people with and basic - advanced Minecraft skills (sic). I would
> really like to be JrMod, however, it is ok if this is rejected.

Neil noted not only that he would help people with basic and advanced *Minecraft* skills, but he

would also "get people started on the server," acting as a mentor as they acclimated. This is

precisely how he worked with Powell, sticking close by him in case Powell needed help,

coming to Powell's aid when he was unsure of how to do something specific. And Neil was

able to articulate his strategy when working with newcomers.

> Like teachers say sometimes, you don't just tell someone what to do. Well you don't
> just tell, or do it for them. But you tell them how. If you don't tell them how, then they
> don't understand it and they'll have co constantly ask you and you don't want that to
> happen.

Neil's calibration of scale. Neil is an example of a person-as-network (Nespor,

2004). People, Nespor writes, are never alone; they are "always entangled with artifacts and

environments." In this case, the ways in which Neil guided and supported Powell were highly

entangled with the ways he guided and supported new players on the Mariande server. Thus,

Neil calibrated his civic engagement across server spaces. The scale of Neil's civic engagement

was extensive—dilating and contracting between the Mariande server and our MBB server.

Neil-as-network, then, was "geographically and temporally distributed" (Nespor, 2004, p. 311).

Moreover, when Powell sought and received Neil's help, Powell also gained access to that Mariande space, no matter how fleetingly. In turn, Powell was "brought into association" with Mariande, with the ways in which players guide, help, and support one another there.

Neil-as-network operates within a civic geography. His form of engaged citizenship was neither spatially isolated to MBB nor was it temporally bound, occurring only during a framed period of time. Rather, it was extensive, circulating back-and-forth between Mariande and MBB. In fact, Neil calibrated his civic engagement between Mariande and MBB, agentively reaching into his past (and current) experiences on Mariande and integrating them into MBB.

An analysis of the multiple scales across which this civic engagement operated makes clear that civic engagement—like learning—does not occur in a container (Leander, Phillips, and Taylor, 2010). Yet, digital media researchers continue to make "agential cuts" (Barad, 2007) that isolate civic engagement as political participation (Ostman, 2012), or providing an urban planning experience for teens on the civic web (Gordon 2013). In doing so, specific scales of civic engagement, of political opportunity, become dominant, more authoritative than others. As a result, responsibility—and engaged citizenship—fails to circulate between "here" and "there."

When certain scales of civic engagement become dominant (typical those that are "here"), others become hidden, invisible ("there"). Tracing forms of responsibility (Massey, 2004) as simple as Neil's helping and supporting of Powell (contracted scale) unearthed Neil's rich history of engaged citizenship on the Mariande server (dilated scale), of nurturing newcomers, flagging language infractions, and protesting for friends who had been treated unfairly. While settings designed according to the principles of connected learning seek to

promote political opportunities for youth—often highly localized— there is still a need to trace the ways in which opportunities for civic engagement operate at various scales, including those that youth calibrate across settings, like libraries, cities, and online spaces. Civic engagement should not be collapsed by teachers or researchers into spatiotemporally bound, one-and-done, localized enactments. Doing so defines "certain meanings and spacetime relations as the meanings and connections that count in these networks of power, and to make other meanings, connections, and processes invisible and unseeable" (Nespor, 2004, p. 321).

Massey's conception of geographies of responsibility particularly helped me develop civic geographies. Geographies of responsibility stem from Massey's history of thinking toward a "global sense of place" (1994). Through a global sense of place, the character of cities, regions, and nations as places has far less to do with physical geography or location than with the "effects of spatial and temporal exposure and connectivity" (Amin, 2001, p. 391). Despite a growing awareness of the multi-faceted ways in which teens connect with one another—both physically and digitally—youth civic engagement continues to be hidden, made invisible, with scholars focusing primarily on what youth know about politics or what politically-charged material they create and post on social media sites. What is a teen's "spatial and temporal exposure and connectivity" to forms of engaged citizenship? How do these forms of engaged citizenship intersect with new literacies? With teens' ongoing learning through digital media? What happens when mentors, teachers, and scholars stop targeting the local and in civic engagement and begin to develop a global sense of engaged citizenship, following the digital and physical strands of engaged citizenship that teens calibrate across time and space, and at dilated and contracted scales?

Summary

In this chapter, I have put forth civic geographies to imagine civic engagement opportunities for youth that cut across multiple spaces, temporalities, and scales. The construct of civic geographies is a deliberate attempt to introduce a mobile perspective to civic engagement. Typically civic engagement is bound, framed as individual enactments, or as political participation. Civic geographies, in contrast, are a way forward toward finding the "right mix of virtual and real strands" that youth weave together through engaged citizenship (Sandor & Putnam, 2010). First, I teased apart the civic geography that MBB fostered for participants. Teens regularly assessed and critiqued the needs of the city (dilated scale), while also striving to efficiently collaborate both in-room and in-game (contracted scales). Moreover, teens were able to engage with the city, and one another, at varying temporalities, ranging from days, to weeks, and months. To underscore the fluidity of the civic geography, though, I demonstrated the ways in which Neil calibrated specific civic practices—helping, guiding, teaching, demonstrating—across server spaces. On his Mariande server Neil took pride in guiding and teaching newcomers; he evidenced those same practices when working with Powell, a newcomer to MBB. In the end, I argued that re-orienting civic engagement toward civic geographies follows the contours of civic enactments across space, time, and scale—from hours helping a newcomer on one server, to days spent protesting for a friend on another.

CHAPTER SEVEN

DISCUSSION, IMPLICATIONS, AND CONCLUSION

In the following, I re-visit my analytical chapters through the lens of affectively-charged place-making. I discuss the art of place-making participants enacted in MBB. From there, I hone in on the implications for this dissertation, underscoring potential contributions toward 1) pedagogy/mentoring within informal media-rich settings, as well as 2) designing for mobility within informal, media-rich learning settings.

Affectively-charged Place-making

The art of place-making, Duff writes, "serves to enmesh bodies in relational networks of meaning and belonging, of time and space" (p. 890). While place-making is often attributed to the ways in which people carve out places for themselves in specific geographic locales, typically urban settings (Lepofsky & Fraser, 2003; McCann, 2002; Pink, 2008; Wu, 2000), I bring place-making into contact with the ways in which learners transform learning settings into places of learning for their own personal enrichment. I have specifically adopted a relational approach to place, one in which place consists of lines (Ingold, 2007), or stories (Massey, 2005)—space-time trajectories which individuals pull together through cognitive and emotional processes (Massey, 2005, p. 119). As Massey writes, people join "up with, somehow linking into, the collection of interwoven stories of which that place is made." People pick up the "threads and weave them together into a more coherent feeling of being 'here', 'now'" (Massey, 2005, p. 119).

Chapter four detailed the interest-powered mobilities of participants in MBB. In that chapter, I described how learners were affected toward interest-powered learning opportunities in three ways: First, through passengering, or interest that moved and circulated through affective intensities resonating between participants; second, through mutability, or interest that moved and circulated through affective intensities resonating between participants and concepts; and third, through residue; or interest that moved and circulated through affective intensities resonating between participants and peer-created objects embedded in-game. Each of these sub-sections illustrated the way in which affects moved participants toward interest-powered learning opportunities. I targeted sparks of interest and then moved alongside participants as they pursued those interests. In doing so, I showed that interest is mobile, and that it is sparked in multiple ways, including by other participants, by specific ideas, and by existing artifacts.

The affective connections with each of these elements, though, may best describe the kinds of "relational networks" that Duff emphasizes in the making of place. Participants' bodies were "enmeshed" in these networks. These bodies were feeling and sensing the surrounding real virtual setting (Ehret & Hollett, 2014). Subsequently, they were lured in by affect, that "strange attractor lingering in place awaiting its realization (Duff, 2013, p. 890)." Interest, then, was not necessarily an *a priori* construct but rather something that emerged on a daily, if not moment-to-moment basis. Martin and Jeremy, for instance, demonstrated the ways in which enthusiasm beget an interest in the development of non-player characters.

Affect, as Duff notes, "serves as a kind of map or tool of navigation." When entering into new learning spaces—like those at public libraries—learners often encounter relatively

uncharted educational territory. Libraries, historically, have not been viewed as learning settings by patrons. In the case of MBB, for example, participants found themselves unsure of whether or not they were supposed to raise their hands when directing questions toward me. Tom would, jokingly, and hesitantly, raise his hand, saying, "Ummm....Mr Hollett" to grab my attention. In this place of learning, formal learning space-times, like school, were present—their ways of talking, sitting, and gaining the attention of the teacher/mentor permeating our activity. Participants adjudicated how to transform this place of learning into one that was not necessarily school, yet one that was not necessarily free-play. Thus, informal learning initiatives like MBB, while enticing, leave learners seeking out new ways of being, acting, and doing. As evidenced in the description of Neil and Leto, for example, who sought out in-bound trajectories, affect became the "tool of navigation" that provided them with an initial point of entry into participation, including not only learning how to plan and build, but also how to participate.

Place-making positions learners as agentive in their pursuits. While theories of place note the many "lines" and "stories" that cut across any given locale, theories of place-making clarify how place becomes a "here" "now." The place of MBB was made and re-made each time I met with participants (although previous "stories," of course, remained). By being affected—by having an interest sparked and then pursuing it—participants began to carve out the place that, temporarily, as MBB. And it took my affective attunement as a designer and mentor to recognize the ways in which participants were carving out their own place within MBB and to support those carvings. Once I recognized the ways in which Martin and Jeremy were working with NPCs, for example, I began to seek out additional ways in which they could

deploy their newfound skill-set. Once I became aware of the way in which Martin had

continually shaped and re-shaped his redstone schematic, I not only challenged him to

produce new variations of it, but also challenged others to learn the mechanics of redstone as

well, using Martin's schematic as an example. In doing so, I reached back temporally—

grabbing on to previous "stories" produced in MBB—and (re)placed them in subsequent

meetings. This place of MBB was always a place-in-the-making.

In chapter five, I described the topography of activity in MBB. Rather than isolating

static instances of so-called "academics," I traced the relief of activity within MBB—following

its contours—to illustrate the ways in which activity was an emergent production, often

bubbling up in felt-response to other participants. In describing the topography of activity, I

also contributed an initial means to move across the multiple levels, or scales, put forth by

those documenting and assessing learning in informal, media-rich settings (Lemke et al., 2015).

Specifically, I followed the contours of activity through an emphasis on rhythm. I focused my

analytic attention on the development of one artifact in MBB—a transit station—to contribute

three ways of moving alongside the rhythms of participation: amplitude/amplification,

propagation, and oscillation. In feeling, sensing, and creating their own rhythms in MBB, I

argue, participants were often transforming place for their own enrichment.

Rhythm, especially, enabled me to follow activity as punctuated by ebbs and flows,

spikes and lulls. Amplification, for instance, gave me a means to trace the accelerations and

decelerations of collective participation; propagation enabled me to follow collective-

individuals as they pursued their own unique, personal flourishes and cycled through

interactional arrangements with the ensemble; oscillation attuned me to the rapid, cycling of

perspectives that participant-avatars enacted when navigating the digital space.

Part of making place, though, is making rhythm. Within urban spaces, as Edensor (2014)

notes, a number of rhythms interpenetrate as people place-make given their own desires and

needs:

> the time-tabled throngs of children walking along routes that converge on schools,
> crossing roads as lollipop men and women arrest the flow of vehicles, often themselves
> conveying children to school, intersect with the routine marches of early shoppers and
> strolling workers, en route to places of employment….the early morning amblings of
> the unemployed or flaneurs of various kinds…Contrast these mobile morning rhythms
> of walking with those of the evening, as shoppers and commuters have already drifted
> back home, and hedonistic crowds of evening clubbers, drinkers, and cinema-goers
> animate the streets of the city with purposive and more exuberant styles of walking. (p.
> 164)

Formal learning settings not only produce their own familiar chronotopes, as Lemke described

in chapter one, but they also produce their own familiar rhythms. Ehret and Hollett (2013), for

instance, tell the story of Tiana, who upon enrolling in their mobile-device-based digital

enrichment course, found herself moving within the school in ways, and rhythms, that she

previous had not. Moving in such a way was "different," she said, "because during school

hours we'll sit the period, stay in advisory, go to lunch, recess, and then go to do the whole

thing [makes circling motion with her index finger] again and again every day (p. 118)." That

circling motion is telling, acting as a form of metonymy representing all the students at Tiana's

school: one finger, one circle.

While my goal is neither to demonize formal learning settings, nor to romanticize

informal learning settings, there were a number of rhythms operating throughout MBB on a

daily basis. As evidenced in chapter five, participants were often geographically distributed

throughout the virtual world, operating at their own rhythms (akin to Edensor's description of children, shoppers, flaneurs and workers), only to come together after sensing the acceleration of activity around a given person or build. I described this shift in participation as amplification. Rhythm-making, in this instance, was also very much related to the ability to sense and respond to accelerating tempos, or amplified scenes. While I've described place-making above as becoming enmeshed into a relational networks, perhaps true place-making occurs when one becomes enmeshed in relational rhythms—sensing, feeling, and responding to others—with the capacity to harness the energy guiding that rhythm towards one's own pursuits.

Chapter six detailed the civic geography in which MBB participants immersed themselves. In that chapter, I put forth civic geographies to imagine civic engagement opportunities for youth that cut across multiple spaces, temporalities, and scales. Through civic geographies, I deliberately sought to introduce a mobile perspective to forms of civic engagement. That is, I followed forms of engaged citizenship that were fluid, that moved through space and time, and that dilated and contracted to macro- and micro-scales, respectively. To specifically underscore the fluidity of the civic geography, I followed the ways in which Neil calibrated his civic practices—helping, guiding, teaching—across server spaces.

Neil's calibration of engaged citizenship across servers was a primary example of place-making. Through his calibrations, Neil brought civic practices from the server he loved playing on, Mariande Realms, into contact with the server he was just beginning to play on, MBB. This calibration, however, was far more involved than making contact between those two servers. When calibrating between the two, Neil commingled specific practices, ways of being, and perhaps most importantly, an affectively-charged feeling of play. Whereas place-making is

certainly about making a "here", "now"—it is also about producing a feeling of being-in-place, about the production of an "intensive space-time" or an "affective atmosphere" (Anderson, 2009, p. 79).

Atmospheres, broadly, envelope. They are a kind of "indeterminate affective 'excess' through which intensive-space times can be created" (Anderson, 2009, p. 80). Anderson (2009) urges researchers to think of how atmospheres are "sealed off through protective measures such as gated communities or certain types of building design. Or how atmospheres are intensified by creating patterns of affective imitation in sports stadiums and concert halls (p. 80)." This envelopment results from the affective intensities that emanate from the assemblage, the-intra-action, of bodies, human and non-human. In the case of a sport's stadium, for example, atmospheres are not only produced through the human bodies present—athletes, fans, vendors—but also through their intra-action with non-human "bodies"—sound effects, bright lights, the scent of popcorn and hot dogs, a cold (and perhaps terrible-tasting) Miller light. That beer, no matter how watered-down, though, helps produce that specific atmosphere.

How do affective atmospheres move and circulate, though? In the case of sports, the best example might be in the re-production of the affective atmosphere of an arena at a local bar. Fans gather, beer is poured; hot wings (in the US) are eaten. TVs surround the space; the volume turned up so as to envelop customers, to produce the feeling of being at a stadium when one cannot actually be at a stadium. The atmosphere of the stadium circulates through bars across the country, its intensity likely felt more, or less, intensely at disparate bars.

In their analysis of one hospitalized youth's video gameplay, Hollett and Ehret (2014), move towards an understanding of how atmospheres move and circulate. First, they detail the ways in which an affective atmosphere of intimacy is produced through the comingtogether, the intra-action, of the darkness the video game coupled with a darkened room, the growl of in-game zombies, and the humming of the Jaws theme by another player in the room. Later instances of gameplay with that youth re-produced this intimate atmosphere, expanding it to include his mother and other caretakers at the hospital. In other words, that intimate atmosphere was mobile, it circulated.

But while their research describes the ways in which atmospheres emerge and circulate, it does not illustrate the ways in which youth agentively, if not deliberately, produce atmospheres for themselves and others. Neil's calibration of engaged citizenship across the servers of Mariande and MBB was an example of this agentive place-making. He produced a visible "here, now" within MBB, actively working to re-produce the ways of being, and the collaborative, helpful-to-newcomers atmosphere on the MBB server. By doing so, he collapsed, or even folded, the "here, now" on to the invisible "there, then" of Mariande.

As I push forward to more direct implications that bring place-making together with pedagogy/mentoring and the design of learning spaces, I want to hold tightly to my guiding constructs of place, mobility, and affect. Thus, in the following, I wonder: How can mentors within informal, media-rich settings foster opportunities for youth place-making? And, furthermore, how can the space itself, and the programming therein, be designed in such a way to promote mobile configurations and circulations?

Pedagogy/Mentoring Within, and Beyond, Informal, Media-rich Settings

Educational researchers recognize that teachers—and non-teachers—carry with them nearly 13,000 hours of "training" from previous experiences in classroom settings. With so much contact time, students become adept at taking "the role" of the teacher, to the point of learning to anticipate his or her behavior. As a result, as Lortie (1975) notes, "unless beginning teachers undergo training experiences which offset their individualistic and traditional experiences, the occupation will be staffed by people who have little concern with building a shared technical culture" (p. 67). Teachers, through this conception, are "self-made" (p. 80) individuals, fusing together previous experiences with on-the-job trial-and-error. Without a shared technical culture—without the belief that teaching is a "shared intellectual possession" (p. 81)—teachers tend to hold fast to biography as they make pedagogical decisions; they fail to acquire new approaches to historically-sedimented pedagogy. In settings like libraries and museums, connected learning is gaining momentum. In doing so, it is becoming the "shared technical culture" of which Lortie writes. But that new "shared technical culture," I argue, is in danger of being co-opted by previous experiences in formal learning settings.

I am concerned about historically-sedimented pedagogy and the ways in which it finds its way into the youth learning programs at settings like libraries. In my development of MBB, and my own experiences collaborating with those seeking to design programs for youth, that historical sedimentation—part of the imagined geography of learning—is hard to disrupt. When initially creating MBB, I wanted to produce something roughly called "social studies," if not "urban planning." I wanted to plot out objectives; I urged participants to build certain edifices, asked them questions that a teacher would ask (And, of course, my own history as an

educator influenced these actions). How do mentors, though, learn to stray from their "lesson plan" that they create for youth at the library? (Or, better, why are they asked for plans, as such?) To become attuned to affective intensities means that mentors must move alongside participants and their interests, following along as participants become lured in by certain components of the experience, be it the excitement expressed by peers, or the opportunity to repeatedly develop an idea, or the desire to re-produce/remix something seen at the library, or online.

Throughout this dissertation, I have continually noted the ways in which I, as a mentor/designer, attuned myself to what moved within—and beyond—MBB, including interests, rhythms, and civic engagement. In chapter four, for instance, I described interest as mobile and fluid—as protean. Participants' interests moved and circulated throughout the duration of MBB in numerous ways. While it is not my intention for a mentor to identify moments of passengering, or mutability, or residue within a given learning setting, I do want to re-imagine what it means for mentors to be attuned to those sparks of interests as their programs progress.

To attune one's self to sparks of interest necessitates loosening what we, as mentors/adults/researchers consider a so-called interest. For example, I designed MBB with the open-world video game *Minecraft* at its core. While I was drawn to a number of *Minecraft's* attributes—including its world-building potential, multiplayer capabilities, and educator-friendly community—I was primarily drawn to it because I knew that my participants were interested in it. I knew there was a robust fan culture surrounding *Minecraft* and that it was a rich affinity space, ripe with potential to study emerging forms of learning. That said, I was

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drawn to the front-end of interest: what I, as a designer/mentor, knew about my participants and their interests.

When I designed MBB, I made the initial mistake of assuming that interest was a finalized entity, that I had done my job, so to speak, by identifying something that my participants enjoyed and built a program around it—a problem, I believe, that plagues the current theory of connected learning. By moving with interest as it emerged in my analysis, I sought to avoid an overt emphasis on *Minecraft*-as-interest. Rather, I began to attune myself to related interests that sparked, those that lured learners toward them and then enabled participants, as Tom once said, to "get in and see how that works." As a result of these initial sparks, participants began to shuttle across a number of participatory competencies (Peppler, 2013), including debugging and decoding; critical practices, like critiquing and reworking media; creative practices, like multimodal composition; and ethical practices, like providing insider information and crediting ownership.

I want to return to Tom, and his desire to "get in to see how that works," as an exemplar of an interest-spark. To recall, I referenced this moment in chapter five, when Tom was lured toward Arthur's transit system. Tom, curious about how the system operated, "open[ed] it up," quite literally by breaking blocks to peer inside. Tom's curiosity led to a back-and-forth with Arthur that enabled Arthur to reflect on the process of the system's creation, narrating out-loud how it worked. This was a rich moment in that it pushed beyond merely observing others' work and commenting on it, but rather provided both the opportunity for participants to see, feel, pull apart, and put back together again.

Tom's "get[ting] in to see how that works" (like Jeremy's "You gotta show me how to do that," from chapter four) could be considered a pop-up learning opportunity: It emerged, in-the-moment, resulting from the amplified scene surrounding Arthur's transit system. While it is worthy to note the ways in which pop-up learning opportunities emerge in informal, media-rich settings, a more pressing question might be: What happens afterwards? Again, in tracing—and designing for—motility (i.e. the potential to move), I am not only concerned with how learning opportunities pop-up, but also with how they "pop-out" and "pop-in." That is, how might mentors harness the energy surrounding those emergent interests and create subsequent learning opportunities around them (pop-out)? And further, how can those opportunities go back into circulation (pop-in), enabling greater opportunity for refinement, or even mutability, by learners over time? In short, pop-in/out learning integrates the mentor into this emergent scene.

Moreover, how do mentors navigate the collective ensemble of which individual learners are a part in these settings? The pathways perspectives adopted by connected learning have continuously emphasized individual trajectories (focusing on academics and careers) with less attention given to the group or overarching project. This emphasis on pathways underscores vertical progression toward some vision of expertise. Pop-out/in learning opportunities signify lateral, or horizontal movement, rather than simply vertical, forward progression. By bringing attention to horizontal movements, mentors can more explicitly link group and project objectives with the individual. An emphasis not only on vertical movement, but also horizontal movement, then, offers a means to trace the emergence of the collective-individual, which I focused on in chapter five.

The pedagogy/mentoring enacted in an informal, media-rich setting is not uncoupled from the design of the learning space itself. By learning space, in this case, I eschew an emphasis on materiality—I'm not concerned with tables, chairs, walls; rather, I focus the following section on the design of informal, media-rich learning spaces, with an eye—and body—toward the "motivated circulations" (Leander & Lovvorn, 2006)—of bodies, things ideas—that they can foster.

Designing for Mobility within Informal, Media-rich Learning Settings

Classrooms and game worlds, Leander & Lovvorn (2006) write, "are not dull and unmotivating merely because they are filled with unmotivated persons. They are unmotivating because they are immobile" (p. 336). If classrooms and game worlds can be "immobile," what does it mean—or better, look and feel like—when those settings are mobile? And how can learning settings be designed in such a way to promote that mobility? Thus, in the following, I evolve mobility from theoretical construct to design principle. To do so, I wonder, especially, how informal, media-rich settings can be designed so as to promote, what Leander and Lovvorn (2006) refer to as "smart configurations" and "motivated circulations." (p. 336).

Throughout this dissertation, I traced movement—of bodies, of things, and of ideas. In the design of MBB, I expanded beyond the library and our room itself, seeking connections to youth interest-powered affinity spaces, like *Minecraft*, enabling youth participants to integrate their experiences—and feelings—from beyond. By integrating authentic urban issues into their gameplay, I sought to further solidify connections to the surrounding community. These connections also led to partnerships in Metro, namely with the local Civic Design Center. Importantly, I also wanted youth participation and learning to be powered by their own

experiences, memories, and feelings related to moving through their local community. Beyond

connections, however, I sought out what Dewey (1899) calls the "free interplay"—mobility—

between what was occurring within our room (and our game) at the library and what was

occurring—and had occurred—beyond.

Additionally, I became highly attuned to what was moving within our setting. Thus, the

ways in which things—experiences, materials, and ideas—came together as "smart

configurations" (Leander & Lovvorn, 2006) has been important to me throughout this

dissertation. In chapter four, for instance, I targeted the ways in participants passengered one

another, how they were moved, pushed, toward each other by their jointly-forged excitement

about working with non-player characters (NPCs) in-game. In that same chapter, I also followed

participants as they moved along with specific ideas, calling it mutability, as well as how they

were pulled toward embedded artifacts, calling it residue. In chapter five, I expanded upon the

ways in which learners were pulled toward learning opportunities, focusing on the rhythms of

their participation. I emphasized, especially, how settings became amplified, and how that

energy propagated through individual participants. In chapter six, I not only followed the ways

in which civic engagement cut across space and time, but also how it dilated and contracted

among scale as well.

I want to highlight one specific example from chapter five as springboard into the

various spatio-temporal configurations that emerged in MBB. There, I described the ways in

which Tom, caught up in the amplified moment surrounding the transit station, began to

rhythmically interact with those in the room by entering into the cycle of individual-collective

work —> direct consultation —> indirect "presencing" —> individual-collective work. The

real virtual space of MBB promoted this kind of social rhythm, this circulation across different "styles of interaction," such as 'face-to-face' conversation, 'hallway' meetings, and greetings, or peripheral or ambient awareness of 'distant' noise or conversation" (Mynatt, Adler, Ito & O'Day, 1997, p. 211).

MBB fostered a number of spatial, and temporal, learning configurations, like this social rhythm within which Tom became immersed. Spatially, this echoes configurations that are found in alternative learning settings, like studios. As I described across chapters four and five, participants often shuttled among individual, paired and collective, or ensemble, arrangements. These arrangements, in turn, produced interactional assemblages that included ways of being affiliated with participatory culture—like seeking out relevant YouTube videos, skipping to relevant parts, and watching and re-watching (and re-watching!)—while also incorporating "pedagogical structures found in more formal studio-based settings, such as demonstration, facilitated workshops, and critique (Sheridan et al., 2015, p. 527). In chapter six, for example, Neil created his own demonstration for Powell, showing him how he could potentially create makeshift chairs out of disparate materials. Other participants would regularly put their work out for critique—asking others to come check it out (both physically and virtually). While these arrangements are micro-versions of those affiliated with art, or architecture, studios they do hint at the spatial arrangements that can move and circulate within informal, media-rich settings.

These spatial arrangements, however, also lead to a variety of temporal arrangements. In chapter six, for instance, Arthur noted how he appreciated that, in MBB "there's no time limit." He took pride in his transit system—which took almost a month to complete—because it

"took its time." While Arthur perseverated over his transit system, other participants opted for projects that could be completed within, for example, one individual session, or even twenty minutes. The temporal structures that we—educators, researchers, teachers—have inherited often dictate the temporal arrangements that we make possible for students. This adherence to ingrained temporalities recalls Lemke's (2004) position on time in formal learning settings, referenced in chapter one:

> Each lesson is divided from those logically connected to it by at least 24 hours, the duration of any activity is limited to 40 minutes, topics change radically every few weeks, extended projects cannot continue beyond a few months, and the critically important relationships between teachers and students are arbitrarily terminated after much less than one year. (n.p.)S

Educators, researchers, and even mentors excel at enabling "pair-work" or "group projects" in formal settings—accustomed to playing with spatial structures—yet we are less comfortable in loosening the temporal constraints to which we have grown accustomed.

Finally, and in acknowledging spato-temporal configurations at a larger scale, I want to close by returning to Neil's calibration of civic engagement across server spaces. Neil's Mariande server was an incredibly important space to him. While media outlets continue to demonize video games, arguing that video games make people more aggressive (Park, 2014)—or not (Stuart, 2014)—those outlets have placed less attention on forms of engaged citizenship occurring in gaming, and other digital media, venues. By observing forms of engaged citizenship by Neil on his Mariande server—and following them as they circulated back into MBB—I described how engaged citizenship operated at a scale much larger than our program, and much larger than the city of Metro. Neil was not only calling out language infractions on this (global) server, but he was also actively petitioning for friends who had been

banned or muted on the Mariande there. He was not only hoping to take on a leadership role

with his friends, but was also mentoring newcomers both on Mariande and MBB.

Neil demonstrated a reversal of what Gee (2003) calls a projective identity: the ways in

which gamers "project" their identity onto their virtual character during gameplay (e.g. I'm a

nice person in the real world thus I will make my in-game character a nice guy, too). In Neil's

case, the identity that he established on the Mariande server spilled out and into the real virtual

identity he was creating for himself in MBB. Without getting mired in issues of identity, Neil

did not just project an identity, but circulated his identity. This circulation of identity, for Neil,

was an incredibly "motivated circulation" in that he was very deliberate in how he presented

himself across servers, acknowledging that he wanted to become a part of the leadership team

on Mariande—and applied for that role later. Without co-opting, or colonizing, youth game

spaces, I wonder what circulations can be designed into informal, media-rich learning settings,

like libraries, that do not just move through formal, so-called "social networks" (e.g. YouMedia

Chicago's iRemix)? What opportunities are there for "smart configurations" that bring together

"global" servers with "local" participation? How can real/virtual hybridities be designed that

enable traversals for learners, rather than isolating, or cutting them off, from one another?

Closing

> Life will not be contained, but rather threads its way through the world along the myriad
> lines of its relations. (Ingold, 2007, p. 103)

This dissertation has not been about seeing movement for movement's sake. Rather, it

has approached mobility as a means to break free of the "straightjacket of container thinking"

(Thrift, 2004), to re-imagine, and remap, the learning geographies of youth. Through an

emphasis on place, affect, and mobility, I recognize—and believe—that despite the fact that

"everything is moving," youth make a "here, now" for themselves, weaving together

experiences, feelings, relationships and resources across space-time.

But an emphasis on mobilities recognizes a much larger paradigm of thought that

stretches across the social sciences and humanities, bringing together research in sociology,

geography, history, anthropology and communication studies. This paradigm has sought to

disrupt the "a-mobile" nature of social science research, or how the social sciences have failed

"to examine how the spatialities of social life presuppose (and frequently involve conflict over)

both the actual and the imagined movement of people from place to place, person to person,

event to event" (Hannam et al., 2006, p. 208). Still, educational scholarship has been slow to

move, so to speak, weighed down by geographically confined approaches to learning born

from the lineage of behaviorism, instructionism, situated cognition and more. The new

mobilities paradigm reconfigures the social—the foundation of sociocultural learning—as

"mobile, with many aspects of social life, civil society, and political participation increasingly

understood as being performed through mobilities" (Adey, Bissell, Hannam, Merriman &

Sheller, 2014, p. 3). Rather than accumulating learning settings, however—as much learning

scholarship continues to do—I have questioned what was happening through that journey from

one place—or even within one place—and another. Following mobility scholars, I have asked—

and will continue to ask—questions such as:

> How were different mobilities involved in making people's lives meaningful? How were
> these mobilities meaningful in and of themselves? How was all this mobility inherently
> uneven and unequal? And how might attending to such questions require different
> modes of analysis and critique? (Adey, Bissell, Hannam, Merriman & Sheller, 2014, p. 3-
> 4)

These questions are a way forward toward the remapping of youth learning geographies. Although educational scholarship recognizes that learning traverses settings, it continues to define those learning opportunities (including, afterschool, informal contexts, and flexible/alternative school programs) either in relation to—or against—the learning opportunities provided by school (Vadeboncoeur, 2014). Positioning those so-called informal contexts in such a manner not only continues to dichotomize school and not-school (Sefton-Green, 2013), but also cuts off movement between those settings, rendering those settings "a-mobile," still, and sedentary.

Furthermore, a remapping of youth learning geographies destroys the solidity of "transport" models of learning (Ingold, 2011). Transport models, I argue, plot out potential learning settings for youth, whether informal or formal, emphasizing the "point," as opposed to the "line." Thus, these models are destination-oriented. Connected learning, I have noted, is dangerously close to this transport model, signaled by its accumulative discourse of settings (i.e. "Schools, homes, afterschool clubs, religious institutions, and community centers" [Ito et al., 2013p. 8]). By remapping learning geographies, we—researchers, teachers, mentors, students—must adopt an approach to learning that follows the "wandering lines", or "efficacious meanderings" (de Certeau, 1984, p. xviii), along which learning develops, moving alongside learners as they move within—and between—settings. For Ingold, these lines emerge through the act of wayfaring, of being "continually on the move" (p. 75). Wayfaring "is neither placeless nor place-bound but *place-making*" (p. 101, my emphasis). Mobility, in this case, is not a matter of moving from destination to destination, but rather the very experience

of movement, of the path traveled. Transport models adhere to socially constructed

spatiotemporal scales that, in turn, bracket our conceptions of learning. They dictate where—

and when—we believe learning occurs. As researchers, we often put our own straightjackets on

ourselves (How many of us conduct research after, say, 6PM?). Why, as Lemke (2001) asks, "do

we observe students on the timescale of the lesson, inside the math classroom, and not follow

them out the door, down the hall, to another classroom, lunchroom, street corner, work, or

home?" (p. 20).

By remapping youth learning geographies, I argue, we regain the sense of "in-

betweenness" through which learning transpires. Remapping learning geographies

necessitates following, moving with learners (and ideas, and things) as they move within and

beyond physical and digital spaces. Learning (and the research of it) is not bound, contained,

but rather continuous (Dewey, 1938). While some children, Vadeboncoeur (2014) writes

> may piece together learning opportunities across diverse contexts and experience a
> semblance of continuity in spite of a fragmented system, reimagining education
> holistically may be the impetus required to begin to organize learning more
> intentionally. (p. 344)

We reimagine education holistically by remapping the learning geographies of youth that have

haunted us for years: those same geographies haunted Dewey in 1899. To enable learners to

"piece together learning opportunities across different contexts" is to enable them to place-

make across the "fragmented system"—to actively negotiate, and subsequently transform this

place for their own enrichment.

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Appendix B

Program Remix Worksheet (made by A.S)

Program Title:

_____

Describe your program:

Interest-powered draft questions:
Why did you decide to do the program?
What interested teens about the program?
How could you tweak this program to focus on an interest of a particular group of teens?

Peer-supported draft questions:
How could teens work together and provide each other with feedback?
How could you incorporate remote teens (from a school class another library, etc.) into the program and how
   could the group work collaboratively?

Academically oriented draft questions:
How could the program contribute to teens' present and future academic success?
How could you connect the workshop to a school library or classroom or another formal learning opportunity?

Production centered draft questions:
What types of works/products/projects could teens create in the program?
What skills would teens need to have before/learn during the workshop in order to create
something?

Shared purpose draft questions:
Is there any cross-generational learning that can take place (can you also learn from them)?
What would the shared goals of the project/program be among all participants?

Openly networked draft questions:
How could the program/project be linked to school, community, home, other locations?
How could the program connect learning across places like community centers, school, home,
   and the library?