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Digital Geographies

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Relevance

In this chapter, we theorize and explore the production of digital geographies as essential everyday literacies with import for learning. In doing so, we conceptualize literacies as fundamentally social meaning-making practices that include the reading and writing of all kinds of texts, and we see these practices as inevitably mobile. As Leander, Phillips, and Taylor (2010) note in their brief analysis of Heath's (1983) seminal ethnography of literacy and learning in two communities in the Piedmont Carolinas, even literacy practices that we might think of as "local" are run through with crisscrossing cultures, histories, people, texts, practices, and things on the move—and always have been.

While we understand literacies to have always been mobile, more recent developments and technologies have untethered digital literacies in new and emerging ways. What is different about contemporary meaning making and writing practices and what is developing differently through emerging mobile technologies is the possibility for the virtual intertwining with the physical world and with everyday life as people interpret the world and write in the world. Examples of these intertwinings as people interpret the world include (a) geographic information overlayed on city streets through a Global Positioning System (GPS) device or smartphone to support decision-making related to traveling in the world, or (b) geofences that enable notifications on travelers' mobile devices of nearby friends or of historically important buildings while walking through a city. And examples of these intertwinings while writing in the world include (a) recording video and audio of police interactions with citizens, or (b) creating and remixing media on-the-go to be shared with social networks (see Leander & Vasudevan, 2009). We argue that these imbrications of virtual and physical in the reading and writing of the world can be productively theorized as digital geographies and that conceptualizing digital geographies as emerging and essential literacies on the move impacts educators, designers, and researchers in investigating and designing everyday teaching and learning.

Our conceptualization of digital geographies complements contemporary efforts in literacies studies to attend to meaning making on the move and draws from ongoing scholarship in geography, literacy, mobility studies, and media and communication studies. Our intention is to bring these interdisciplinary approaches into conversation to inform digital writing and literacies research and teaching to both support ongoing work and to point to new possibilities. In doing so, we are particularly interested in articulating how digital geographies research can respond to the ways that learners and learning are often constrained to cordoned-off spaces of formal learning in schools.

We first articulate key concepts from across these disciplines as they have informed our research and teaching, turn to examples from current and emerging theory of digital geographies, highlight specific exemplars of writing within digital geographies, and offer a way forward for research, namely through the relationship between writing and place-making.

Key Concepts: Mobilities and Digital Geographies

Mobilities

We begin with an overarching focus on mobilities, building toward the relationship between mobility and digital geographies. Digital geographies, we will argue, are fundamentally mobile. This mobility, however, depends on moving bodies that sense and feel as they move, especially with various things. In conceptualizing bodies on the move as mobilities, we are not abstracting bodies (Seiler, 2009). Instead, we intend bodies to be understood as human bodies engaged in interactions in the world in which identities including race, gender, sexuality, age, and dis/ability are consequentially read and produced in everyday human interactions that involve feeling, sensing, touching, and moving. We further articulate components of mobilities below.

Emerging approaches to mobility stem from recent shifts in human and cultural geography toward the "new mobilities paradigm" (Hannam, Sheller, & Urry, 2006). Naïve approaches to mobilities assert that everything is on the move and that contemporary culture is one of rapidity and 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, 2014, p. 3). In studying social life as mobilities, geographers, historians, and anthropologist shifted from fixing their work on "the field" to following their work along "routes" and 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 and abstracted from moving, feeling, racialized bodies—both theoretically and methodologically. It seeks out fluidity as opposed to fixed, contained territories.

Mobilities also underscore the phenomenological experience of the moving, sensing human body. This entails attention to the corporeal engagement with other bodies and technologies, practices of movement (e.g., biking, walking), events of movement (e.g., commuting, sitting in traffic), and implications for movement (e.g., racialized practices of mobility; Nicholson & Sheller, 2016). A number of studies have sought to understand how bodies engage with and actively move through their surroundings, ranging from kinesthetic sensation produced by human-bike-road (Spinney, 2006) to the "micro-mobilities" of dancers, rock climbers, and walkers (Fincham, McGuinness, & Murray, 2010).

The new mobilities paradigm has undergone recent 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, he provides additional nuance to mobility, arguing that "mobility involves a fragile entanglement of physical movement, representations, and practices" (p. 19). Physical movement, he clarifies, denotes the physical act of moving from one location to another; representations of movement give that movement a shared meaning (e.g., threatening, adventure); practices signal the embodied act of mobility that it can feel different from one day, or even one hour, to the next. Importantly, mobilities are produced by, and productive of, power (Cresswell, 2016).

Digital Geographies

Mobility studies have informed interdisciplinary studies of interpenetrating digital and physical spheres. In the following, we review some of these studies, in order to develop a more holistic understanding of the imbricated—simultaneously digital and physical—nature of digital geographies and implications for reading and writing across digital geographies. Importantly, many of these studies challenge how cyberspace was originally formulated as an alternative to the physical world, a "consensual hallucination" that existed in the mind (Gibson, 1984, p. 69). This early conception, from Gibson's (1984) novel *Neuromancer*, has fed the public tendency to divorce the digital from the physical and to remove it from the material world as something into which one can escape. To enter cyberspace, Case, the novel's protagonist, "jacks into" a computer via neural implants, leaving his body and entering the world of information. This "hallucination," in part, stems from the invisible nature of the infrastructure, which supports the so-called cyberspace: the fiber-optic lines in ceilings, the hidden server centers, the underwater cables. This kind of invisibility has led to the "erroneous assumption that cyberspace is somehow immaterial, aspatial, and nongeographic" (Zook, Dodge, Aoyama, & Townsend, 2004, p. 158).

There is an evolving history of scholarship and theory, however, that views cyberspace as an "additional layer of function and access that maps onto physical space" (Zook & Graham, 2007, p. 467). Wakeford (1999), for instance, described the "overlapping set of material and imaginary geographies which include, but are not restricted to, online experiences" (p. 180). Mitchell (1995), in describing his "city of bits," envisioned code, the digital, to be just as important to physical spaces as bricks and mortar, as road and sidewalks. Both Wakeford and Mitchell, among others, provide early arguments for the inextricable nature of the digital and physical. Cyberspace and place are "intricately connected in a dynamic and mutually constitutive process" (Zook & Graham, 2007, p. 468).

A more recent line of thought focuses on the digital palimpsesting of physical locations (Graham & Zook, 2011). It considers how the digital adds a new layer to an understanding of place. As opposed to emphasizing how people make place online, it details how they use online activity to layer digital material over the physical world. By doing so, these digital representations of physical places shape not only how we interpret but also how we interact and write with the world.

Those early years of the Internet—concerned with the making of physical locations for people to "jack in" to digital arenas—have given way to or augmented realities. Graham, Zook, and Boulton (2013) move beyond describing how the digital mediates our interactions with space and toward how geographically referenced, or geo-located, content (images, text, video) shape our relationships with lived geographies. For them, the "visual, interactive, real-time nature of digital augmentations offer a fundamentally new way of interacting with, moving through, and enacting place" (p. 2). Geospatial content, though, is decentralized: User-generated data—Wikipedia articles, Twitter posts, YouTube videos—contribute to representations of place. In the following, we build from this line of thought, bringing together this focus on digital augmentations of the world with how people read and write it—especially with mobile bodies and mobile technologies.

Digital Geographies, Literacies, and Writing

In an era of primarily sedentary technologies, Leander (2008) nudged literacy research toward the study of digital geographies, arguing that "the time for thinking about the Internet and digital literacies as revolutionary has passed" (p. 33). He questioned how literacy scholars think about the everyday, calling for an end to the bifurcation of digital and physical activity. Overall, Leander (2008) questioned the employment of traditional ethnographic methods in online spaces, aiming to build a methodological approach that assumes "that people routinely build connections to Internet-related

practices and sites and myriad offline practices and sites" (p. 36), that moved "ethnography from a place-bound practice to a moving, traveling practice" (Leander & McKim, 2003, p. 237). Still, this conceptualization occurred in a technological era in which users built those connections from sedentary positions: from an Internet café or from home, for instance. Interpreting, engaging, and writing on the Internet, in this case, was certainly built across space-time, but that digital physical binary was still present. This, we argue, is the difference between networking literacy across digital-physical space-time and experiencing literacies and writing within digital geographies.

Literacy research has explored hybrid digital and physical spaces in diverse ways. Across multiple analyses, Vasudevan (e.g., Leander & Vasudevan, 2009; Vasudevan, 2010) has explored the literacies, learning, and digitally mediated lives of "court-involved" youth, focusing on the "landscape of multimodal literacies and digital practices involved in composing of meaning and diverse texts for a variety of purposes" (Vasudevan, 2010, p. 62). Vasudevan explicitly theorizes the productions of these multimodal textual landscapes, produced by young people moving throughout their lives "through the confluence of new communicative practices and available media technologies" (p. 62) as digital geographies. For Vasudevan, digital geographies conceptually highlight textual production and literacies practices that cross online and physical spaces.

Digital geographies signal an important shift from *crossing* to *imbrication*. Burnett and Merchant (2014), for example, drew attention to the relationship between the on- and offline in a classroom, specifically describing literacies that occur from within and outside of a virtual world. They employed a connective ethnographic approach to explore the youth literacy interaction that takes place within the virtual world, seeking multiple perspectives of literacy events (although they trouble that term), telling stories from inside the classroom as well as from inside the virtual world. To do so, they reflected on understandings of "fractional objects" to understand these layered activities. As Law (2004) details, fractional objects are "phenomena that occupy more than one dimension but less than two" (Burnett & Merchant, 2014, p. 43). Burnett and Merchant (2014) build from this language: "Incidents, individuals, objects or places are not completely in either the material or virtual world, and nor do they jump between" (p. 43). Instead, they argue, scholars can understand digital literacy events "in terms of a multiplicity that 'implies that different realities overlap and interface with one another. Their relations, partially co-ordinated, are complex and messy' (Law, 2004, p. 61)" (Burnett & Merchant, 2014, p. 43).

Moreover, research within the literacy community has explicitly explored the digital geographies affiliated with the pervasive computing paradigm. Vasudevan (2010) highlighted the compositional capabilities of mobile devices that youth embrace as they move through their worlds. She detailed the use of a PlayStation Portable (PSP) by one youth, Joey, as he created a multimedia narrative. Vasudevan attended, in particular, to how Joey's multimedia narrative took shape as he moved with the device. He was able to compose whenever—and wherever—he wanted: "while riding the subway, at the park, at home, attending the digital media elective" (p. 71). The portability of the device—the fact that it moved with Joey—allowed him to present a self that was variegated, one that was dynamic and that changed from place-to-place.

Buck's (2012) inquiry into Ronnie's digital literacy practices on social networking sites was also rife with mobility. Ronnie used his mobile device to document—and share—artifacts across time and space. Of Ronnie's movement with his mobile device, Buck writes: "On his walk to class, Ronnie takes a picture of some graffiti in front of a local restaurant and sends it to Twitter" (p. 9). Later, Ronnie used his device to film a twelve-second video of a squirt gun fight with friends and posted it to multiple social networks. Ronnie often composed on the move, frequently tweeting his "thoughts and musings on his way to class" (p. 16). When writing on the move via social media, he painted a temporal and spatial portrait of his day for his followers, making his audience aware of his location as he moved from place-to-place.

Similarly, Ehret and Hollett (2013) described Yvette and Adela's experiences of moving—and writing—with mobile devices in a school setting. They detailed how movement affected Yvette and Adela's meaning making as well as their experiences of and connections to people, places, and things in their school. Specifically, they focused on how Yvette and Adela (re-)placed school through the countermobilities, or how they moved against the typical mobility scripts associated with school.

Exemplars of Writing within Digital Geographies: Layering and Augmenting Place

The following sections expand this focus on writing—with mobile bodies—by describing two exemplars of the experience of writing within digital geographies. The first focuses on the emergence of digital representations of physical places—new ways of, quite literally, "reading and writing aspects of the world that are important to participants" (Knobel & Lankshear, 2003/2011, p. 262) in these digital-physical activities. This section describes what we refer to as layering place as it explores digital mapping practices within online communities and how they are emblematic of writing within digital geographies. The second section focuses on the reading—or augmentation—of those physical locations through digital means and the writing that follows. It focuses on augmented reality installations and activities. We refer to this as augmenting place.

Layering Place

The digital layering of place stems from three successive moments in the development of Internet practices and technologies as described by Graham et al. (2013, pp. 465–466): (a) the move toward mobile devices and the mobile web, (b) the growth of authorship via Web 2.0, and (c) the emergence of the geospatial web, or the geo-coding of web content to specific parts of the Earth. The shift from Web 1.0 to Web 2.0 allowed users to begin to reimagine, or even reexperience, physical places with digital material. Two ways in which this (re)imagining occurs today are through the practice of neogeography and volunteered geographic information (VGI). The following subsections, then, detail new emerging participatory practices that are influencing the relationship between people and places through digital/physical interaction. They act as exemplars of literacies and writing experiences within digital geographies, how digital interpretation and production practices are intricately tied with physical locations, interlocking the physical and the digital in place.

NEOGEOGRAPHY

Neogeography refers to techniques, practices, and tools typically reserved for geographers but employed by nonprofessionals (Turner, 2006). Hudson-Smith and Crooks (2008) describe neogeography as:

> a diverse set of practices that operate outside of or alongside…the practice of professional geographers. Rather than making claims on scientific standards, methodologies of neogeography tend toward the intuitive, expressive, personal, absurd, and/or artistic, but may just be idiosyncratic applications of 'real' geographic techniques.
>
> (p. 3)

Neogeography blurs "the distinctions between producer, communicator, and consumer of geographic information" (Goodchild, 2009, p. 82). The practice of neogeography, as Dodge and Kitchin (2013) label it, is an act of prosumption. Prosumption is a form of consumption/production in which users take part in both the creation and subsequent use of service. People, for instance, no longer purchase

premade maps; rather, they "prosume"—they produce and consume their own maps. They access free mapping tools and customize maps for their own purposes: They shape the "representational 'look' of the map interface, undertake elements of spatial analysis, and, crucially, add to and edit the actual base cartographic information" (p. 35). While cartographic prosumption, though, necessitates a variety of complex literacy practices—setting the frame of their map, changing the scale, content, legend, orientation, and color scheme—it also hints at the embodied, sensed account of literacy that we affiliate with writing within digital geographies.

One of the creators of an early mapping website, Platial.com, illustrates the impetus for taking part in such mapping practices. In this instance, she describes making maps for guests visiting in Amsterdam:

> We made them maps, like everyone does, of the basic neighborhood amenities. If our guests wanted to go do some errands, it's handy to have a map with more than just museums and shopping malls on it. There was the grocery store, the post office, the good bakery and the locals' lunch spot, plus the place to watch the barges come around the canal, the place where the blue heron hangs out on the parked cars and the place not to lock up the bikes...we ended up with a kitchen drawer stuff full of these notes. It was our collection of Places...
>
> (Graham, 2010, p. 425)

In this case, the map producer has performed various forms of embodied meaning making in order to develop her map for a consumer: She plots based on, perhaps, the taste and aesthetic of the bakery, the views of barges that are most pleasing, what she considers to be safe areas for bikes. As such, the map itself depends upon her body-based accounts and her reading of the world and translation of it into visual representation.

But neogeographic practices are not solely contained to casual map-making. More recently, neogeographic practices have been applied to create mash-ups of data and maps, particularly during times of crisis (Liu & Palen, 2010). Crisis mash-ups aggregate real-time news from social media sites, like Twitter, and index them to their originating geographic location on a map. Often, the original source for this information is a user with a mobile device, experiencing an event in real time (e.g., a natural disaster). Crisis maps depend upon bodies-in-world. They depend upon sensed, felt places, which become represented via, for example, tweets and geographic coordinates. Those sensed-movements are then distributed to a geographically distant actor who manages the data, wrestling with the information as it pours in, creating the map that further shapes how others move through and interact within a physical space.

The greatest contributing factor to the development of neogeographic practices has been the significant adoption of GPS by consumers. GPS has enabled nonprofessional geographers to create spatial data. The portability of GPS technology, now embedded in mobile devices, has encouraged forms of mapping that are unique to individuals; it has transformed "everyday movements into creative expressions" (Parks, 2001, p. 220) that users can now share with others. Those who provide this place-based information volunteer their geographic information, making it available for others to visualize, use, and mash-up.

VOLUNTEERED GEOGRAPHIC INFORMATION

If the term neogeography denotes how interactive mapping software makes cartographic production practices (i.e., map writing) available to new actors, then VGI denotes the data itself, how data are generated and used by producers and consumers as part of everyday practices of digital writing. As Elwood (2008) writes of VGI: "New forms of digital spatial data are created through a growing

proportion of our daily activities, such as using electronic payment cards to board a bus whose location is tracked by the public transit agency, or using GPS-enabled cell phones that trace our location and movements throughout the day" (p. 133). The use of new technologies—ranging from Google Maps to Wikimapia to our own GPS-enabled smartphones—has led to new volunteered digital spatial data that detail the observations, geographic knowledge, physical location of people, and more.

Mobile bodies feel and sense their surroundings, generating and subsequently mapping data as they move. Wikimapia, for example, and the data added to it is an exemplar of VGI (Figure 12.1). Wikimapia allows users to click any portion of the Earth's service, evidenced below in Nashville, Tennessee, in the US, and provides a description of it. Other users can edit entries; volunteer reviewers moderate entries, checking for accuracy and authenticity. Entries range in details—some including hyperlinks to more information, others, like a description of the water treatment facility in Nashville, noting that the area "smells bad"—an account dictated by the sensed, embodied, even affective, experience in a specific physical location.

Another form of VGI, OpenStreetMap (OSM; Figure 12.2), a collaborative mapping project, allows users to add, edit, and correct geographic data. Contributors to OpenStreetMap "use aerial imagery, GPS devices, and low-tech field maps to verify that OSM is accurate and up to date" (OpenStreetMap, para. 1). The image below depicts a prominent building in Nashville and its surrounding area. A user could conceivably add any of the features on the left side to the map—regardless of their veracity.

As an exemplar of writing within digital geographies, the layering of place is intricately bound within both new technologies and new activities. Unlike current conceptions of new literacies (i.e., participatory, distributed, cyberspatial), these practices are intricately tied to the physical world, to one's locality. Operations like OSM and Wikimapia—as an extension of current conception of new literacies—call for "interesting new constellations or 'batteries' of ways of reading and writing in order to achieve one's purposes" (Knobel & Lankshear, 2003/2011, p. 264) as a neogeographer. For example, OpenStreetMap users not only sense the world around them, recognizing new roads,

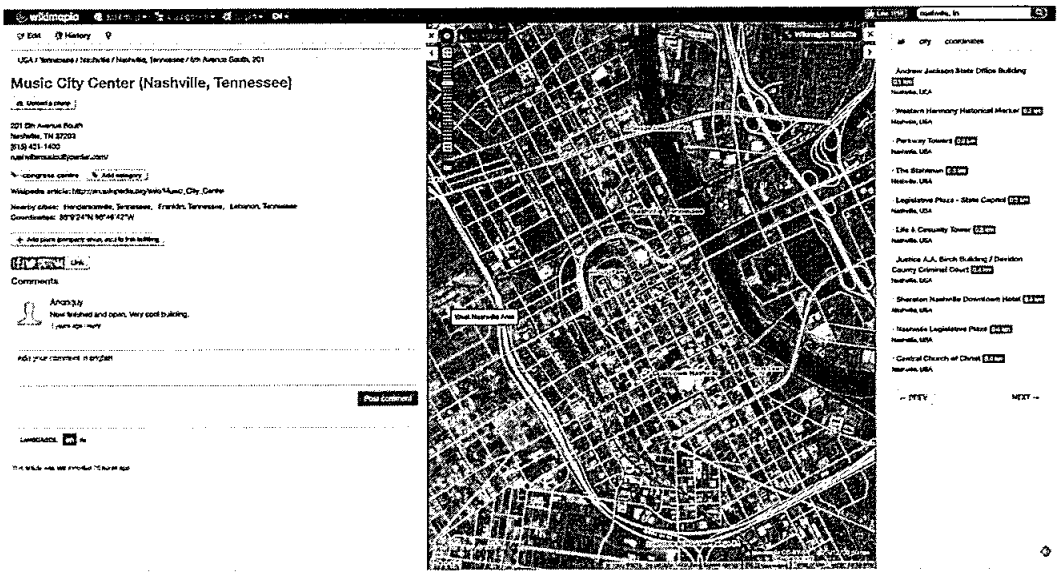

Figure 12.1 An example of Wikimapia. Registered users can edit the map, adding comments, resizing areas, and add and delete information over time

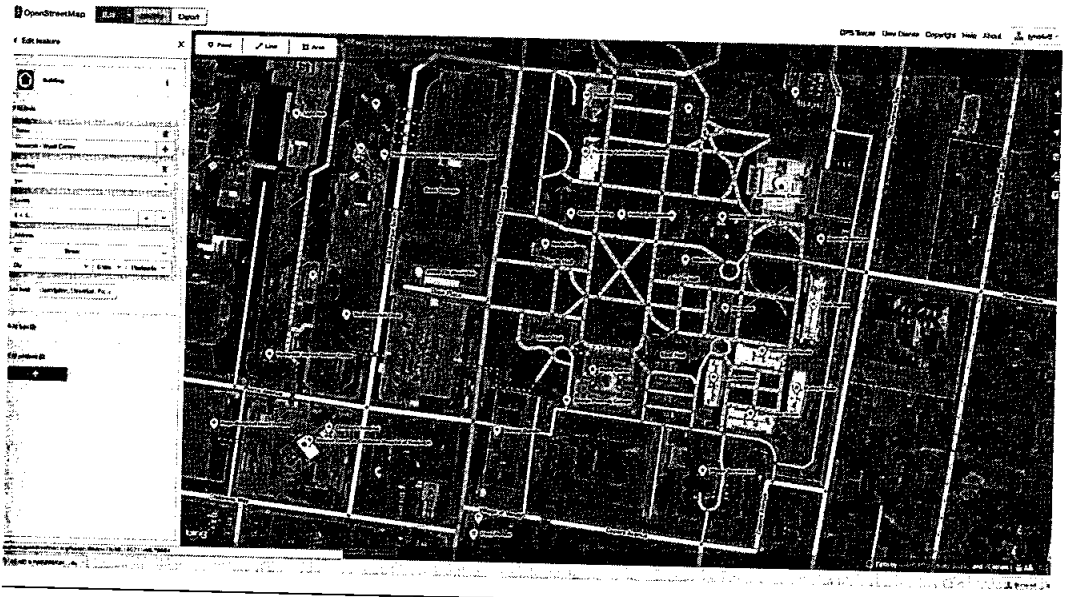

Figure 12.2 An example of OpenStreetMap, an ongoing project to provide the most accurate, usable maps rather than comments about locations

one-way streets, and hazardous areas but also upload that data—either from on-the-ground experience or GPS track data—to the OSM server. Members of the community, then, might defend changes they made to the map in a forum or describe them in a blog post. For instance, one contributor, with the handle "numbfew," described his recent edits to the map in an OSM-affiliated blog post (numbfew, 2013). He detailed the changes made, many of which depended upon his sense-movement through the physical/digital world, including the following:

- Added footpaths in local suburb and surroundings (Weston Creek);
- Added some green spaces;
- Minor fixes of redaction things when it happened.
- Parliamentary Triangle. Including memorials in Kings Park/Commonwealth Park.

Numbfew's edits are based upon his embodied, felt-experience—and subsequent construction—of place. At the same time, numbfew's edits further contributed to the experience of place for others. By layering digital information onto the map, he shaped how other users would navigate—and sense—their surrounding environment. The digital and physical recursively shape one another. OSM and other mapping environments demand new forms of reading and writing the world—a new ethos that goes beyond the digital media space afforded by previous, sedentary technologies. Within digital geographies, digital literacy practices are never solely digital—they are a complex interaction between the digital and the physical.

Augmenting Place

In this section, we detail literacies and writing practices affiliated with digital geographies that stem from locative media initiatives. With continually evolving advances in mobile technology, location, as Gordon and de Souza e Silva (2011) argue, sets the "conditions for interaction and provides

the context from which information is interpreted and used" (p. 12). Location-based technologies (e.g., WiFi, GPS, bluetooth) and locative media—mobile devices with the ability to recognize location—help users shape, better understand, and describe experiences of place. Aside from consumer-based applications like Four Square and Yelp, users take can part in location-based narratives, games, and art pieces that depend upon digital interaction with urban spaces. In the following, we survey locative media experiences as exemplars of literacies and writing practices in digital geographies.

Locative media have also allowed users to take part in forms of urban annotation or public authoring. *34 North, 118 West* (http://34n118w.net) was billed as the first locative media project to fuse location and mobile computing. Given a GPS-enabled tablet computer and headphones, participants maneuvered themselves through an area pre-configured with location-driven digital artifacts. As in other augmented reality experiences (e.g. Facer, Furlong, Furlong, & Sutherland, 2004), walking over hotspots would trigger pieces of the narrative—in this case, the history of the railroad industry in Los Angeles. Actors spoke and described events that occurred during that time relating to the physical location. By participants' movement through the urban landscape, "lost versions" of the city were recovered (Hight, 2003).

Similarly, Berry and Goodwin's (2013) "Poetry 4 U Project" links location and verse. Using GPS and other location-based technologies, participants pinned digital poems to physical locations using their mobile devices. Seeking new relationships between the "virtual imagined city and the geographic city" (p. 916), the project questioned how digital poetry could become a part of the cityscape. Acknowledging literature that argues that mobile devices "push a specific place into the background of perceptions" (p. 914), the project sought to further enhance a reader—and poet's—sense of place. The creators aligned this project with other professional communities of practice for writers (e.g., peer reviewed outlets for poets) in hopes that it would encourage writing that was both a part of the "space of social flows as well as a geographical place" (p. 927).

Mobile storytelling exploration seeks to establish community in public spaces, rather than the isolation often attached to mobile devices. One project, called *[Murmur]* (n.d.), seeks to retell community histories based on certain locations. [Murmur] locations are designated by green, ear-shaped signs that have a specific phone number on them. Passers-by can then call the number to hear the recorded stories. Through their recordings, community members contribute to "site-specific histories of the cities" (Farman, 2012, p. 117). A final example, Vozmob (n.d.), is a "platform for immigrant and/or low-wage workers in Los Angeles to create stories about their lives and communities directly from cell phones" (Vozmob, n.d., para. 1). The intention of Vozmob is to mobilize the highly mobile, to give them a voice and a space for it to be heard. Posts range from pictures and text about the police, to cultural events, to demonstrations and street performances.

Locative media, neogeography, and VGI are closely related. Where neogeographic practices leverage VGI for mapping purposes, locative media projects leverage that information for narrative purposes. Locative media, like neogeography, calls for new reading and writing practices. They are projects that depend upon the interaction of the digital and the physical. Furthermore, for participants, locative media projects necessitate not only the reading of the word but also the reading of the physical world. They depend on mobility through the world, on users' simultaneous navigation of representations of the world through maps as well as their own embodied experience of the world. In this section, the "new technical stuff" of mobile devices engender "new ethos stuff" of locative media (Lankshear & Knobel, 2007, pp. 7–9). The reading and writing of texts in place, however, are fully dependent upon the context in which they are experienced. Such experiences, then, are much less like the literacy events with which literacy scholars are most familiar, and more akin to place-events (Massey, 2005), or "intensities of activity and presence, as experienced by embodied human subjects, from specific subjectivities" (Pink, 2011, p. 349).

Forward Thinking: Place, Writing, and Digital Geographies

In thinking about the relationships among place, digital geographies, and writing, we are most drawn to studies of place-making as a way forward. The digital lives of contemporary youth exist in neither physical nor digital space; rather, youth are mobile—and mobilized—within digital geographies. We are particularly drawn to Massey's (2005) take on place as being "throwntogether," as consisting of diverse stories or "bundles." 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, 2011, p. 58). Pierce et al. (2011) particularly emphasize place-making as "bundling." Bundling, they write, occurs through both conscious and unconscious acts. 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 et al., 2011, p. 59).

De Certeau (1984) also offers useful insights into how people make place. He details the "procedures of everyday creativity" (p. xiv) people perform, especially as they move across the grid of the city. 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, the physical, embodied movement of the human body through space begins to produce place: "Their intertwined paths," de Certeau (1984) writes,"give 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. 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.

In terms of literacies, we wonder how writers place-make through the imbrication of the digital and physical. How do writers make place as they move through it? In what way do traces of writing, digitally sedimented in place, impact how others are mobilized? Who becomes integrated into ones' experience of place? In what ways do writers speak back to or subvert powerful authorities? How might they embed data into place for others to access?

We are especially interested in place-making as a response to structural and institutional racism that has perpetuated what Martin (2011) has called "white institutional space" in schools and elsewhere. While digital geographies, like geographies of all kinds, can and do perpetuate structural and institutional racism, place-making has the potential to empower learners to respond and remake

place. We are interested in how writers' mobilities across digital geographies are impeded and constrained by aspects of identities including age, race, gender, sexuality, and dis/ability and how writers might speak back, push back, move back against these constraints.

However, in considering the possibilities of pushing back against constraints, we want to also recognize that for racialized bodies on the move in the world, negotiating digital geographies involves not necessarily possibilities for movements against constraints but the realities of those constraints as dangerous, terrifying, and potentially life threatening. As an example, consider not only how people can read and write the world on the move while engaging in a widely popular augmented reality application like *Pokémon Go*, but also how the very bodies of people/players/learners on the move are read and written by others. The mobile game *Pokémon Go*, which demands one's movement through space with mobile device in hand, encourages players to move through their local surrounds in order to increasingly capture more Pokémon—virtual creatures that can be found while moving through the physical landscape. Blogger Omari Akil, an African American man, wrote about his experience of playing *Pokémon Go*—and moving—as a Black male in the US in 2016:

> I spent less than 20 minutes outside. Five of those minutes were spent enjoying the game. One of those minutes I spent trying to look as pleasant and nonthreatening as possible as I walked past a somewhat visibly disturbed white woman on her way to the bus stop. I spent the other 14 minutes being distracted from the game by thoughts of the countless Black Men who have had the police called on them because they looked "suspicious" or wondering what a second amendment exercising individual might do if I walked past their window a 3rd or 4th time in search of a Jigglypuff.
>
> (Akil, 2016, n.p.)

While place-making certainly provides opportunities for writers to empower learners to respond and remake place, the opportunity to do so for all writers is systemically constrained. Echoing Akil's experience, Black mobilities "in the context of the United States need to be interpreted contextually" (Cresswell, 2016, p. 21). Whiteness, Cresswell continues, has primarily depended on the privilege of mobility. The pathologization of, especially, Black male bodies "underlines forms of white privilege as white bodies remain (relatively) less likely to be stopped, penalized, rerouted, slowed down, or moved on" (p. 22). This privilege of White mobility runs in stark contrast to deep history of mobilities—and immobilities—that have been forced upon Black bodies.

In the end, and to bring these questions into contact with Massey and de Certeau, respectively, we wonder how youths' literacies and writing practices enable them to "make a here, now" for themselves, how they make a smaller "less," from, what can be, an overwhelming "whole." And we wonder how we as teachers, researchers, and designers can support, empower, guide, mentor, teach, and love in ways that recognize and respond both to the promise of contemporary digital geographies and to long-standing inequities that restrict who can move, where they can move, how they can move, at what speed they can move, with what things they can move, and at what time they can move across digital geographies.

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