Mobile Learning in an Age of Surveillance: The Urban Subversive as Pedagogical Position

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Abstract

The inherent lag between the rapid development of mobile technology and 'the more gradual evolution of rules governing its use' (Castells et al., 2007) has generated uncertainty on how best to approach their use in learning. These challenges are exacerbated by recent revelations of government and corporate surveillance of mobile activity, presenting challenges to educators wanting to engage in mobile learning. Mobile learning is pedagogically rich enough to warrant grappling with these ethical issues involving surveillance. We have seen parallel progressions in both the technology and the pedagogical applications made possible by the technology, as mobile learning emerges from the shadows of content delivery into collaboration and interaction (Kukulska-Hulme & Shield, 2008), and further afield into more learner-led (Kukulska-Hulme, 2009) and mobile-based field activities (Gallagher, 2013). However, much of this pedagogical advancement is potentially at risk of regression as a result of ubiquitous or ambiguous surveillance practices; every CCTV camera and every mobile tower remind mobile learners of the persistence and ubiquity of observation.

This paper, a theoretical rather than experimental exercise, will argue that an additional positioning of the mobile learner, one responsive to an age of surveillance and the implications for learning that this surveillance implies, is now warranted: the subversive. This metaphorical position, and its related pedagogical applications, places great emphasis on mobile technology and the media practices circulated therein as tools of both discovery and power; as positions of both observation and being observed; and as acts of compliance and subversion. This playful subversive metaphor is adapted from the 'trickster', 'jester' and 'fool' metaphors (Macleod & Ross, 2011) advanced in online research and situates them firmly in the mobile space as a learner who is aware of being surveilled and, in turn, surveils; who observes, notes, reflects, and disseminates their learning with full awareness of being observed.

From Theorizing Surveillance to Mobile Learning

In light of the ongoing revelations of government surveillance of digital communications on a mass scale, perhaps best typified by NSA's ECHELON program (Wright, 2002), as well as the surveillance of local mobility, perhaps best typified by the ubiquitous CCTV camera, the nature of visibility (to see and be seen) and the approximation of invisibility (to see but not to be seen) has shifted. This shift is rendered apparent, in particular but not exclusively, in the urban space. What was once, arguably, a space of invisibility (one amongst many in the urban bustle) has become a space of persistent visibility. There are many attendant practices and technologies that have ushered in this shift: digital and mobile technologies and their media practices, geopositioning as navigation, social media and location awareness, along with the surveillance technologies of the individual, private enterprise, and the state.

The urban space has shifted along these lines of visibility, and the control mechanisms used to govern it have shifted as well (Coleman, 2004). This is in no small part shaped by the surveillance used to monitor urban space. In particular, surveillance contributes directly to the production of urban space by forcing adaptations in the way power is exercised, how emotional experiences in the urban space are constructed, and how the attendant reality is conceptualized and understood (Koskela, 2000). Every social interaction made privy to surveillance, every mechanism for control made visible from orange cones to fences to cameras affects our attendant reality. While weary of an unnecessary reduction of a complex issue, it is helpful to envision the answer to this question in conceptualizing the role surveillance has in forming urban space: what changes in our interaction with urban space when we know we are being watched? For the purposes of this paper in particular, what changes in our learning practices when we know we are being watched and how does this affect the way we ethically approach pedagogy within a surveilled urban space? It is within the structure of surveillance studies itself that we begin to see the beginnings of an authentic pedagogy designed to explore our surveilled worlds.

Surveillance studies has a rich history that will only rudimentarily be addressed here, but much of the classification used is helpful in constructing a pedagogical response to surveillance. We have the surveillance agent (the watcher, observer, seeker, or inspector) and the surveillance subject (that is being watched) (Lyon, Ball & Haggerty, 2012). The dichotomy implied in such a distinction is a point which this research pedagogically attempts to address as the the surveillance subject might also be the agent of a different subject. Although there are many further distinctions to be made, particularly in the agent (such as sponsor, data collector, analyst, etc.), for the purposes of pedagogy the roles of agent and subject are sufficient in the first instance.

Surveillance studies also proves useful in articulating the discourses surrounding surveillance, many of which prove useful in securing the pedagogy presented in this paper in an appropriate analytical structure. As Lyon, Ball & Hagerty (2012) state:

> "The narratives or discourses that explain surveillance vary by context and place. For example in some countries the technologies may be presented as a sign of modernization, in others as

simply another tool of the benevolent welfare state or in times of crisis as a weapon against internal and external enemies."

These narratives need to be addressed in any pedagogy of surveillance as they make palatable the tools of surveillance: the CCTV cameras, the swiped public transportation cards, the geopositioned text and mobile technology are made possible under the guise of protection, safety, or improved customer service. These narratives operationalize the "scripts of behavior" (2012), or the discrete units of action undertaken as a result of surveillance. These might involve, for example, rules governing data collection and analysis, data storage or destruction, tool selection, and so forth, all of which revolve around the surveillance agent.

Pedagogically, we need to consider the scripts of behavior associated with the surveillance subject as well, what activities are engaged as a result of the knowledge of constant surveillance. As surveillance subjects, we willingly contribute to the work of the surveillance agent through our mobility itself. Surveillance "softens" in the consumer realm in particular, as we willingly provide information that might have been more carefully guarded in the past: credit card numbers, date of birth, postal codes, social media, and email addresses are exchanged for convenience. This produces what Bauman and Lyon (2013) refer to as liquid surveillance, a byproduct of liquid modernity, or the modernity of redrawn or ephemeral moorings and instabilities. Yet this liquid surveillance and attendant scripts of behavior are not consigned exclusively to the consumer realm; they extend into our civic activities as well with each crosswalk signal dutifully obeyed, with each swipe of a public transportation card, and so forth.

Throughout all of this focus on surveillance itself, particularly as it applies to mobile learning and pedagogy in the urban space, it is important to note that surveillance is not at odds with mobility. Surveillance can be seen as a natural extension of mobility itself.

While these categorizations (agent, subject, narrative, scripts of behavior) prove most useful for articulating the complexity of surveillance in mobile learning, we must broaden the interactional context that governs the application of surveillance, from the CCTVs that dot the urban landscape, the cell towers, the scanned transit and credit cards, the census records, the cameras in public transportation, and, ultimately, the mobile technology that we willingly carry on our person. We must consider the lack of control we have over this data collection, the vast majority of which extends well beyond our personal mobile technology. We must consider the apparent inevitability of being 'on the grid', or being made visible and thereby foregoing anonymity (or confidentiality) as Foucault (1995) makes evident:

> 'He who is subjected to a field of visibility, and who knows it, assumes responsibility for the constraints of power; he makes them play spontaneously upon himself; he inscribes in himself the power relation in which he simultaneously plays both roles; he becomes the principle of his own subjection.'

While we might very well be 'the principle of our subjection' through our participation broadly in the rhythms and interactions of urban landscape as well as narrowly through mobile learning itself, we can make use of this pedagogically. We can begin with awareness, helping our learners identify the machinations and structures of surveillance in the urban landscape, before adopting an appropriate pedagogical position to make use of said surveillance. This papers presents one such position, but first we should explore the ethical guidelines that potentially govern its application, particularly for teachers looking to execute mobile learning in a formal context and we must address the gaps in thee guidelines to account for learning in surveilled urban spaces.

Situating the Mobile in Space and in People: Regional Distinctions and Mobile Learners

Yet is important to define both the mobile learner and the urban landscape in which this paper is set as these subsequently define the types of mobile learning that can take place there as well as infers the subjectivity of the experience itself; from Beijing to Lagos to London, the idea of subversion and playfulness in response to surveillance regimes would render differently. Before a brief discussion on the particularities of these regional differences, it must be noted that the position of mobile learner as urban subversive is, ultimately, a privileged one. It, and indeed most mobile learning, assumes a level of technological access and digital literacy that isn't shared globally. Mobile learners adopting this urban subversive position possess mobile technology that allows for media creation, for sharing and relatively unfettered communication, for GPS and other forms of navigation. This is naturally exclusionary to those without such technology. Much of what is proposed in this paper can be reconfigured for digital or non-digital (pen and paper) technologies in resource-deprived environments, however, as several ICT for development (ICT4D) projects have suggested: Ushahidi and election monitoring in Kenya (Okolloh, 2009), crowdmapping, anonymously, instances of corruption in Uganda (Hellström & Bocast, 2013), and so forth. While decidedly not playful, these ICT4D projects provide loose models for positions of urban subversion.

This pedagogical position also assumes a prerequisite knowledge on the part of the mobile learner of the surveillance regimes in place in their urban landscape; beyond an understanding of law and policy surrounding data collection and surveillance there needs to be a general material understanding of surveillance apparatus: the location of technologies that track the individual navigating through the urban landscape. While ubiquitous in urban landscapes, they are essentially opaque as a result of that ubiquity, hidden in plain sight. There is a prerequisite knowledge needed to participate in such learning: an understanding of data collection, the technologies that support data collection, the locations of said technologies, and so forth.

Further is the idea of playfulness, adapted in this mobile learning from the online learner as "jester" or "trickster" (Macleod & Ross, 2011); these are culturally specific positions of playfulness, even learning, that must find equivalence in the culture of the urban landscape in which it is being initiated. It must be noted that this dialogue with surveillance and the urban landscape is not playful in some locales. There are real consequences-legal, safety, etc.-to this activity in many places depending on the structure of 'openness' in that society. As such, the risks or outright dangers involved in such learning activity need to be made explicit to all participants, which informs the definition of mobile learner as defined in this paper.

Mobile learners as defined in this paper are adults: either tertiary students involved in independent study, or adults participating in a personal or collective lifelong learning regimen. The reasons behind such a distinction are precisely linked to the risks involved and the prerequisite understanding of surveillance and data collection that this learning activity requires. Without a conscientious understanding of risk and surveillance regimes, data collection, and geolocative technologies, the learner is unwittingly exposed to a level of risk that extends precariously close to unethical teaching practice: a lack of confidentiality, detrimental positions and intentional exposure to potentially unsafe environments, and so forth. As such, the author recommends that all learners are adults made fully aware of the surveillance regime and associated technological apparatus they will be playfully subverting. The risks involved in participation are discussed further in the next section.

Regionally, and beyond any sort of technological limitations, there are differences in approaches not only to the culturally specific metaphor of urban subversive, but also to the surveillance regimes themselves. The CCTVs of London, the Echelon and NSA data gathering of New York, the combined technological and human surveillance apparatus of Beijing's Golden Shield (Norris, McCahill & Wood, 2002), the disarming safety tropes of the surveillance of Seoul (Seoul Solution, 2016), and the intelligence gathering of Lagos (Ibidapo-Obe, 2008) would necessitate the need for learning positions that were responsive to these surveillance regimes.

Mobile Learning and Ethical Gaps in an Age of Surveillance

This paper acknowledges the ethics involved in such a positioning of mobile learning, one in an urban space of almost complete surveillance, is contentious. This paper ascribes to the mobilities turn in the social sciences (most notably Urry, 2007) as a means of 'thinking through the character of economic, social, and political relationships' that have been loosened from their sedentarist positions (discussed in Bayne et al., 2013); it does this through the juxtaposition of mobile learning, activity that suggests movement and ephemeral constructions of interactional context (Dourish, 2004), and surveillance as an apparatus of control. Yet surveillance 'is deeply implicated in the multiple mobilities and communication technologies that characterise social life' and 'mobility itself is increasingly a target of surveillance activities' (Molz, 2006). It is permitted, even embedded, in the practices and social relations engendered as a result of mobile technology use. This mobile technology use, foregrounding as it does movement, is increasingly surveilled as 'movement is no longer a means of evading surveillance but has become the subject of surveillance'' (Molz, 2006 drawn from Bennett & Regan, 2004, p. 453). In one way, our mobility has transformed us from surveillance agents (the urban observer, the people watcher, the invisible urban dweller) into surveillance subjects (our mobility makes our surveillance likely, if not absolute through GPS, through CCTVs, or elsewhere).

While going to great lengths to avoid technological determinism, the research presented here positions mobile technology itself at the center of this movement between mobility and control. The mobile technology itself isn't a neutral element in this equation; beyond evidencing the learning taking place, it structures the learning activity taking place, like a frame or laminate might be used to bind information in a particular context. It acts as both an agent of mobility and surveillance. As such, it presents an ethical ambiguity, particularly as applied to learning and particularly for educators

looking to activate mobile learning for students. If we employ mobile learning and ask students to engage learning in surveilled urban spaces, we are exposing them to risk. It warrants a discussion on what ethics in mobile learning is, or might become.

Ethics in response to surveillance, particularly in the field of education, has been relatively slow to evolve with some notable exceptions. This paper draws on the ethical discussion found in Dyson et al. (2013) in the formal educational context more broadly outside the formal environment, yet borrows from its assertion that a framework exists for ethical mobile learning that accounts for and seeks to mitigate the negative repercussions of surveillance on the mobile learner. This paper also draws heavily from Lally et al. (2012) and their research on the ethical dimensions of mobile ubiquitous, and immersive technology (MUITEL); extending the technological landscape beyond merely the mobile technology to consider a broader surveillance apparatus that is situated well beyond the control of the mobile learner.

Mobile learning, inherently as this paper argues, often foregoes complete confidentiality for partial obfuscation (using aliases online when possible, for example), contained communication channels (teacher to student as opposed to student to students or larger group), and tacit acceptance of identifying data being made available. Yet, this does not accord complete confidentiality to either the learner or the research participant. It merely provides a layer of misdirection towards those who might be looking to establish identity by not providing corroborating details (real name, photograph, location, etc.). The data generated by mobile technology is both automated (device specific GPS, etc.) and intentional (generated directly by the user); ethical research can make the learner aware of one (automated and device specific) and exhibit control over the other (intentional user-generated data). As such, we have only partial confidentiality as the default.

Building on this partial confidentiality, pedagogy must acknowledge that by generating a context for learning through mobile technology we are co-creating risk for the participant. This risk needs to be identified, articulated, and evaluated for and by the mobile learner, but acknowledging how we are potential unfairly compromising or failing to ensure 'a reasonable expectation of confidentiality' is a reasonable and ethically viable preliminary step.

The International Association of Mobile Learning (IAmLearn) provides a pragmatic approach to the ethical complications posed by mobile learning, drawn from the work of Wishart (2013). They provide a series of scenarios for potential mobile learning researchers, which act as case studies to stimulate critical thinking. These include scenarios involving boundary delineation (formal-informal, public-private, home-school, etc.); anonymity and identity (self-publishing); accessibility, ownership & authorship rights; risk analysis (complexity, iterative research design, etc.); and awareness of device functionality & data collection (informed consent). These scenarios present mobile learning amidst the interactional complexity in which it resides with data, boundaries, and identity as fluid states emerging from an interactional context (Dourish, 2004). They also have application to mobile learning in surveilled urban spaces, particularly in regards to the tension between anonymity, identity, and data collection.

Yet, these sources prove incomplete in terms of addressing the risk involved in initiating learning in a surveilled urban space. We are exposing learners to a mitigation, if not complete removal, of privacy and confidentiality through data collection in the mobile learning described in this paper. Informed consent is elusive as it is unclear what data is being collected by the surveillance agent and how it is being used. All of this presents concerns that would be served by a more robust set of ethical guidelines for educators looking to engage in this sort of mobile learning; in the interim, we will attempt to at least partially address these concerns through a structured pedagogy that reveals this surveillance.

Mobile Learning and Pedagogically Reimagining Surveillance

If we ascribe to the positioning of mobile as an inherently surveilled state, and consequently the mobile learner as inherently a surveilled learner, then we are left with pedagogically reimagining the learning potentially generated from such a dynamic or discontinuing its use altogether. This theoretical research opts for the former approach. While continuing to emphasize the negative repercussions of perpetual surveillance and avoiding but not entirely mitigating risk, we may begin to treat this admittedly problematic state pedagogically. We may continue to emphasize the fertile landscape that mobile learning in open urban spaces provides in terms of fieldwork, composition, and reflective practice (as discussed by the author in regard to open learning in Gallagher & Ihanainen, 2015). We merely need to turn our gaze towards the learning potential presented by surveillance itself.

Before doing so, however, the author acknowledges that this pedagogical response emerges from critical pedagogy (Freire & Macedo, 2003), particularly the belief that "the more profound dimension of their (student) freedom lies exactly in the recognition of constraints that can be overcome" (p. 355). As such, recognition of the surveillance regime and apparatus itself becomes one of the core tenets of the pedagogical approach being proposed in this paper, recognition of which can lead to greater freedom on the part of the student. Further, recognition of said surveillance regime and apparatus is an act of persistent reflection precisely due to the ubiquity of the surveillance being observed; hiding in plain sight, the surveillance apparatus requires reflection to detect. "Since this reflection by its very nature should be critical, learners will begin to comprehend the relationship among many different discourses" (p. 356). As such, reflective practice, discussed further in this paper, is critical to detection, a precursor to the playfulness of the compositions that ensue. Further, this research emerges from the work of Lewis (2006) and critical surveillance literacy, where terms such as power, production, ideology, discipline, resistance, gaze, and glance become the nomenclature for the discussion on pedagogical responses to surveillance cultures.

This pedagogical approaches to surveillance also have formal science and social science antecedents in the form of field work, or the collection of practices designed to systematically and rigorously investigate open space, as opposed to closed formal learning spaces in classrooms (what McLaren & Leonardo, 1998, refer to as surveillance pedagogy). Fieldwork provides an accepted and accessible model for conducting systematic learning in the field, which in this case is the urban landscape. The pedagogical response to said surveillance mirrors the pedagogical response adopted in response to all learning; we are merely repositioning our gaze on that which gazes at us, what Koskela (2000)

refers to us as "the gaze without eyes." Please note that while this paper is primarily a theoretical exercise, much of the following pedagogical responses emerged from the author's research in urban locales (London, New York, Edinburgh, Helsinki, Seoul, Beijing) employing a variety of pedagogical positions to activate mobile learning.

Pedagogically we begin with **making the ubiquitous visible**. We task our learners with identification activities enacted in the urban landscape in an attempt to visualize the extent of the surveillance apparatus itself. We task students to identify technologies of surveillance and to position these instances on a map of their own creation. Through an identification of the surveillance and its positioning geographically, we stimulate a cognitive shift (what Kress & Pachler, 2007 identified as a habitus transformation) in the mobile learner whereby the invisible (pervasive surveillance) is made visible. It is from this cognitive shift that all subsequent pedagogical exploration is based. Once seen (or cognitively shifted), this surveillance is difficult to 'unsee', suggesting an irrevocable shift in perception consistent with transformational learning (discussed in the context of subversive game design by Mitgutsch & Weise, 2011).

Figure 1-1: Surveillance as documented as part of multimodal ethnographic project in London by Gallagher, Knox, & Lamb, 2015.

Once this surveillance is made visible, **reflective practice** develops a critical perspective on the surveillance itself, its apparent inevitability, and its co-creation of the interactional context through

which the individual learner composing their life experience. Reflective prompts can be delivered through mobile technology to stimulate such critical perspectives (building on the reflective triggers of Verpoorten, Westera, & Specht, 2012); examples include prompts related to presentation of self through surveillance (what do I look like to the surveillance agent?), data as identity (who am I as far as data is concerned?), and potential inhibitions or adaptations caused as a result of this awareness of surveillance (what will I do differently, if anything at all?). It is important to note that identification of surveillance and reflection on its impact on the individual is an iterative process; each new identification of a previously unseen surveillance technology or data collection mechanism can, and should, stimulate a subsequent cycle of reflective practice as each instance of surveillance shifts the cognitive landscape of the learner.

Once identification and reflection have been embedded as a persistent activity, we look to **composition** as a means of analysing and identifying knowledge constructions amidst this surveillance. It is important to note, and to explicitly relate this to learners, that composition and the data collection that precedes it, involves exposure and risk. We subject learners to surveillance itself, we ask them to collect data through mobile technology that stimulates an additional layer of automated data generation (GPS coordinates for images, for example), we ask them to compose through this data collection and share any subsequent composition through applications, platforms, and third party services. All of this generates opportunities for breach of confidentiality and anonymity; all of this must be reflected upon in earnest. We as teachers and researchers might suggest forms or structures that these compositions might take: an ensemble, a montage, a collage, a video, a sound map, etc. All provide a contextual triangulations of otherwise disparate media that might be used as an extension of surveillance. We must acknowledge this openly and critically throughout this process. Yet, despite these potential risks, we ask our learners to compose surveillance itself. We document the surveillance apparatus; we compose and critique it. We turn our and their gaze on those who gaze at us; we watch the watchers. It is through this composition that we begin to see our new pedagogical position emerge as well: the subversive.

The Subversive as the Foil: Positioning the Learner through Non-Compliance

Positioning the learner amidst this complicated process of interactional context co-created by the individual, by the society, by surveillance, and through non-human agents (the urban sociomaterial assemblage discussed by McFarlane, 2011) presents its own complications. To begin are the learner's positions on the role of surveillance itself in society, their general predilections or apathy towards perceived security, privacy, and so forth. Further is the position of the learner as a rational, reflective actor in this larger context, their willingness to perpetually iterate and reflect on their relation to surveillance and their willingness to extend their understanding of that relation. As such, it is possible to assume that some learners will not move beyond the first few stages of the activity outlined in the previous section; as teachers, we can make them aware of surveillance, we can ask them to reflect on that awareness, yet the depth of their data collection and the sophistication and aptness of their subsequent compositions are driven largely by their own impetus. We cannot expect, nor demand, a cognitive transformation. What we can do is present alternatives to the learner model presented in much pedagogy: a perfectly rational, highly reflective, and highly adaptive individual. Surveillance presents us with an opportunity to explore learners as agents of partial resistance or subversion.

Much of this section is building on the discussion presented in Molz (2006) and the surveillance of mobility, particularly as it is seen as 'inherently risky' but also as the following:

> Interpersonal surveillance can thus be seen as simultaneously productive and transformative as well as constraining and oppressive. As Green (2002, p. 33) notes, technologies of surveillance are neither inherently `good' nor `bad'; however, this does not mean that they are neutral. Instead, as tools of surveillance, mobile communication technologies shape certain ways of seeing and, at the same time, are socially shaped by their use in everyday interactions. These technologies and the social uses to which they are put constitute a power/knowledge regime through which mobile social relations are ordered according to practices of watching, following, monitoring and tracking' (Molz, 2006).

As mobile surveillance is neither inherently good nor bad, it stands to reason that they be approached and systematically interacted with pedagogically as both, depending on the inquiry or activity driving the interaction. Most learners have complied with surveillance regimes through the non-visibility of sheer ubiquity; in the past, we haven't know surveillance is there, so we comply with our contributed data accordingly. Hence, the need for both reflection on, partial resistance to, and subversion of the 'the power/knowledge regime' made possible, at least partly, as a result of mobile surveillance. It represents the missing perspective that our compliance has neglected; it is the trigger for transformational learning based on a contradictory position.

As such, we turn to models for subversion or resistance, as well as models that position learning askew from traditional learning approaches (such as Macleod & Ross's jester, trickster, and fool positions discussed further). Several models specific to the mobile learner in urban space have been advanced in recent years, including the flaneur, a wanderer through the urban landscape. Urban flanerie, adapted from Benjamin (2009), Shields (2006, 1994), and Hollevoet (1992), is defined as a means of urban exploration towards understanding the contemporary individual's experience of urban space (Harvey, 2007). The flaneur is a participant observer, moving through urban space and exploring the semiotic exchanges, the sociocultural structures, the processes, and materials that comprise urban life. According to Shields, he/she ' closes the gap between citizen and state, by re-imagining and mapping his newly expanded world' (1994); further, 'the flâneur becomes a rhetorical strategy for rethinking the digital network activities and digital cartographies enabled by mobile technologies' (Kalin, 2009).

Yet, the flaneur proves inconclusive, or incomplete, as a model for exploring and responding to surveillance. While it maintains an observational quality (the learning presented in this paper maintains an emphasis on observational awareness and reflective practice), the flaneur needs adaptation to make use of subversion and resistance. We need to adapt the playfulness of the flaneur away from mere participant observation and reflection towards partial compositions of resistance and surveillance. Beyond providing a counterpoint to the learning modeled as observation and analysis as detachment (i.e., crafted and presented outside the context of the urban space itself), this position explores compliance, or a lack thereof, as an agent in the larger system of surveillance. It provides an

ontological vantage point on which to explore the role of the individual (particularly their compliance) in shaping sociomaterial urban environments.

So we return to Macleod & Ross's (2011) positioning of the jester, trickster, and the fool. While these positions are advanced in relation to digital education, they serve mobile learning well by repositioning playfulness as a pedagogical principle. In regards the subversive and their relationship with surveillance, the jester, trickster, and fool also provide a means of questioning compliance in a surveillance regime without intensifying, or severely augmenting, risk for the learner. The subversive as jester, trickster, or fool (while discrete, non-interchangeable entities in Macleod & Ross, they are being partially conflated here to foreground the playfulness involved in all three) might materialize compositionally through montages and maps of urban surveillance shared online and potentially crowdsourced, or art pieces created from CCTV footage and related surveillance artifacts; the work of William Betts (2013) provides an example of such a genre. We see a literal playfulness in mobile games involving surveillance data including WeAreData (Watch_Dogs, 2015) which provides ongoing surveillance data mapped publicly in London, Berlin, and Paris. According to the site:

> 'Watch_Dogs WeareData gathers available geolocated data in a non-exhaustive way: we only display the information for which we have been given the authorization by the sources. Yet, it is already a huge amount of data. You may even watch what other users are looking at on the website through Facebook connect.'

The language employed ('non-exhaustive', 'we only display the information', 'already a huge amount of data') suggests more data to be unearthed and explored, an implicit invitation for further exploration and playfulness. We see subversion being intentionally embedded in game design itself as a means of stimulating transformational learning (Mitgutsch & Weise, 2011). Ingress, a mobile multiplayer online role-playing location-based game, involves capturing ''portals' at places of cultural significance, such as public art, landmarks, monuments, etc., and linking them to create virtual triangular 'control fields' over geographical areas' (Ninantic Labs, 2015). It paradoxically both extends the surveillance regime (by collecting our extensive, contextual geolocational data) and subverts it (by revealing aggregations of control and making these visible online by encouraging a series of movements both 'on' and 'off the grid'). Our subversion in all these games is our willingness, or not, to play.
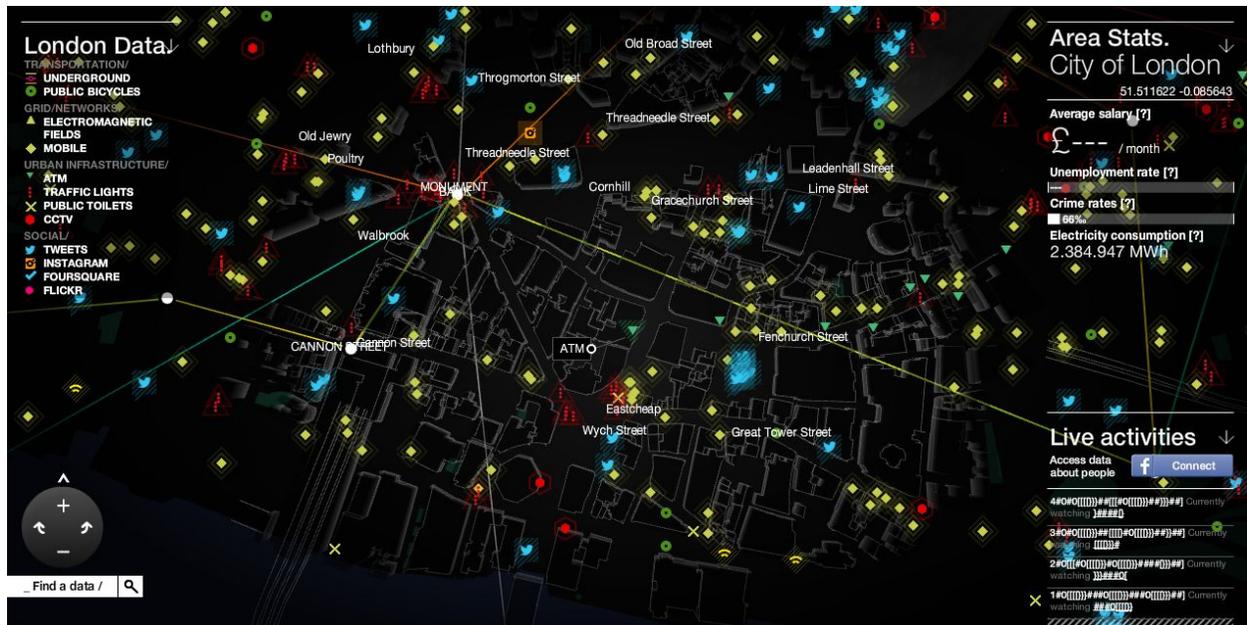
Figure 1-2: Watch_Dogs WeAreData website offering a glimpse of East London and the data available therein. Retrieved September 1, 2015 from
http://wearedata.watchdogs.com/start.php?locale=en-EN&city=london.

These projects invigorate both reflective practice (what data am I sharing publicly?) and pedagogical exploration (what data can I collect?) and do so, particularly in the case of WeAreData, playfully and subversively. The subversive in this respect explores learning amidst the context of playful interaction through movements between compliance and noncompliance (to play or not to play in the case of games). Learners explore what data is being collected about them by collecting data made available to them; compositions repurpose and thwart surveillance intent by presenting alternative or even nonsensical renderings of data. Compositions collect imagery, for example, that disrupts the reliability of location by presenting evidence from multiple GPS signals from multiple technologies across multiple spaces. By playfully thwarting intent, learners explore the structuring of the surveillance itself and how we are collaboratively the urban space and the narratives through which it is understood (returning to Koskela, 2000).

Yet, there remains the pedagogical exploration of anonymity and confidentiality itself that can be stimulated through explorations of partially removing oneself from surveillance. Foregoing mobile technology, intentionally avoiding known CCTV cameras, and using cash for public transportation stimulate a critical reflection on the role of compliance in surveillance regimes. Electronically, several projects such as ToR (2015), an open source project dedicated to protecting internet traffic from unwanted surveillance, and SpiderOak (2015), one of many cloud hosting services that employs a zero knowledge policy (no plaintext data, keys, or file metadata is ever stored), stimulate reflection on how confidentiality can be constructed in mobile contexts and can be employed pedagogically.

We as educators can stimulate these explorations of noncompliance and subversion through critical reflection on the tools, services, and data generated as a result of both mobility and its accompanying

surveillance. While this paper has carefully avoided referring to this as literacy so as not to be conflated with digital literacies, it does acknowledge that the knowledge potentially gleaned from these activities would generate an interactional literacy of sorts, one attuned to the social and by extension surveillance regimes in place in urban environments. Yet, literacy suggests skill, as opposed to iterative, reflective and compositional practices that this paper is suggesting is the result of the pedagogy described in this paper. Subversion and resistance is not literacy as such, but a means of pedagogically exploring and deconstructing what has been construed monolithically: the surveillance regime as a pervasive, faceless enterprise of control. This pedagogical position of subversive challenges that monolithic interpretation and provides a contrasting viewpoint that stimulates critical reflection. A potential byproduct of this critical reflection would be, among other things, a more robust set of ethical guidelines to encourage further experimentation with mobile learning in urban space.

Conclusion

We as educators can stimulate these explorations of noncompliance and subversion through critical reflection on the tools, services, and data generated as a result of both mobility and its accompanying surveillance. Yet, it is important to consider the ethical implications of positioning learning as subversion, resistance, or noncompliance. The activities described in this paper should cautiously, if at all, be undertaken as a required activity within a formal curriculum as that mitigates the right to participation on the part of the student (are they able to say no if it is a formal assessed activity?). Rather, these can be independent, voluntary explorations of surveillance in the urban environment conducted by learners with full knowledge of their activity, the surveillance regime in place, and the legality of the urban environment. Laws should be respected, even while the intent of surveillance is carefully subverted; the purpose of these exercises is not destruction, nor subversion as criminality, but rather noncompliance as a pedagogical position. How much of how urban environments operate is based on our tacit compliance in larger power regimes? This research question is implicitly at the heart of all the activities described in this paper. Great care is needed to ensure that pedagogically activating subversion maintains a strong emphasis on learner safety and legality, whenever possible.

Further research needs to be conducted to explore how this subversive position complements and ideally extends critical inquiry in learners emerging from traditional learning approaches fostered through formal education. This extends to the established model of fieldwork drawn from the sciences and social sciences and applied to mobile learning (explored in Gallagher, 2013); further research is needed to determine the extent to which subversion, particularly as applied to surveillance, challenges the observational, ethnographic qualities of fieldwork.

Further research, additionally, is needed to explore the sociocultural dimensions of compliance and subversion, with localized learning practices developed as a result. Subversion and noncompliance might conceivably render differently in Seoul, Cape Town, and London, for example; as Lyon, Ball, & Hagerty (2012) argue, the narratives surrounding surveillance render differently across locales so this variation would conceivably extend to subversion. As each surveillance regime would emerge from unique measures of openness and control, these different renderings would presumably bring with them a set of risks specific to the local context that the mobile learner and teacher would need to

address. Each location would employ specific sets of sociocultural practices to navigate and communicate subversion, suggesting that mobile learning derived from such specificity would optimally emerge from the location itself, rather than being transplanted on it.

Subversion as pedagogical principle presents a contrast to educational practices of critical, yet compliant, modes of inquiry. As such, it has educational merit if only to explore our individual contributions to the surveillance regimes at work in our urban environments (and beyond). While opposition to these regimes is not the conclusive nor expected outcome to such activity, critical reflection brought about by exploring contrasting modes of inquiry certainly is.

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