

Locative-Media Ethics: A Call for Protocols to Guide Interactions of People, Place, and Technologies

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Introduction

Imagine yourself wherever you were 20 years ago, and that an entrepreneurial, fresh-faced, and friendly young newsboy comes to your doorstep. He asks you to subscribe to the local paper. There is no cost to this subscription, he says, but, in exchange for community news, the boy must be allowed to come into your house and look at all of your photos, even the most intimate ones, making duplicates for his boss as he sees fit. As a part of this transaction, he also gets to copy down all of the details from your desk calendar, your Rolodex, your letters, your diary, your to-do lists, your bookcase, your documents from work, anything he comes across that he finds interesting. He gets to follow you around and gather even more information about what you do, where you go, and when. He can do all of this for as long as he wants, in whatever depth he wants, and however he wants, and then can use this information freely for some vague commercial purpose. For just a free subscription, would you have taken this deal?

If not, then we need to better understand what has changed in our sensibilities about such information exchanges, which were considered highly personal and sensitive not that long ago. Evolutions in our media ecosystems have prompted hundreds of millions of people around the world to voluntarily and mindlessly submit to these types of invasive conditions. In digital forms, for some reason, these tracking behaviors suddenly seem socially acceptable. In turn, there are many diverse, complicated, and multiplexed ethical issues arising.

This special forum, though, focuses on a single underappreciated aspect of these exchanges, locativeness of the involved media, and one major overriding concern: What are—or, maybe more importantly, where are—ethical guideposts for such media that tracks or stores massive amounts of our location data?

Invited scholars in this collection are part of a committed group of researchers who regularly present work about locative media at the Association for Education in Journalism and Mass Communication (AEJMC) and International Communication Association (ICA) conferences, among other academic venues, and consistently participate in ICA Mobile preconferences, where this forum idea originated, in 2019, as part of a workshop titled “We Can, But Should We? Toward a Code of Ethics for Designers of Locative Media.”

In defining “locative media,” we have noted that what once was a highly touted mobile-app feature—location awareness—has melded into the general global communication infrastructure, essentially making it invisible and no longer a novelty that draws attention (Erdal et al., 2019). In our workshop, for example, we drew locative-media boundaries so broadly that they included media-conjuring ideas about specific places, such as a statement of “I live in Hawaii” or even the invoked Germanity of a German-English accent perceived in speech. In that sense, we mostly shift attention here away from boundary debates about what could be considered locative media to inquiries about missing guidelines and discussions governing how people interact with place through mediating technologies, from analog mapping exercises to drones.

From that paradigm, this forum begins with a foundational and critical discourse that brings together tensions of the origins of the field—via Andrea Zeffiro, an assistant professor at McMaster University in Canada, who wrote a detailed genealogy on locative media (Zeffiro, 2012)—with the rapidly expanding extensions of it. For the latter, we have chosen to focus on emerging ethics around personal uses of drones, by Julia M. Hildebrand, an assistant professor at Eckerd College in Florida. Together, these ideas establish “command and control infrastructure” connections between the past and the present.

Responding to the infrastructure theme, and expanding locative media beyond smartphones (which he also covered in Frith, 2015), Jordan Frith, the Pearce Professor of Professional Communication at Clemson University in South Carolina, inverts infrastructure concerns from the background to the foreground in ways that grow ethical ideas germinated and tended in his recent book about RFIDs (radio-frequency identification; Frith, 2019) and the special section he co-edited on *Mobile Media Beyond Mobile Phones* (Frith & Ozkul, 2019).

To follow Frith’s lead, and to avoid any pitfalls of focusing on a single technological construct, such as smartphones, the forum next addresses possibilities for new methodological approaches to this topic. In that vein, Larissa Hjorth, a Distinguished Professor at RMIT (Royal Melbourne Institute of Technology) University in Australia, and one of her doctoral candidates, Caitlin McGrane, pursue an innovative research approach that explores performative and critical cartographies in conjunction with ways in which maps, even quotidian ones, often depict power differentials.

These differentials manifest into journalistic contexts as well, as addressed by Amy Schmitz Weiss, an associate professor at San Diego State University in California. Schmitz Weiss, who also publishes a semimonthly e-mail newsletter on Spatial Journalism, develops concerns about how news organizations can include but also exclude communities and shape perceptions about places by what stories they tell and where.

Ethical concerns related to issues of power with locative media then are illustrated at the intersectionalities of disability and accessibility by Gerard Goggin, the Wee Kim Wee Chair of Communication Studies at Nanyang Technological University in Singapore. Goggin, who recently co-edited *Location Technologies in International Context* (Wilken et al., 2019), also has been among scholars pushing for clarity on

definitions and conceptual boundaries, including interrogations of cultural specificities, in locative media.

In particular, Goggin raises concerns about ethical stakes and issues associated with such diverse yet often consequential locative media. He asks, specifically, for whom, and under what kinds of system arrangements and conditions, are ethical issues addressed in relation to privacy, surveillance, data and digital rights, justice (including design justice), safety, security, and design? In our discussions about this topic, and reflective of this forum as a whole, Goggin also has wondered what avenues, beyond an emphasis on ethics, are available responses, and how we get beyond reflexive responses, after ethical boundaries have been severely broken, and think ahead to anticipate future unarticulated needs.

Who is going to address these emerging ethical issues of locative media? Profiteering technopolists? Government institutions besieged by Big Tech lobbyists? Users, getting something for “free”? Journalists looking for stories about something “new”? Maybe scholars are best positioned in this case, such as with these essays, to speak for public good and provoke meaningful responses. I doubt these sorts of discussions are going to be prompted by the salespeople at companies tracking location and putting that data to rich commercial purposes, no matter how earnest they are about changing the world through locative media. So we need to make clear who is in command, and who is in control. Right now, it’s probably not you.

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Enduring and Emerging: Considering the Ethics of Locative Media

In 1999, the first iteration of Ben Russell’s *Headmap Manifesto* appeared online. The text contemplated a utopian near future in which everyday life is transformed from the ground up by location-aware technologies. It proved to be influential for early experiments in locative media and urban computing, perhaps because of how it envisioned harnessing mobile and location-aware technologies from military and commercial spheres for public good (Galloway, 2008; Leorke, 2017; Zeffiro, 2012). Indeed, the artists, designers, engineers, and researchers exploring “locative media” shared an interest in retooling mobile and location-aware technologies beyond a top-down militaristic “command and control infrastructure” (Hemment, 2004), privileging profit-driven research and development.

By the early to mid-2000s, experiments in locative media actualized the manifesto’s appeal to distribute military and commercial technologies into a wider range of social formations. For instance, Esther Polak’s *AmsterdamRealTime* (2002) visualized the movements of 75 inhabitants of Amsterdam as they traversed the city from October to December 2002. Participants wore a “tracer unit” that continuously transmitted their geographical coordinates over a GPRS (general packet radio service) network and projected the data in real time in an exhibition space. Comparably, for Christian

Nold's *BioMapping* (2004) project, participants wore a device that recorded their Galvanic Skin Response in conjunction with their geographical location to track individual "emotional arousal" rates at particular places.

However, in the aftermath of 9/11, when electronic surveillance systems were implemented en masse, the public was only beginning to fathom the ways in which location-aware consumer devices—such as mobile phones, laptops, and Personal Digital Assistants—could be used for surveillance purposes. Surveillance mechanisms of locative media remained invisible and pervasive, persistently tracking the movements of people and things and enmeshing them into a surveillance cartography (Monmonier, 2002). The appeal for bottom-up systems for collective action was a response to how location-tracking technologies with military origins were being integrated into commercial technologies for civilian use. Nevertheless, these experiments accentuated locative media's structural tensions: Appropriating military and commercial systems in many ways assimilated and redeployed these structures of power.

In those early years, before smartphones, the focus on redirecting geolocation technologies insinuated broad ethical concerns that harkened to traditional modes of media activism. In particular, an emphasis was often placed on the redeployment of mobile and location-based hardware and on the software and programming developments that enabled short and fleeting interventions with otherwise opaque military–industrial systems. *Botfighters* (Stroud, 2002) transformed mobile phones into weapons and the physical surroundings of the user into a virtual battlefield in Sweden in 2001. *Shadows From Another Place: San Francisco <-> Baghdad* (Levine, 2004) was a site-specific installation that transposed a map of missile and bomb sites in Baghdad from the U.S. invasion in March 2003 onto San Francisco. *The Transborder Immigrant Tool* (Electronic Disturbance Theatre 2.0, 2007) applied GPS (global positioning system) technology to prototype a mobile phone application for migrants to orient themselves and locate water caches while crossing the U.S./Mexico border region. These projects, and other similar locative-media experiments, incorporated mapping and GPS as an approximation of the same technologies deployed by the U.S. military to identify and target "foreign" adversaries.

As we continue to rely on commercial, mobile, and locative-media systems that are historically linked to "command and control infrastructures" and that mediate how we are permitted to access and shape physical, digital, and social spaces, like Fusco (2004) argued, we must foreground ethical concerns about the knowledges, histories, cultural practices, and socialities that are subsumed and undermined, but also mined and monetized, by these technologies and their applications. Otherwise, we may perpetuate a top-down "cartographic rationality" (Crampton, 2003) avowing an imperialist, settler-colonial model of knowledge extraction, control, occupation, and dehumanization (Simpson, 2017; Smith, 2012). Such critical attention to the military–industrial genealogies and ethical implications of locative media remains crucial with emerging location-aware systems and infrastructures reconfiguring the fabrics of our physical, digital, and social spaces. Consumer drones and self-driving vehicles equipped with LIDAR (light detection and ranging) sensors and facial recognition software connected to an urban Internet of Things are just some examples of the sophisticated

machinic assemblages of locative media that will likely shape our smart cities, everyday mobilities, and networked homes.

Moreover, as emerging mobile and locative technologies continue to be adopted for not only commercial and militaristic operations but also creative, artistic, and personal applications, how may the ethics for such location-based media design and applications need to be rethought? Beyond issues related to such technologies being rooted in militaristic “command and control infrastructures,” what concerns require thoughtful responses and actions by designers, producers, regulators, researchers, and users? And how do such emerging locative media and their increasing domestic uptake across a variety of domains help us reassess and expand ethical considerations for past and present location-aware technologies?

Consumer drones, for example, complicate how we think about mobile communication, location awareness, and human-robot interactions (Hildebrand, 2019a). Their proliferation in everyday spaces and ongoing regulatory negotiations across the world bring attention to the ethical concerns they present. Issues regarding surveillance, privacy, and cybersecurity merge prominently with problems related to physical safety and environmental disturbances. Disruptive incidents, such as the drone sightings at London’s Gatwick Airport in December 2018, which led to hundreds of flight delays and cancellations, show what impact the actual or suspected presence of drones can cause. Next to the physical nuisance and danger to human and nonhuman activities in the air and on the ground, drones present a cybersecurity threat by providing covert channels for data infiltration and exfiltration (Vattapparamban et al., 2016). As such, the three broad themes of privacy, safety, and noise dominate discourses about the powerful, buzzing, and potentially “unruly” aerial technology (Bartsch et al., 2016; Dempsey, 2015; Jablonowski, 2015; McCosker, 2015; Sandvik & Jumbert, 2016). We may find value in adopting this tripartite lens onto other locative media and their ethical implications.

Whereas much important research continues to engage with questions over privacy and locative media (e.g., De Souza e Silva, 2017; De Souza e Silva & Frith, 2012; De Souza e Silva & Sheller, 2014; Frith, 2015; Leszczyński, 2017; Monmonier, 2002; Wilken & Goggin, 2014), critical attention to notions of individual safety and environmental noise can similarly illuminate everyday locative-media designs, regulations, and uses that delimit who and what is brought into the representational frame. What bodies, spaces, and mobilities are protected and empowered as well as disrupted and endangered? What metaphors and world views are reaffirmed and refuted? And what can their creative, artistic, and playful appropriations, resistances, and subversions tell us about locative-media ethics for affected people, data, and environments? Emerging locative media require evolving locative-media ethics. As researchers and regulators hurry to respond to the accelerated integration of increasingly sophisticated, location-aware technologies in everyday spaces and practices, we have an opportunity to tie enduring ethical concerns about uneven knowledges, histories, cultural practices, and socialities with timely issues on their latest instantiations in locative-media design, regulation, use, and art. At the same time, the critical frameworks that such emerging location-aware infrastructures and applications generate can help us complicate,

refine, and expand how we think about, discuss, and, ideally, take action on locative-media ethics.

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The Importance of Infrastructure to Locative-Media Ethics

Developing an ethics of locative media requires a rather obvious but nonetheless crucial step: defining locative media. The term is often used to refer to smartphone applications, art pieces that use location, and emerging consumer-focused technologies, such as drones. But at its core, the term refers to any media that are able to locate a physical position and transmit that location data. Those data are then often aggregated into larger systems to provide contextual information about individual accounts and personal mobility patterns. Consequently, to address the provocative questions posed in this forum requires a focus on the many ways the mundane infrastructures we deal with daily transmit our location data.

The study of infrastructure has a well-developed, transdisciplinary academic history (Sandvig, 2013). Infrastructure Studies focus upon exposing ways our lives are shaped by encounters with infrastructure. Doing so requires a general methodological approach called the “infrastructural inversion,” which essentially involves a foreground/background switch (Bowker, 1994; Star, 1999). Rather than focus on interactions with interfaces that media-studies research typically analyzes, infrastructural inversions ask researchers to examine mundane interactions with infrastructures of all types. My argument is that a well-developed locative-media ethics requires infrastructural inversions as a foundation. Massive amounts of location data are collected with little consumer awareness, so we must look beyond the more obvious examples of locative media to ensure full transparency about decisions being made.

Looking beyond interfaces to infrastructures also raises questions about where and if we can draw lines between infrastructures of location and infrastructures of identification. By infrastructures of identification, I am referring to the many systems put in place primarily to identify bodies moving through a space. The purposes of identification may be for security or to correctly bill an account. Regardless, many systems are now built upon practices of identification and machinic individuation. And the tiny data traces meant to identify billions of objects and bodies will likely feed into systems used to build various Artificial Intelligence systems that may later automate some processes and even more granularly track and identify things moving through the world. Much of the contemporary world we have built requires the granular sorting of things and bodies (Frith, 2019).

Identification infrastructures are not necessarily the same as locative media. However, an infrastructural inversion of identification infrastructure reveals that practices of identification often cannot be separated from practices of location awareness. In fact, my argument is that understanding these infrastructures can help broaden what it means to develop a locative-media ethics. As the previous essay argued, we need to develop ways to elucidate ethical concerns with the “uneven knowledges, histories, cultural practices, and socialities” of locative media. Few knowledges are more uneven and asymmetrical than the collection of location data from infrastructures, which almost by definition, tend to be mostly invisible except in moments of breakdown (Dourish & Bell, 2007; Erdal et al., 2019; Star, 1999). Below, I provide a few examples of how a focus on infrastructure can broaden our definition and understandings of locative media.

One example of how infrastructures work as locative media is RFID (radio-frequency identification) technology. RFID is a prime example of an infrastructural technology: The technology is ubiquitous (more than 10 billion tags were used in 2018), promiscuous (RFID is found in everything from vehicles to subway cards to consumer goods), and powerful (it can uniquely identify trillions of items; Frith, 2019). However, RFID is not locative in the traditional sense. A tag attached to a car, consumer item, or a contactless card in a wallet does not constantly transmit its location. Rather, the RFID tag most commonly stays in an “off” state and only transmits its identifying number when in range of a fixed RFID reader. Whereas locative media that rely on an infrastructure like GPS (global positioning system) actually track location, an infrastructure like RFID simply transmits an identification number. That has led some people to claim RFID is not locative media at all (Graafstra, 2014).

And that definitional work is where my argument comes in. For us to fully develop an ethics of locative media that accounts for “uneven knowledges,” we need to broadly define locative media. An RFID tag on a car or embedded in a subway card might not constantly track location, but it is locative. It transmits a unique identification number to a fixed reader. The larger system knows where the reader is located, so it then knows where that specific tag (and likely the body attached to it in the database) is located at a given moment of time. The location data can then be used to monitor transportation patterns and the flow of bodies on roadways or public transportation. Something like RFID might not be a *tracking* technology like GPS or even drones, in some cases, but it is locative. It uniquely identifies something and tells a larger system where that something is at a given moment.

RFID is just one example of how diving deeper into infrastructure can broaden our understanding of locative media. Something as straightforward as an IP (internet protocol) address that connects with a specific Wi-Fi hotspot is locative in many cases because the location of the Wi-Fi router is known by the system. Closed-circuit television (CCTV) is locative in the sense that it captures data traces of where bodies are at a given moment. And with the emergence of the Internet of Things, more and more objects will communicate their locations to infrastructure in new ways. In cases where those objects are attached in some way to a person’s identity (e.g., through credit-card data), those objects become locative media.

My larger point is that developing a robust locative-media ethics requires wading into what Star (1999) calls the “boring things” of everyday life. It will require spending time learning how technologies work, what kinds of location data they transmit, and how that location data are aggregated. Of course, as the following essays in this section examine, an attention to infrastructure is only one part of a broader locative-media ethics, but it is an important part. After all, the physical environment is only becoming more communicative, and our infrastructures are only becoming more networked. Scholars must begin inverting these infrastructures to fully argue for more ethical uses of location data.

*Jordan Frith
Clemson University*

Sensory, Sensitive, Sensible: Multisensory Mapping of Quotidian Locative-Media Practices

Within many contemporary everyday contexts, the locative dimensions of mobile media are palpably both visible and invisible. Quotidian moments of locative media can be found everywhere—while taking the train to work, moving from one meeting to the next, scrolling the pages of Facebook. As we move with our devices, and as the previous essay highlights, the visibility of the “locative” aspect of locative media entangles the digital, material, and social in ways that give us a sense of place and emplacement (Frith, 2017; Gordon & De Souza e Silva, 2011; Massey, 1994). These everyday, lived experiences, however, are not always accounted for in ethical data-gathering practices and frameworks.

With location services often enabled as a default setting, locative media’s ubiquity cannot be underestimated (Wilken, 2019). The data trails made by locative media reflect both our conscious and unconscious ways of navigating everyday settings and their attendant emotional textures. These experiences, in turn, reshape how we understand maps and represent place. Given this phenomenon, questions arise: How can we use locative media to reflect upon our different understandings and interpretations of place as we move through it? How can creative uses of mapping provide insight into the multisensorial and tacit ways in which we navigate place? How can we develop maps that give us new understandings of everyday moments of stress and safety as we navigate places?

Such questioning draws on research exploring performative and critical cartographies—building on the work of scholars such as Crampton (2001), Kitchin et al. (2009), and Verhoeff (2012). This research field investigates ways in which maps often depict power differentials and how mobile media have, in some ways, democratized maps and mapmaking with a focus on the quotidian. Following Verhoeff, we feel it is necessary to note that how our experiences of places and nonplaces can be determined by temporality and affect, as in “the event of mobility is performative, not so

much *taking* place as *making* place: a making that includes an aesthetic dimension” (Verhoeff, 2012, p. 101). In this contribution, we, therefore, highlight the importance of the aesthetics of making by asking whether making individual maps can make us more attuned to the feelings of moving through places and raise otherwise unaccounted ethical issues?

In our International Communication Association (ICA) Mobile preconference workshop in May 2019—under the label of “towards an ethics of locative-media research”—we invited mobile media experts to show *how* and *when* they used locative media on a typical or atypical day. The aim was to unpack some of the tacit and multisensorial ways in which locative media unfolds in everyday life.

We also sought to explore how understanding these practices could inform the framework of an ethics of locative media. For example, how do the deeply embedded everyday practices of mobile media prompt us to consider how we begin to move forward with an ethics of locative media in an increasingly datafied everyday life? How do we account for those who might be marginalized, overlooked, or victimized by increased locational surveillance?

To answer these questions, participants drew on their extensive theoretical knowledge of locative media, as well as on tacit, quotidian, and implicit understandings of the ways they relate to and move through space. We employed multisensorial mapping as a method of capturing participants’ tacit and intangible experiences—registering the affect, feeling, and emotion of using locative media. This approach draws on mobile methods conceptualized by Büscher and Urry as “various movements, of people, objects, information and ideas” (Büscher & Urry, 2009, p. 99), while maintaining a focus on mobile media that enables “field-based research” and “allow[s] for controlled complexity” (Boase & Humphreys, 2018, p. 154).

We also drew on feminist theorizations of ethical privacy research to consider how “the experiences and perceptions of vulnerable groups must form the starting point for the ethical decision-making for online researchers regardless of whether their research population qualifies as ‘vulnerable’” (Linabary & Corple, 2019, p. 1448). As such, we asked participants to imagine, even if they did not consider themselves to be a member of a vulnerable population, how these groups might be victimized or disadvantaged by normative surveillance systems? Participants were, thus, able to multisensorially depict how they see and feel their way through the world in complex ways by making maps with colored paper and card, colored markers, Play-Doh, and stickers.

The majority of maps depicted commutes to and from participants’ homes, places of work, and the conference, often emphasizing some of the ways they use locative media to connect and disconnect with others and their environments using Play-Doh structures. As “maps can ontologically and epistemologically inform other visual and representational modes of knowing and praxis” (Kitchin et al., 2009, p. 2), participants’ maps illuminated their intrinsic and maybe unexamined ways of knowing and being in their everyday lives.

For example, one participant used clusters of stickers to highlight where they felt unsafe en route to their office. Another used different colored Play-Doh to represent moments of stress on their commute. We suggest these maps are “part of an

assemblage of people, discursive processes and material things” (Kitchin et al., 2009, p. 16) and that this assemblage must be accounted for in an ethics of locative media by drawing on lived experience.

As mobile location-aware devices become increasingly ubiquitous in our lives, their uses for wayfinding, (dis)connectivity, and safety are increasingly apparent (Wilken, 2019). This article has presented a brief discussion of some of the findings from a small-scale study into the tacit and quotidian uses of location-aware devices by attendees at a workshop. In developing a framework for locative-media ethics, we suggest that we look to the everyday uses of mobile technologies to account for the ways in which ethics should be sensory, sensitive, and sensible.

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Journalistic Concerns With Locative-Media Ethics

As alluded by Zeffiro and Hildebrand, locative media stems from a complicated history of “command and control” infrastructures that clearly dictate how the implementation of locative media in society has evolved as a hidden element that pervades our digital and mobile media life today. As Frith notes, locative media have formed into a system that is nebulous in definition and type, all the while locative technology has become more sophisticated, and much of the public doesn’t know how it works. As one engages in daily experiences in moving from one location to another, Hjorth and McGrane highlight mobile apps that are constantly tracking those moments often without our knowledge or consent in many cases. These circumstances have created an urgent call to stop and ask ourselves: Where are the ethical guidelines and frameworks for locative media?

It would be naïve to think that locative technology and locative media are a utopian experience in which we will be closer to the spaces and places around us that will make society or life better. On the contrary, this is a moment in which every step and movement is being tracked, and by whom, and for what purpose? As a digital journalism scholar, I am constantly astounded by news reports of companies and organizations that have had location-data breaches or poor location-data protocols (MoviePass, GeoFeedia, Strava Running, etc.) that have resulted in large locative-data leaks. The Federal Communications Commission (FCC) even has started to ask for cell-phone carriers to report on their locative-data practices (Chaturvedi, 2019). Yet, though these situations are reported on, they seem to create no new agency for users or opportunities for mobilization, abandoning the public in its moment of need.

Where is the responsibility of the press in this circumstance, beyond the reporting of the bad practices emerging with locative media and locative data? Intertwined in having business needs for such data, news organizations and journalists are not

removed from these issues, either. Journalists always have captured location in some form as part of the news-gathering and news-reporting processes (most commonly in the form of “where the news” occurred). From a bigger picture point of view, what about the massive amounts of public datasets that exist that are culled, cleaned, and synthesized for investigations that incorporate location? Or how about the ways in which news organizations gather and collect location data from their news audiences informally through polls or formal inquiries; how are these datasets protected, and what are the ethical guidelines journalists or news organizations follow with their own locative data?

In a preliminary research project I have undertaken with Brett Oppegaard of University of Hawai‘i, we have discovered that few legacy media organizations in the United States have a public policy, framework, or detailed guidelines published about their locative media and data practices. News organizations might realize competitive benefits from being such a transparent and public-facing organization that often looks out for the public good. If journalists won’t even do it, then who?

Furthermore, we cannot wait or should not wait for technology companies to create a standard locative-media ethics framework or policy. Journalism has long stood as the entity or institution to cast light in the shadows and be the watchdog for the public, so shouldn’t the creation of locative-media ethics in the news industry serve as an opportune moment?

Journalistic concerns with locative media are wide and deep. The ways in which locative media can include, but also exclude, communities (Frith, 2015; Gordon & De Souza e Silva, 2011; Zook & Graham, 2007) is a serious issue that needs to be tackled. As Hjorth and McGrane highlight, vulnerable, marginalized, and overlooked groups who take to locative media may be in a disadvantageous or a harmful situation. Furthermore, Zeffiro and Hildebrand identify how surveillance and privacy (De Souza e Silva & Frith, 2012; De Souza e Silva & Sheller, 2014) concerns with locative media are rampant. This is apparent in recent cases of companies that have been called into question over their locative practices in the public eye. Locative media also can create disparities that go beyond our current notions of the digital haves and have nots.

Creating an ethical framework is a step in the right direction for locative media overall and an opportunity for the news industry to recognize their important role in this technological phenomenon. Journalism and media scholars have the opportunity to call these issues out and make the discussion happen in the academy. As digital and mobile technologies impact our daily lives, we make the choice of how they determine our lives as well. As Farman (2012) states,

As we produce the social spaces around us, both materially and across digital networks, we are engaging in the production of space through movement. How we conceive of this movement determines how we will practice and live in the spaces we create. (p. 141)

The public is already expecting a locative experience when they pick up their mobile phones, when navigating a path with Google Maps, looking for local business recommendations from Yelp, or getting neighborhood alerts with NextDoor. The

public is and will seek a locative storytelling experience (Øie, 2013; Oppegaard & Rabby, 2015; Schmitz Weiss, 2018). Will the news industry be ready for it? Without an ethical guidepost to help in the creation of an interactive-narrative experience in this sense, the haphazard creation of locative media in the news could be a big failure and, from a larger perspective, could damage the trust and credibility that is already low within the news industry.

As scholars and practitioners of journalism, we need to go beyond defining locative media, identifying its infrastructure, and its communication innovations. We need to look inward and reflect upon how much locative technology can have unwieldy power in the hands of the few or powerful that can make the transparency and benefits of locative media—in its utopian sense—at risk. Creating an ethical framework or guidepost is a start. And long-past overdue.

*Amy Schmitz Weiss
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Cross-Cutting Ethics of Locative Media: Disability, Accessibility, and Design Intersections

As captured in the suggestive contributions to this forum, locative media are shape-shifting and deep-seated phenomena. Locative media have moved well beyond their earlier associations with particular technologies (such as satellites, GPS [global positioning system], and mobile phones). They also have become embedded in many of the pervasive, intensive, and episodic software, hardware, networks, routines, and rhythms associated with daily life (taken-for-granted in the habitus enacted by apps, social media, digital platforms, drones, etc.).

Via the multisensory embodied experiences and intimacies mapped by Hjorth and McGrane, for example (see also Farman, 2012), locative media are being reconfigured and reinvented in distinctive ways through the emergence of new kinds of infrastructures, social practices, and regimes of control. Those adaptations include how locative media are coordinated (as brought out in Frith's discussion showing us the twinning of infrastructures of location and infrastructures of identification).

The dialectic between the “enduring and emerging” that Zeffiro and Hildebrand capture also resonates with a set of studies of the state of play on location technologies in international contexts (Wilken et al., 2019). For readers of *Journalism & Mass Communication Quarterly* (JMCQ), we would point out the complexities and challenges in grasping the implications of location technology for contemporary media, communication, and journalism that lie in charting this dynamic, expanding landscape.

This imperative is nothing new for our field; however, there is something urgent and fundamental at stake in emerging technologies datafying location and its related concept, place (Wilken & Goggin, 2012, 2015). As Erdal et al. (2019) argue, “locative media has been a moving target for researchers,” especially due to the many “invisibilities” that characterize location technology as it has emerged across a wide range of

journalism and communication content, formats, and platforms. So what are we going to do about that? I suggest we turn to lessons we can learn from the cross-cutting case of such ethics of locative media found in the intersectionalities of disability and accessibility (Couldry et al., 2018).

About 15% of people worldwide have a significant disability (World Health Organization, 2018). Disability is highly intersectional and often deeply involved in the complexities of social life. Consider, for instance, the categories of mental health and disability, which often bring together dynamics of income, resources, class, caste, gender, sexuality, and race. Along with those complexities are differential opportunities for education, work, and social participation. Nested within those concepts are generational and life course matters, not to mention geographical location (including issues such as urban vs. rural or remote location). To contemplate disability, therefore, is to highlight issues of accessibility, affordances, an unequal and differential nature of media infrastructures, sensory media, questions of “voice” and “listening,” as well as participation enabled, shaped, and potentially straightened via locative media. Such issues can be explored via a consideration of locative-media experiments, uses, adaptations, and social imaginaries associated with people with disabilities at different moments of the emergence of locative media.

Recall the appearance of the mobile phone in the late 1980s and 1990s, for example, which offered ways of providing information for disabled users that helped them in wayfinding and navigation. Blind people figured prominently among early adopters of mobile phones—in the pre-smartphone era—developing cultures of use based on accessible affordances (such as keyboard commands and audio features and prompts). Such mobile wayfinding combined with location- and context-aware technologies are an area in which blind people were pioneers. Location-media protocols and techniques using guide dogs are another early and enduring example. There were various experiments with sonar-equipped technology in the 1980s and 1990s as well (Ellis et al., 2017). So, the diffusion of the mobile phone remediates these earlier histories, practices, and technologies. That dynamic also becomes a generative force in a wide range of ongoing experiments with location technologies for blind people and those with vision impairments in the present day (i.e., Conway et al., in press).

The ethical issues of such endeavors—let alone the socio-technical coordinates—mount further when we consider new directions in locative media. The evolution of connected cars and varieties of driverless and autonomous vehicles often references people with disabilities and raises a range of ethical issues about whose interests and imaginaries are driving such developments (Goggin, 2019; Hildebrand, 2019b; Hildebrand & Sheller, 2018; Pink et al., 2018).

If RFID (radio-frequency identification) introduces billions of new locative media objects, as Frith (2019) suggests, then the vast new universe of sensors, devices, data, computation, algorithms, and so on, associated with the Internet of Things—as a desired next phase of mobility, locative media, and hybrid spaces (De Souza e Silva & Sheller, 2014)—cannot simply be just represented as yet another major technological advance for people with disabilities in care, social support, health and medical, and other settings (Ellis & Goggin, 2016). Like the use of Artificial Intelligence (AI) in

analyzing data for police focus, including on people in receipt of government welfare, services, and financial support (Eubanks, 2018), aspects of the new locative media—created via Internet of Things development—has real potential to usher in an unprecedented and potentially oppressive phase of surveillance and governmentality. Again, what are we going to do about that?

We can understand the everyday uses, domestication, and appropriation of locative media by, for, and with people with disabilities as pushing boundaries but also prompting a general “reimagining” of communication and media. Thinking critically with disability helps us put issues of ethics of locative media in stark relief in relation to fundamental issues of how technology is created, shaped, and reproduced. Consider, for instance, that disability and accessibility are areas where, for more than two decades, researchers, disability activists, and designers have argued for the importance of action and ethical responses, under various rubrics, including user-centered design, participatory design, universal design, and inclusive design. A new approach that seeks to go beyond many of these is “design justice,” proposed by Sasha Costanzo-Chock, who argues for an approach to design led by marginalized communities, such as disability communities (Costanzo-Chock, 2020). Such interventions are a much-needed spur to research, discussions, and action sorely needed to highlight, chart, and embed ethics in locative-media systems.

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