

The Locative, the Ambient, and the Hallucinatory in the Internet of Things

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ABSTRACT This paper outlines three modes in mobile digital media in the contemporary cityscape: the locative, the ambient, and the hallucinatory. All of these tendencies appear in contemporary artistic and commercial strategies for “intertwining” our cities and our data, yet each bears its own distinct freight. Rhetoric around locative media projects, which frequently draws on Situationist texts, tends to make broad claims about the potential for positive cultural change. Ambient media’s rhetoric is entwined with neo-liberal desires for a closed, frictionless circuit of consumption, where mobile technologies directly connect consumers to brands via virally circulating digital advertising codes. The hallucinatory is a moment of the unexpected irruption of the Real, and,

as such, offers the possibility of conceiving of a relationship between data and objects that escapes the fantasy of frictionless global digital capital. Drawing on international urban art projects such as “[murmur]” and recent urban ad campaigns from marketing firms such as Dentsu Canada and Sony Pictures. This article argues for the growing need to map the stakes of these emergent modes in the Internet of Things.

KEYWORDS: signage, locative media, ambient media, AR, glitch, mobility, Žižek

Vladimir Nabokov’s 1958 short story “Signs and Symbols” describes a character afflicted with an imaginary mental illness called “Referential mania.” Persons suffering from this condition imagine themselves as subject to a world of things that ceaselessly exchange coded communiques: “Clouds in the staring sky transmit to one another, by means of slow signs, incredibly detailed information regarding him. His inmost thoughts are discussed at nightfall, in manual alphabet, by darkly gesticulating trees. Pebbles or stains or sun flecks form patterns representing in some awful way messages which he must intercept” (Nabokov 1958: 225–6). Half a century later, Nabokov’s text no longer describes a pathology, but serves as an allegory for the ways in which ubiquitous computing is changing our relationship to the environment ... especially the urban environment. Cell phones, the Global Positioning System (GPS), matrix codes (i.e. two-dimensional barcodes), metadata, and radio Frequency ID tags (RFIDs) are all components of an Internet of Things that is insinuating itself into formerly mute objects, rendering them garrulous. Fitted with these technologies, things actually *do* talk to each other about us constantly, in codes and machine languages, at incomprehensible speeds, outside of the realms of the audible and the visible.

In his writing on the circulatory turn in media, communication, and cultural studies, Will Straw argues that the inscribed and mediatized surfaces of the city – interfaces between people and objects, including, but not limited to, public signage – become *pretexts* for spatial organization and new construction (Straw 2008: 16). Paying close attention to such surfaces is what Dilip Gaonkar and Elizabeth Povinelli claim will allow us to catch a glimpse of “what is attached to them as both cause and excess” (Gaonkar and Povinelli 2003: 392), in order to better understand how social texture emerges out of these interactions. Increasingly, the attachments to both official and unofficial urban signage are digital rather than physical. Such attachments are the subject of this article.

Straw notes that much of the scholarship to date on mobile digital media focuses on either macro-scale, infrastructural concerns or on

the micro-scale of human interaction. As a result, the middle of the range, specifically “the texture of messages and semantic substance of communicative textuality,” gets short shrift (Straw 2008: 6). Using specific examples of digitally augmented urban signage as examples, it is possible to describe the missing middle range in terms of three states in which the Internet of Things can operate: the locative, the ambient, and the hallucinatory. All of these states appear to varying degrees in contemporary artistic and commercial strategies for “intertwingling” (Nelson, *Dream Machines*, 1974: 45) our cities and our data. Moreover, each of these states corresponds to one of the three orders in Lacanian theory that collectively structure subjectivity: the locative to the Imaginary, the ambient to the Symbolic, and the hallucinatory to the Real. Before proceeding with that argument, though, some context is necessary.

The phrase “the Internet of Things” is strongly associated with the writing of science fiction writer, environmentalist, and design scholar Bruce Sterling, specifically in *Shaping Things* (Sterling 2005: 101). However, the notion had its relative beginnings in 1988, at the Xerox Palo Alto Research Center (PARC), under the direction of chief technologist Mark Weiser. It was Weiser who was the first to use the term “ubiquitous computing” (Van Kranenburg 2008: 8) to describe a world of networked objects; its first prominent public appearance was in an article titled “The Computer for the 21st Century,” published in a special issue of *Scientific American* in September 1991 (Weiser 1991). The idea was developed further at the MIT Media Lab in 1995, with the formation of the Things That Think (TTT) research consortium of scholars, technology firms, and corporations interested in its possible practical applications (Gershenfeld 1999: 202). Another MIT-based project, the Auto-ID Center (which existed from 1999 to 2003 and subsequently expanded into Auto-ID Labs, a global research and development network), also concerned itself with producing the Internet of Things, as the following mission statement outlines: “The Auto-ID Center envisions a world in which all electronic devices are networked and every object, whether it is physical or electronic, is electronically tagged with information pertinent to that object. We envision the use of physical tags that allow remote, contactless interrogation of their contents; thus, enabling all physical objects to act as nodes in a networked physical world” (Sharma, Brock and Ashton 2000: 4).

One factor that these diverse approaches to the Internet of Things have in common is a desire for it to function invisibly, or nearly so. Weiser argues that one of the virtues of ubiquitous computing is that it will allow the PC screen to merge into the environment (Weiser 1991). For Neil Gershenfeld, one of the initial leaders of the TTT, even the subtleties of “ubiquitous computing” are still too noticeable; what interests him is an even stealthier paradigm he calls “unobtrusive computing” (Gershenfeld 1999: 200). Nevertheless, there are, at the

present moment, both opportunities and reasons for thinking about the conspicuous visibility of the Internet of Things.

As Bruno Latour notes in *Reassembling the Social*, “the great advantage of visiting construction sites is that they offer an ideal vantage point to witness the connections between humans and non-humans” (Latour 2005: 88). In 2009, the Internet of Things is still well under construction. The portions of it that may fade from view as the components become smaller and cheaper, such as the RFIDs attached to DVDs and interleaved into some books, are still very much in evidence. Other portions, which address us directly through a growing array of types of digitally augmented signage plastered over every conceivable urban surface, may stay visible in the long term. But what insights might observing the ongoing development of such technologies afford us? As Straw argues, we need to address the particular types of relations that occur between digitally augmented objects and the subjects that encounter them. The analogy that I am arguing for, between the Lacanian triad and the locative, ambient, and hallucinatory states of mobile digital media, is the beginning of a diagram of such relations.

Locative

From a popular perspective, “Locative media are media of communication functionally bound to a location. The physical implementation of locative media however is not bound to the same location to which the contents refers [*sic*]. Locative media are digital media applied to real places and thus triggering real social interactions” (Wikipedia contributors 2009). Gabe Sawhney and Shawn Micallef’s [murmur] project, which began in Toronto but now has nodes in cities around the globe, is a textbook example of urban locative media. Each distinctive, green, ear-shaped [murmur] sign marks a spot in a given city where stories contributed by local residents are available to passersby (Figure 1). Dialing the telephone number on the sign (or, alternatively, clicking on the location of the sign on one of the street maps in [murmur]’s Web interface at <http://murmurtoronto.ca>) allows the curious to listen to stories associated with that place while, in the words of the [murmur] website, “engaging in the physical experience of being there.” Some stories provide the listener with instructions for movement, while others suggest that the listener should focus on particular objects (for a longer discussion of [murmur] and similar projects, see Wershler 2008: 407).

However, there is a tension inherent to the popular notion of locative media that needs to be examined in greater detail. Karlis Kalnins, who coined the term “locative media,” makes the following corrective: “Locative is a case not a place. It seems a little unfortunate that the locative case as applied to media and referred to as ‘locative media’ has been often misinterpreted as ‘location’ and ‘location media’ by anglophones and others” (Kalnins 2004). As a grammatical case, the locative “denotes ‘place where,’” and serves “to locate or



Figure 1
A typical [murmur] sign, Toronto. Photograph by Bryce Macfarlane. Used by permission of Shawn Micallef and [murmur].

fix in the presence of something” (“Locative” 1971: 1648) – that is, it corresponds roughly to the function of a preposition in English. In other words, the locative designates not merely a physical location, but a *relation* between a subject and something other than that subject, and it is in this relation that the tension lies.

Relating to an other is always tied to a certain conception of ourselves, which in turn is based on how we’d like to be seen. On one hand is Imaginary identification, in which we identify with “what we would like to be”; on the other is Symbolic identification, in which we identify “with the very place *from where* we are being observed” (Žižek 1989: 105). This description covers more than the encounter between a person and a locative media marker; it also concerns the way that locative media practitioners talk about themselves and their projects. In “Beyond Locative Media,” a detailed report on the state of the form written in 2006, Marc Tuters and Kazys Varnelis describe their aspirations for locative media as follows:

We suggest that locative media offers a conceptual framework by which to examine the certain technological assemblages and their potential social impacts. Unlike net art, produced by a priestly technological class for an elite arts audience, locative media strives, at least rhetorically, to reach a mass audience by attempting to engage consumer technologies, and redirect their power. Today, this is more important than ever. (Tuters and Varnelis 2006)

This is locative media’s best face: an egalitarian attempt to revitalize the public sphere by producing authentic, delightful yet thought-provoking encounters for engaged citizens looking for new ways to explore the richness of the metropolitan environment. In this sense, locative media strives to present a properly Imaginary relationship: the viewing subject, the signs pointing to objects in the cityscape and the city itself merge into a harmonious totality, each providing something that the other lacks (Žižek 1989: 171). The question we should pose is, for whom is this performance staged?

Imaginary identification is always already subordinated to Symbolic identification. Underpinning the form in which we appear likeable, there is an omniscient, obscenely powerful agency which observes, elicits, and determines it (Žižek 1989: 108). In contemporary culture, this agency even leaves enough room for its subjects to imagine they have achieved some distance from it (Žižek 1997: 21). Tuters and Varnelis’s call to redirect the power of consumer technologies away from hi-tech “priesthoods” and “elites” points directly to the all-powerful agency of networked globalized capital. The partly demilitarized network of GPS and telecommunications satellites which makes locative media possible for military and civilian commercial applications alike is the most obvious aspect of this powerful other. However, it is ultimately only part of the picture, because both it and

its opposite, the idealism that characterizes many locative media projects, can be easily accommodated by the business interests behind consortia like Auto-ID Labs. The supple Symbolic order¹ of postmodern capital is all too happy to sell hardware, software, and incidentals to both the utopian visionaries attempting to spawn a new sense of civic reengagement and advertising firms looking to monetize the same technologies (Tuters and Varnelis 2006). The field that determines both the utopian and dystopian versions of locative media is the ceaseless self-invention of networked global capital, where “transgression is part of the game, solicited by the gadgets which organize our life as the permanent dealing with excesses” (Žižek 2001: 31).

Ambient

The shift from locative to ambient does not involve any specific change in the kind of technology that is being used. Instead, it might best be described as a change in perspective.

According to John Urry, the factors that distinguish networked global capital from other types of capital can be summarized in terms of an emergent “mobility complex,” in which the “elaborate interconnections of physical movement and communications” figure prominently (Urry 2007: 195). Because of locative media’s emphasis on fixity, it may not be accommodating enough to describe the variety of forms that are possible within this mobility complex. Sean Cubitt, Nikos Papastergiadis, and Scott McQuire’s paper on “transient media” is a recent attempt to compensate:

The transient is not the same as the ephemeral. It describes not a relation in time, but a relation in space, a relation normally between one moving and one unmoving or two moving parties to an act of mediation. If we accept the traditional distinction between subject and object, we might situate the transient as an axis between them, a vector which goes both ways, and which inaugurates a material process between them which cannot be distinguished as “subject” or “object” and which in honour of its technology we can think of as project. (Cubitt, Papastergiadis and McQuire 2007: 3)

This notion of transient media reinvents Harold Innis’s dialectic of time-biased and space-biased media (Heyer 2003: 46) for deployment in a digital milieu. As a conceptual model, transient media has the advantage of allowing for scenarios when both parties in a mediation are moving, but to the extent that it focuses solely on the movement of the *physical* objects or parties engaged in the act of mediation, it is *not mobile enough*. What is necessary is to provide a supplementary account of how, at the behest of networked global capital, the physical signs that trigger transient media encounters are

moving away from the indexicality of one thing pointing to another toward a digital, purely symbolic state that we might call *ambient*.

In 1996, the same year that US President Clinton issued a policy directive declaring the availability of GPS for civilian as well as military users, and established a board to oversee it (Office of Science and Technology Policy), “ambient media” – advertising spraypainted on sidewalks, placed on placards above urinals, projected onto blank walls or sidewalks, etc. – was coming into vogue in Britain (Cook and Woolgar 1996: 37). Though this initial, analog form of ambient media was often dismissed in the interim between then and now as faddish and less likely to succeed than emerging digital advertising, a new, hybrid strain of ambient media has emerged. Recent ambient media campaigns incorporate both digital network technologies and permanent and impermanent forms of urban signage into its practices (Reid 1996: 30). Dentsu Canada’s work for Vespa in June and July of 2007, and Sony Pictures’ summer 2009 campaign for Neill Blomkamp’s science-fiction film, *District 9*, exemplify this new form of hybrid ambient media.

From the point of view of a person on the street, an encounter with the Vespa campaign began with hoarding posters featuring silhouettes of Vespa scooters. The *District 9* campaign included not only posters, caution tape, and stickers, but also more durable forms of signage, such as billboards, benches, outdoor video screens, and pole-mounted signs. All of the *District 9* signs mimic the graphic and semiotic conventions of official hazard warnings (black and red text and pictographs on a white background) in order to convey xenophobic messages such as “BUS STOP FOR HUMANS ONLY” (Figures 2 and 3). Both the Vespa posters and many of the *District 9* signs also featured large, two-dimensional matrix codes called QR Codes (Figure 4). Taking a picture of a QR Code with a cell phone loaded with the appropriate software resulted in the automatic transmission of a URL to the consumer’s handset. In the Vespa campaign, the correct code resulted in the consumer winning a prize (Vespa Canada 2007). The QR Code in the *District 9* campaign contained a URL that led to a trailer for the film hosted on YouTube. Some signs also featured toll-free telephone numbers that people could use to “Report Non-Humans.” Dwight Caines, Sony’s president of digital marketing, reported that people made 33,000 phone calls in a two-week period, and 2,500 of them left messages about alien sightings. More significantly, ninety-two percent of the total calls came from cell phones, indicating that people were calling as they encountered the ambient signage in the cityscape (Lee 2009).

The implications of this sort of ambient media are considerable. Linking digital networks to signage or other mechanically reproduced objects featuring QR Codes proceeds on an entirely different scale than connecting two people, or a person and an object. Additionally, both the mobile device and the index (QR Code) are doing an



Figure 2

District 9 ambient media campaign bus stop ad with toll-free number and URL. West Portal, San Francisco, June 6, 2009. Photograph by Danny Howard. Creative Commons license: Attribution-noncommercial 2.0. URL: <http://www.flickr.com/photos/dannyman/4153688009>



Figure 3

District 9 ambient media campaign phone booth ad with toll-free number and URL. Victoria, London, September 7, 2009. Photograph by Rune Hammersland. Creative Commons license: Attribution-Noncommercial-Share Alike 2.0 Generic. URL: <http://www.flickr.com/photos/runeh/3949106066/sizes/l/>

increasing amount of work in the process of recognition, relegating the subject to a more passive role. Information architect Peter Morville, who has examined the work done by web usability experts like Jakob Nielsen and Steve Krug, and by urban planners and wayfinders like Paul Arthur and Romedi Passini, states that whether they are encountering digital media or physical signage, “Users don’t read, they scan” (Morville 2005: 30). The involvement of cell phones and QR Codes is not so much a departure from encounters



Figure 4
District 9 caution tape with QR Code. Broadway, New York, August 17, 2009.
Photograph by Darren Wershler.

with analog ambient media as it is a literalization of already existing practices, as people begin to “scan” signs with their phones and computers rather than their eyeballs, and offload the processing of relevant information onto computers either inside or connected to these devices. Again, though, from the perspective of networked global capital, this form of ambient mobility is *still* not mobile enough.

If imaginary identification is “identification with the image in which we appear likeable to ourselves,” Symbolic identification is

“identification with the very place *from where* we are being observed” (Žižek 1989: 105). As such, Symbolic identification involves not an attempt to meet one’s own desires, but a never-ending attempt to arrange our lives according to the desires of the socio-symbolic other, which, because of our identification with it as a guarantor of meaning, appear to be perfectly reasonable. If networked global capital is the other of the Internet of Things, then we should expect to see ongoing attempts from those involved in ambient media marketing to strengthen and hasten the flow of digitized capital ... which is exactly what is happening.

An analysis of the Vespa campaign on the website of the Canadian Marketing Association emphasizes the need to eliminate the “proximity barriers” raised by acts like taking pictures of QR Codes with cell phone cameras. From this perspective – that is, the perspective of the interests of networked global capital itself rather than those of an engaged urban citizen – the goal is to maximize the “viral benefits” of an ambient advertising campaign by imagining ways that a consumer could enter such a contest “without being near the media execution” (Murphy 2007b). In other words, any digitally augmented object in an ambient advertising campaign (such as a poster featuring a QR Code) that expects a consumer to have to be in a specific physical location (the site of such a poster) and to have to perform deliberate actions in order to participate in that campaign (like taking a picture of a QR Code and sending it to a website) is slowing down the efficient flow of capital. Paradoxically, the consumer-subject is also the major hindrance to optimally effective consumption. From the perspective of advertising, if the process of conducting a transaction could somehow be routed *around* consumers, eliminating decisions, actions, and the need for physical embodiment, it would be much more efficient. Formulating the problem in this manner is one way of demonstrating that the interests represented in Symbolic identification are clearly not our own.

Digital ambient media has already established a clear trajectory for its further dematerialization and automatization: a move from digitally recognized symbols like QR Codes to purely numeric “shortcodes.” A shortcode or, in marketing jargon, “call to action” (a term redolent of Symbolic identification at its most ideological) is a brief sequence of alphanumeric characters that is entered into a telephone via the keypad to request a short message [SMS] or other service (Murphy 2007a). Vortex Mobile’s SMS campaign for Staples Business Depot, in which contestants encounter various kinds of out-of-home (OOH) ads (billboards, signs on benches, etc.) urging them to text “EASY” to 500500 to win prizes, is typical (JCD 2008: 1). Unlike a QR Code, a shortcode can be used without any proprietary reading software; its user simply enters the sequence of digits into her phone and hits the Send button. Unlike QR Codes, shortcodes can be shared easily with people who did not see the

sequence in its original setting. Further, as the Canadian Marketing Blog notes, there are also several different kinds of QR Codes, requiring different software packages to read them. Unless cell phone makers and phone service providers agree on a standard and preload the software onto all handsets, shortcodes will remain the most flexible option (Murphy 2009), because they are formally indistinct from any other string of data shooting across the wires. The exchange of shortcodes is one step closer to a truly unobtrusive Internet of Things, where RFIDs and reading devices like cell phones – and, tellingly, smart shopping carts – exchange information and currency without consulting us at all.

Hallucinatory

What this fantasy of capitalistic circulation ignores, though, is that between the subject and object of mobile digital media, and between its warring locative and ambient modes, there is always an insurmountable gap, the difference that results from the shift between two antagonistic perspectives. For Cubitt et al., this gap is a material process which is neither subject nor object; for Gaonkar and Povinelli, it is the “cause and excess” of the thing motivating the movement across social space. One name for this gap that both precedes and is a product of Symbolization is the Real. In *The Practice of Everyday Life*, Michel de Certeau observed that “The media transforms the great silence of things into its opposite. Formerly constituting a secret, the real now talks constantly” (de Certeau 1984: 185).

The Real now talks constantly because, as Friedrich Kittler argues in *Gramophone, Film, Typewriter*, technological media has been transcribing the Real since the invention of the phonograph, despite the fantasizing of capital about an impossible, perfectly clear channel of communication (Kittler 1999: 21–114). The Real also has different aspects: it is the background static of the universe that precedes not just the Symbolic but also subjectivity. The Real is also the noise in the channel which not only prevents clear transmission, but is the condition of the possibility of transmission at all. Long before Kittler, Rainer Maria Rilke staged an imaginary encounter with the first aspect of the Real in his 1919 essay, “Primal Sound” (Kittler 1999: 38–42). “What if,” asks the poet, “one changed the needle and directed it on its return journey along a tracing which was not derived from the graphic translation of sound but existed of itself naturally – well, to put it plainly, along the coronal suture, for example” (Kittler 1999: 40–1).

Helen Papagiannis’s “Hallucinatory AR” gives body to Rilke’s thought experiment, directly manifesting the Real of the Internet of Things (Papagiannis 2009). Papagiannis, a graduate student studying with Dr. Caitlin Fisher at York University’s Future Cinema Lab, works with Augmented Reality, a type of locative media involving a “fiducial” (an abstract geometric symbol, much like a

QR Code in appearance), a pair of LCD shutter glasses or a digital camera connected to a computer or smartphone, and software that imposes some sort of digital object onto the image of the fiducial as it appears in the camera screen or shutter glasses. Papagiannis's 2007 Hallucinatory AR pieces involve "Augmented Reality glitches" (Sterling 2009) – instances where the AR software mistakes random material objects for AR fiducials and attempts to generate AR imagery, endlessly cycling through the AR sequences it has stored in memory and imposing them on the object (Papagiannis 2009). The result is uncanny: a flickering anamorphic stain on the image, an impossible object constituted by and constitutive of the system that generates the image in the first place.

The image that Papagiannis eventually settled on for her experiment was a high-contrast, low-resolution black-and-white photo of a stained-glass window (she is currently unable to identify the source of this image). Of the various images with which she experimented, this one was unique in its ability to evoke four different AR videos, which it cycled through in an attempt to make one "stick." Papagiannis also discovered, by varying the focal length of the camera, that an image approximating a male face would also appear in the video. "Interestingly, it was when the image was blurred into this face using the web camera that the AR hallucinatory imagery worked best, rapidly multiplying and appearing more prominently" (Papagiannis 2009). (Figures 5a and 5b)

In theorizing about this experiment via Max Ernst and the Comte de Lautréamont, Papagiannis invokes both the beauty and the jarring potential of the Surrealist collage image (Papagiannis 2009). As Steve McCaffery points out in "The Elsewhere of Meaning," Pierre Reverdy's canonical definition of the Surrealist image, whose strength depends on the juxtaposition of two disparate realities, does indeed develop directly from the work of Ernst and Lautréamont. Building on Ernst's description of the linking of "two unjoinable realities on a plane which in appearance is unsuitable to them" and Lautréamont's infamous chance encounter between a sewing machine and an umbrella on an operating table, Reverdy argues that the strength of the Surrealist image depends on maximizing both the distance between these images and the exactitude of their conjunction (McCaffery 1986: 172).

Papagiannis's Hallucinatory AR piece is important precisely because it does connect multiple disparate realities on a separate plane, but it goes a step further in that it contains no fixed Symbolic content. McCaffery's contribution to this dialogue is that he identifies the limits of the disruption that the Surrealist image can create. He observes that the Surrealist image "must utilize an unquestioned representational function of the sign, productive of a pictorial, figurative scene. The Surrealists' appeal to dream sources and the unconscious thus included a preservation of a recognizable, referential constituent, relying on juxtapositional and contiguous



(a)



(b)

Figure 5(a) and (b)

Stills from Helen Papagiannis's video "Hallucinatory AR." Used with permission.
URL: <http://augmentedstories.wordpress.com/2009/07/30/hallucinate/>

operations to create the image" (McCaffery 1986: 172). Papagiannis's Hallucinatory AR is thus more sublime than beautiful – far more violent than a Surrealist image. Whereas Surrealism operates on the level of the Symbolic, leaving referentiality and the subject intact, Hallucinatory AR operates at the level of the digital Real, preceding and disrupting the function of the Symbolic, and necessitating the use of the Imaginary to cover over the trauma.

What the generality of Hallucinatory AR demonstrates is that the noisy, glitchy digital Real has the potential to erupt anywhere in the Internet of Things, at any time, drastically altering the ostensible meanings of signage and the other inscribed surfaces of the built environment. While Augmented Reality must defend itself against such eruptions in order to function smoothly, it can never eliminate them entirely because they represent the very matter out of which AR is constituted. The full significance of this fact begins to emerge when considering, as John Murrell does, the high likelihood that "one day we will be equipped with unobtrusive and tastefully designed technology that will project before our eyes a heads-up display of

information related to whatever real-life scene we're looking at" (Murrell 2009). Given the early appearance of iPhone and Android AR applications for life-or-death scenarios like traffic management, the question of what happens when the digital Real manifests itself in an environment like traffic signage takes on a high degree of seriousness, because more than the users of AR are at risk (Murrell 2009).

The point of the emergence of glitches and other impossible digital objects is exactly that, as Slavoj Žižek notes, "'the impossible HAPPENS' – this, and not the structural obstacle forever deferring the final resolution, is the most difficult thing to accept" (Žižek 2001: 84). The Real, the in-between, is the space of the deadlock between two antagonistic forces: an AR rig and the obdurate reality that refuses to be supplanted by its fantastic imagery. Hallucinatory AR is an embodiment of the bugs in networked global capital's fantasy of perfect circulation, a reminder that there is a point in any system where things break down. As Sterling notes, what the existence of Hallucinatory AR points to is a whole range of problems with AR technology that the industry that produces it doesn't even know that it has yet (Sterling 2009). The intervals opened up by such glitches indicate that there is still room to reconfigure the Symbolic coordinates of the Internet of Things. Even in the digital metropolis of networked global capital, "the space is still open for our activity to come" (Žižek 2001: 85).

An important part of that activity will be the development of a vocabulary that's useful for both pragmatic and critical application. My goal has been to contribute to the emerging taxonomy of digital mobile media by proposing refinements to two existing terms (locative, ambient) and by adding a new one (hallucinatory). I have also suggested that the various modes of digital augmentation are not neutral by any stretch of the imagination. The point of connecting the Lacanian Imaginary, Symbolic, and Real to the locative, the ambient, and the hallucinatory is to argue that understanding how AR signage appeals to our drives and desires is an important aspect of describing the politics of augmented reality technologies. Perhaps, as Bruno Latour maintains, the collective description and definition of contemporary communications networks is what will allow for the possibility of effective intervention in these networks, and for another small step toward the creation of a livable common world (Latour 2005: 138).

Note

1. "The ruling ideology, in order to be operative, has to incorporate a set of features in which the exploited/dominated majority will be able to recognize its authentic longings. In short, every hegemonic universality has to incorporate at least two particular contents: the 'authentic' popular content and its 'distortion' by the relations of domination and exploitation" (Žižek 1999: 184).

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