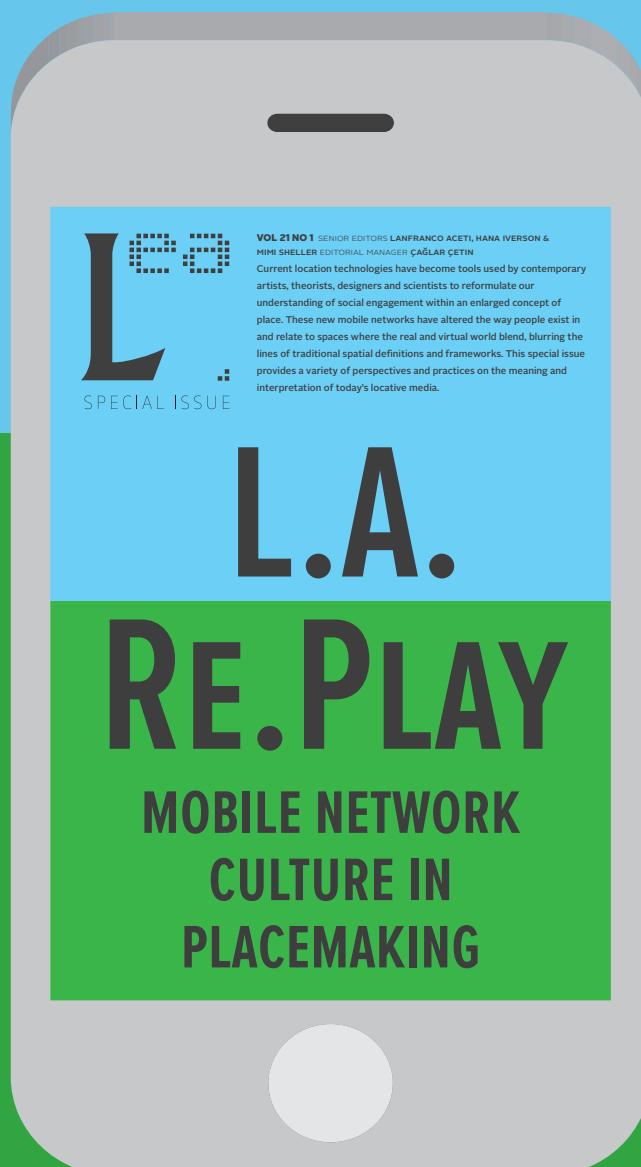


# Lea

SPECIAL ISSUE

**VOL 21 NO 1** SENIOR EDITORS LANFRANCO ACETI, HANA IVERSON & MIMI SHELLER EDITORIAL MANAGER ÇAĞLAR ÇETİN

Current location technologies have become tools used by contemporary artists, theorists, designers and scientists to reformulate our understanding of social engagement within an enlarged concept of place. These new mobile networks have altered the way people exist in and relate to spaces where the real and virtual world blend, blurring the lines of traditional spatial definitions and frameworks. This special issue provides a variety of perspectives and practices on the meaning and interpretation of today's locative media.



LEA is a publication of Leonardo/ISAST.

Copyright 2015 ISAST

Leonardo Electronic Almanac

Volume 21 Issue 1

January 15, 2016

ISSN 1071-4391

ISBN 978-1-906897-36-9

The ISBN is provided by Goldsmiths, University of London.

**LEA PUBLISHING & SUBSCRIPTION INFORMATION****Editor in Chief**

Lanfranco Aceti lanfranco.aceti@leoalmanac.org

**Co-Editor**

Özden Şahin ozden.sahin@leoalmanac.org

**Managing Editor**

John Francescutti john.francescutti@leoalmanac.org

**Editorial Manager**

Çağlar Çetin caglar.cetin@leoalmanac.org

**Art Director**

Deniz Cem Önduygu deniz.onduyu@leoalmanac.org

**Editorial Board**

Peter J. Bentley, Ezequiel Di Paolo, Ernest Edmonds, Felice Frankel, Gabriella Giannachi, Gary Hall, Craig Harris, Sibel Irzik, Marina Jirotka, Beau Lotto, Roger Malina, Terrence Masson, Jon McCormack, Mark Nash, Sally Jane Norman, Christiane Paul, Simon Penny, Jane Prophet, Jeffrey Shaw, William Uricchio

**Cover**

Deniz Cem Önduygu

**Editorial Address**

Leonardo Electronic Almanac

Boston University, Arts Administration

808 Commonwealth Avenue, Room 269E, Boston, MA 02215

[www.bu.edu/artsadmin](http://www.bu.edu/artsadmin)

**P** 617-353-4064 **F** 617-358-1230 **E** [aceti@bu.edu](mailto:aceti@bu.edu)

**Email**

[info@leoalmanac.org](mailto:info@leoalmanac.org)

**Web**

» [www.leoalmanac.org](http://www.leoalmanac.org)

» [www.twitter.com/LEA\\_twitts](http://www.twitter.com/LEA_twitts)

» [www.flickr.com/photos/lea\\_gallery](http://www.flickr.com/photos/lea_gallery)

» [www.facebook.com/pages/Leonardo-Electronic-Almanac/209156896252](http://www.facebook.com/pages/Leonardo-Electronic-Almanac/209156896252)

Copyright © 2015

Leonardo, the International Society for the Arts, Sciences and Technology

Leonardo Electronic Almanac is published by:

Leonardo/ISAST

211 Sutter Street, suite 501

San Francisco, CA 94108

USA

Leonardo Electronic Almanac (LEA) is a project of Leonardo/The International Society for the Arts, Sciences and Technology. For more information about Leonardo/ISAST's publications and programs, see <http://www.leonardo.info> or contact [isast@leonardo.info](mailto:isast@leonardo.info).

Leonardo Electronic Almanac is produced by

Passero Productions.

Reposting of this journal is prohibited without permission of Leonardo/ISAST, except for the posting of news and events listings which have been independently received.

The individual articles included in the issue are © 2015 ISAST.

*To Lorraine and Earle Iverson,  
visible in the space of memory.*

LEONARDO ELECTRONIC ALMANAC, VOLUME 21 ISSUE 1

# L.A. Re.Play: Mobile Network Culture in Placemaking

SENIOR EDITORS

**LANFRANCO ACETI, HANA IVERSON AND MIMI SHELLER**

EDITORIAL MANAGER

**ÇAĞLAR ÇETİN**

The Leonardo Electronic Almanac  
acknowledges the kind support  
for this issue of

BOSTON  
UNIVERSITY

Goldsmiths  
UNIVERSITY OF LONDON



Operational &  
Curatorial Research in  
Contemporary Art, Design,  
Science & Technology

NYU | STEINHARDT

NYUSteinhardt

Steinhardt School of Culture, Education, and Human Development



MUSIC AND PERFORMING ARTS PROFESSIONS

Ron Sadoff, Director

### Music Technology

B.M., M.M., Ph.D.

*Including a new 3-Summer M.M.*

Immersive Audio, Computer Music, Informatics, Cognition, Recording and Production

### Music Composition

B.M., M.M., Ph.D.

Concert Music, Jazz, Film Scoring, Electro-Acoustic, Songwriting

- **Study with a premier faculty** who are active in the local and international music field, including Juan Pablo Bello, Morwaread Farbood, Phil E. Goldston, Paul Geluso, Tae Hong Park, Kenneth Peacock, Agnieszka Roginska, Robert Rowe, S. Alex Ruthmann, Ronald Sadoff, David Schroeder, Mark Suozzo, and Julia Wolfe
- Work within a **large and enriching university environment** in the heart of New York City
- Have access to **state-of-the-art facilities** including the James L. Dolan Music Recording Studio, one of the most technologically advanced audio teaching facilities in the United States
- **Collaborate** with an outstanding variety of department performance groups, along with choreographers, visual artists, writers, filmmakers, and scholars in other fields
- Take advantage of **special courses** offered abroad and during the summer

Visit [www.steinhardt.nyu.edu/music](http://www.steinhardt.nyu.edu/music) or call 212 998 5424 to learn more.



NEW YORK UNIVERSITY

---

## Leonardo Electronic Almanac

### Volume 21 Issue 1

---

**10** **EDITORIAL** Lanfranco Aceti

**14** **EDITORIAL** Mimi Sheller & Hana Iverson

**28** **OPERATION FAUST Y FURIOSO: A TRANS [ ] BORDER PLAY ON THE REDISTRIBUTION OF THE SENSIBLE**

Electronic Disturbance Theater 2.0/b.a.n.g. lab

**44** **SOUND CARTOGRAPHIES AND NAVIGATION ART: IN SEARCH OF THE SUBLIME**

Ksenia Fedorova

**60** **EMERGENT TECHNOLOGY AS ART PRACTICE AND PUBLIC ART AS INTERVENTION**

John Craig Freeman

**72** **CITY... CREATIVITY... AND MEASURE...**

Jeremy Hight

**76** **NARRATIVE IN HYBRID MOBILE ENVIRONMENTS**

Martha Ladly

**96** **AN INTERVIEW WITH JENNY MARKETOU**

Mimi Sheller & Hana Iverson

**110** **INDETERMINATE HIKES +: ECOLOGICAL AWARENESS AND THE MOBILE LANDSCAPE**

Leila Christine Nadir & Cary Peppermint

**124** **VISITING GOOGLE EARTH: GPS ART AND SUBJECTIVE CARTOGRAPHY**

Esther Polak & Ivar van Bekkum

**130** **I-5 PASSING ... 2002-2007**

Christiane Robbins & Katherine Lambert

**140** **THE BODY IMAGE: BODY SPATIALITY IN MOBILE AUGMENTED REALITY PROJECTS**

Sarah Drury

**148** **'EN ROUTE' AND 'PASTCITYFUTURE': MAKING PLACES, HERE AND THERE, NOW AND WHEN**

Ian Woodcock

**160** **MORE THAN JUST A PINPOINT: LOCATIVE MEDIA AND THE CHOROGRAPHIC IMPULSE**

Kim Sawchuk & Samuel Thulin

**178** **LOCATIVE AWARENESS: A MOBILITIES APPROACH TO LOCATIVE ART**

Jen Southern

**196** **OBJECTS AS AUDIENCE: PHENOMENOLOGIES OF VIBRANT MATERIALITY IN LOCATIVE ART**

Jason Farman

**210** **ELASTIC GEOGRAPHIES: LIVING IN THE PROXIMITY OF ELSEWHERE**

Paula Levine

**220** **RESTLESS: LOCATIVE MEDIA AS GENERATIVE DISPLACEMENT**

Teri Rueb

**236** **HYPERALLERGIC INTERVIEW: RICARDO DOMINGUEZ TALKS ABOUT THE TRANSBORDER IMMIGRANT TOOL WITH LEILA NADIR**

# Meanderings and Reflections on Locative Art

**The word ‘locative’ is often accompanied by the word ‘media’ as if it were to seeking a legitimacy in its technologic features more than in the artistry of the production of content.** Instead, I’d like to place the word ‘art’ at the forefront of the argument, and to consider the notion of locative art as art that is spatially contextualized, art that encompasses artistic practices that draw from movement (and/or the lack of it) and location, which is their source of inspiration, content, materiality, and context. This notion can be enlarged to encompass virtual, hybridized, and non-virtual worlds, since there is a notion of spatiality in all of them, although in some artworks this notion may be expressed as an abstraction. The desire is to move away from the word ‘media,’ and to take a stance that defines artworks on the basis of their aesthetic merit, rather than as being hindered by the accompaniment and masquerade of words such as media, which, far from clearing the field, create complex and unwieldy taxonomies of materials, processes, and aesthetics.

This special issue, which is based on the work done by Hana Iverson and Mimi Sheller, might appear similar to the *Leonardo Electronic Almanac* special issue, Volume 14, No. 3, which was entitled “LEA Locative Media Special Issue,” and which hit the ‘electronic waves’ in 2006. There are several reasons why it was time to produce a new issue on Locative Art, and the most important of these was the new sense of sociopolitical consciousness that pioneers of digital technologies and contemporary artists are bringing

forward. Drew Hemment wrote in his introduction to the “LEA Locative Media Special Issue”:

*Artists have long been concerned with place and location, but the combination of mobile devices with positioning technologies is opening up a manifold of different ways in which geographical space can be encountered and drawn, and presenting a frame through which a wide range of spatial practices may be looked at anew.* <sup>1</sup>

It is instead a step forward in the analysis of what has been produced and what locative art has evolved into over the past 10 years, from a nascence of anxiety and hope for its evolution, to its present form as an artistic medium gaining recognition within the complex world of contemporary fine arts.

This special issue should be read as an analysis of these recent evolutions, and of how locative *media* have engaged the world and mapped their own domains in the process of becoming locative *art*, now embedding itself within the increasingly contested realms of public space and social activism.

The media of the ‘locative’ experience have become less and less of prominent features of the aesthetic process and now figure as a component, but not as the component of spatially located and contextualized works of art.

The aesthetic practices of the contributors to this special issue have defined and continue to redefine the

vision of what locative art should be, as well as in what context it should be ‘located,’ and – at the same time – have challenged traditional contextual and relational interpretations of the art object and its social and political functions.

The decision to stress the elements of spatially contextualized art resides in the increased importance that public as well as private space have gained following the technological developments that erode both spaces in favor of invasion of privacy, the blurring of public boundaries, and the control of locations, bodies, and identities. This erosion comes at the hands of corporate, state, and military regimes that, by parading ideas of democracy and social wellbeing, flaunt basic human rights while increasingly enacting dictatorial forms of control and surveillance.

The blurring of the boundaries between public and private is such that the idea of concealing one’s location becomes an insurrectional act, particularly under oppressive regimes such as Turkey, where knowledge of the citizenry’s location is necessary to enforce restrictions on freedom of speech. Movement, speech, media, bodies, and identity appear inextricably interconnected within contemporary societies, in which personal existence is no more, and the idea of switching off – disconnecting oneself from the systems of control and surveillance – is perceived as dangerous, insurrectional, and revolutionary.

The idea of spaces that are and must be contextualized becomes extremely important when bandying about definitions of ‘armchair revolutionaries’ and ‘click activists.’ In fact, while it may be possible to recognize and identify these armchair revolutionaries and click activists in the United States and the United Kingdom, applying the label proves more difficult in other contexts; namely, countries in which the erosion of democracy is more pronounced and readily visible. Tweeting is a

dangerous activity in places like Turkey, Iran, or China, where a tweet or a click may quickly lead to the police knocking on the door, ready to enforce restrictions on freedom of speech, or, more accurately, westernized perceptions of freedom of speech disseminated over the internet that do not necessarily correspond or apply to local realities.

The current furor over whether the President of Turkey, Recep Tayyip Erdogan, looks like Gollum,<sup>2</sup> the fictional character in *The Lord of the Rings* by J. R. R. Tolkien, is but one of many forms of control and crackdown. In Turkey, as elsewhere, this has created a sense of panic among the population which, by self-limiting and self-restricting its freedom, has generated a sense that the state possess a kind of digital panopticon, leading to a wide-spreading malaise of self-censorship and obedience.

This continued crackdown follows the protests at Gezi Park in 2013, after which the Turkish government apparatus refined its methods of censorship. During the Gezi Park protests, people tweeting and retweeting the news were arrested and threatened in a sweeping attempt to demonstrate the government’s ability to ‘locate’ individuals. People with roots in the country were identified, located, and expelled by the state apparatus which targeted individuals and families who did not fit within the new neo-Ottoman agenda.

In this conflict between freedom of speech and censorship, the issues of location, as well as those artworks that use location as an aesthetic element, rise to outmost importance. The ability to locate individuals is paramount in exacting retribution, and locative media become a kind of Trojan horse that facilitates the pinpointing and identification of protesters. At the same time, locative media and augmented reality offer the opportunity to flaunt governmental oppression by layering context over controversial spaces.<sup>3</sup>

"There is now a menace, which is called Twitter," Erdogan said on Sunday. "The best examples of lies can be found there. To me, social media is the worst menace to society."<sup>4</sup>

Erdogan's words are reflected in Amnesty International's report, which reveals the level of intimidation employed by the Turkish government to silence opposition from a variety of sectors within civic society.

"Social media users active during the protests have been prosecuted, while attempts have been made to block the sites that carried their words and videos."<sup>5</sup>

It is the progressively politicized nature of space and location, as well as the act of locating, that makes locative media art political, politicized, and politicizable.<sup>6</sup> Hence, locative media art must be placed in the context of the political stances and struggles, or lack thereof, that will define its aesthetic, or lack of aesthetic. Conor McGarrigle recalls the Situationist International in his construction of locative situations framed as a form of alternative construction and engaged relation with life, a relation that people can define and not just passively consume.

*To counter what they saw as the banality of everyday life, they proposed actively constructing situations rather than merely passively consuming or experiencing them. Rather than describing and interpreting situations, the situationists would seek to transform them. If, as they believed, human beings are 'moulded by the situations they go through' and 'defined by their situation', then they need the power to create situations worthy of their desires rather than be limited to passive consumers of the situations in which they find themselves.*<sup>7</sup>

In sociopolitical and philosophical terms, this analysis provides the opportunity to perceive life as being

founded on the responsibility and sense of gravitas in human action – *faber est suae quisque fortunae* – which, by stressing the possibility of construction – the *artifex* as creator – reestablishes the Situationist International within a locative art practice that constructs and reshapes life in a social context that no longer appears to afford hope.

*This definition of the participant in the constructed situation as an autonomous agent within the structure of the work and not limited to enacting a predefined script is key. I will identify locative works which exhibit this tendency, which go beyond a model of the participant being defined by the application in favour of an open model, a set of procedures or a toolkit with which participants construct their own situation to be 'lived' independently of the artist.*<sup>8</sup>

The definition McGarrigle proposes creates a dichotomy between the sociopolitical constructs and adopted behavioral models in new media versus the open procedures of engagement that enable the *artifex* to construct situations and therefore construct his/her own destiny.

It is this transformative potential emerging from the construction and/or reconstruction of space that, as editors, Hana Iverson and Mimi Sheller want to present and argue in favor of:

*By considering the practices of process-based, socially engaged, conceptual and performance art and their relationship to activism, design and mobile art, we are able to examine the conditions of how these projects may transform place, politics, and the realm of public art.*<sup>9</sup>

This LEA special issue is a survey that explores and aims to understand the sociopolitical possibilities of

contemporary art, and that delves into the realm of location and its contexts.

My hope is that it may offer readers the opportunity to understand the complexity of materials, processes, and contexts – as well as the contemporary responsibilities – that art practices wield in their location and construction of media outside the limitations that Marshall McLuhan defined as "rear-view mirror" approaches.

*... de meo ligurrire libidost.* Gaius Valerius Catullus, fragments.

#### Lanfranco Aceti

Editor in Chief, Leonardo Electronic Almanac  
Director, Kasa Gallery



#### REFERENCES AND NOTES

1. Drew Hemment, "Locative Media," *Leonardo Electronic Almanac, Locative Media Special Issue* 14, no. 3 (July, 2006), [http://lealmanac.org/journal/vol\\_14/lea\\_v14\\_no3-o4/guested.asp](http://lealmanac.org/journal/vol_14/lea_v14_no3-o4/guested.asp) (accessed May 20, 2015).
2. Kareem Shaheen "Erdogan's 'Gollum Insult' a Mistake, Says Lord of the Rings Director," *The Guardian*, December 3, 2015, <http://www.theguardian.com/world/2015/dec/03/lord-of-rings-director-insult-to-erdogan-mistaken-as-gollum-as-charcter-is> (accessed December 4, 2015).
3. I would like to thank Mark Skwarek, John Craig Freeman, Will Pappenheimer and Tamiko Thiel for exhibiting with the Museum of Contemporary Cuts in Istanbul and with Kasa Gallery, <http://www.lanfrancoaceti.com/2013/10/i-occupy/>. In particular Will Pappenheimer placed a large cloud writing with the text 'Why I Occupy' over Gezi Park in Taksim Square, Istanbul. The artwork is still visible and was part of a series of events linked to the panels discussion held at Kasa Gallery titled Making Visible the Invisible: Media, Art, Democracy and Protest.
4. Constanze Letsch, "Social Media and Opposition to Blame for Protests, Says Turkish PM," *The Guardian*, June 3, 2013, <http://www.theguardian.com/world/2013/jun/02/turkish-protesters-control-istanbul-square> (accessed May 20, 2015).
5. "Adding Injustice to Injury: One Year on from the Gezi Park Protests in Turkey," *Amnesty International*, June 2014, [https://www.amnesty.nl/sites/default/files/public/final\\_en\\_30\\_may\\_2014.pdf](https://www.amnesty.nl/sites/default/files/public/final_en_30_may_2014.pdf) (accessed May 20, 2015). Also: Amnesty International, "Turkey: Move to block YouTube ahead of elections points to growing censorship," *Amnesty International*, March 27, 2014, <http://www.amnesty.org/en/for-media/press-releases/turkey-move-block-youtube-ahead-elections-points-growing-censorship-2014-03-21> (accessed May 20, 2015) and "Turkey: Pre-election Twitter shutdown brings internet freedom to a new low," *Amnesty International*, 21 March 21, 2014, <http://www.amnesty.org/en/news/turkey-pre-election-twitter-shutdown-brings-internet-freedom-new-low-2014-03-21> (accessed May 20, 2015).
6. Hans Sluga, *Politics and the Search for the Common Good* (Cambridge: Cambridge University Press, 2014), 191.
7. Conor McGarrigle, "The Construction of Locative Situations: Locative Media and the Situationist International, Recuperation or Redux?," *Digital Creativity* 21, no. 1 (2010): 56.
8. Ibid., 57-58.
9. Hana Iverson and Mimi Sheller, "L.A. Re.Play: Mobile Network Culture in Placemaking," *Leonardo Electronic Almanac* 21, no. 1 (2016).

# L.A. Re.Play: Mobile Network Culture in Placemaking

## INTRODUCTION

Artists, social scientists, and theorists have increasingly explored mobile locative media as a new kind of social and spatial interface that changes our relation to embodiment, movement, place and location. Indeed, many artists and theorists have claimed mobile locative art as a crucial form of social experimentation and speculative enactment. In the social sciences recent work especially draws attention to cultural adoption and everyday appropriation of mobile media, the re-emerging significance of place-making and locatability, and the infrastructures, regulatory regimes, and dynamics of power that shape contexts of use.<sup>1 2 3 4</sup> This work has drawn attention to the intersection of place-making, movement, and political aesthetics. Rowan Wilken emphasizes ideas of "place as relational, as inherently connected to mobility, and as constantly worked out through mundane practice,"<sup>5</sup> drawing on Tim Cresswell's studies of being "on the move."<sup>6</sup> Larissa Hjorth's work on "mobile intimacy,"<sup>7</sup> Tim Ingold's idea of "ambulatory knowing,"<sup>8</sup> and Ingrid Richardson's work on interactive media and forms of "visceral awareness,"<sup>9</sup> amongst others. All of these contributions to theorizing mobile locative media are particularly relevant when it comes to interpreting recent works in mobile locative art.

In the arts and culture fields the debate on mobile media to date has focused on the creative potential of mobile locative media and ubiquitous computing, its cultural impact, and critical responses to mobile digital art.<sup>10 11 12</sup> Some of the most interesting questions concern how new mobile media can change relations

between embodiment, place, and spatial awareness, echoing these debates in the social sciences. For example, media curator and theorist Christiane Paul highlights the importance of the digitally-enhanced body as a new kind of interface:

*[D]igital technologies have expanded the agency enabled by our embodied condition: our bodies can function as interfaces in navigating virtual environments; avatars can be understood as a virtual embodiment; wearable computing can establish a technologized connectivity between bodies; and mobile devices can function as technological extension of embodiment, connecting us to location-based information and enhancing awareness of our environment or "social body."*<sup>13</sup>

Given the significance of artists in the debates about mobile locative media<sup>14 15</sup> (see Southern in this issue), we believe it is a productive time to further explore how artworks using the new contexts afforded by mobile locative media are engaging new kinds of hybrid embodied/digital interactions with place, location, and movement.

How exactly do mobile digital technologies expand the agency of our embodied condition? In 2002, Australian media theorist Ross Gibson was asked what will be the artistry of the future; he replied that "artists will supply us with the beguiling processes of transformation ... artists won't be fabricating objects so much as experiences – they will offer us intensely 'moving' immersion

in (or perhaps beyond) the objective world. This immersion will be so *moving* that the 'objective world' will cease to be sensible in the ways we thought normal."<sup>16</sup> What will exist as art in this future vision? How does mobile art reconfigure objects, subjects, place, space and time? How does mobility extend the discussion around media art through a broader reconfiguration of cognition? As Claire Bishop asks, what does it mean "to think, see and filter affect through the digital"?<sup>17</sup> If the physical world is the ground for the affect produced by the digital, then how do the emerging art practices of mobile locative media immerse participants in site-specificity as well as distant networked places, and unfold local temporalities as well as deeper collective times and histories?

In this special issue we want to argue for the need to radically re-think the genealogy, purposes, and affects of mobile art, in an effort to enlarge the critical vocabulary for the discussion of "digital art," and the divides that it encounters. Arising out of a double session on *Mobile Art: The Aesthetics of Mobile Network Culture in Place Making*, and the associated mobile art exhibition *L.A. Re.Play*, co-organized and co-curated by Hana Iverson and Mimi Sheller, with assistance from Jeremy Hight – and held at UCLA, the Art Center College of Design, and the Los Angeles Convention Center as part of the College Art Association Centennial Conference (Los Angeles, February, 2012) – this project brought together some of the leading U.S. and international artists working with mobile and geo-locative media today. This concentrated series of events, along with this special issue of LEA, provides a platform and situation to reflect upon mobile media art today: where it has come from, how it is being practiced, and where it is heading.

We intend to move beyond a geo-locational or screen-based focus (that has attracted the attention of some artists due to the proliferation of smart-

phones) to address a body of works that extend outward to collective experiences of place. Mobile media art is one of the key arenas in which emergent interactions with the embodied and sensory dimensions of place, movement and presence itself are being explored. Crucially, it can be understood as connected to wider histories of performance art, relational art, immersive theater, experimental video, sound art, and socially engaged public art. Mobile art includes a diverse set of practices that might involve sound walks, psychogeographic drifts, site-specific storytelling, public annotation, digital graffiti, collaborative cartography, or more complex "mixed-reality" interactions. It tends to engage the body, physical location, digital interface, and social relations both near and distant, sometimes in terms of what one contributor calls "relational architecture." Through its unique visual, sonic, haptic, social and spatial affordances, mobile art provides a sensory engagement with virtual and material surroundings, mediated through the participant's embodied sensations augmented by digital technology. Featured at international festivals such as the *International Symposium on Electronic Art* (ISEA), *FutureEverything*, *Conflux* and *Radiator*, it also offers an important locus for thinking about new kinds of social engagement with other people, collectives, or publics.

In introducing this special issue we will focus on three key themes that emerge out of this body of work: first, the ways in which mobile art is socially networked and participatory, often involving the creative collaboration between artists, participants and the broader public, and what the implications of this are; second, the crucial ways in which mobile art engages with location, augmented physical presence, and sensory perceptions of place, eliciting new experiences of "hybrid space" as both a bodily and more-than-bodily experience; and third, the political possibilities for mobile locative media to add new dimensionality to public space, and thereby push the boundaries of civic

engagement and politics in mobile network culture beyond its current limits. Interspersed throughout this introductory discussion we describe and locate the specific essays in the special issue, as well as noting some of the art works in the *L.A. Re.Play* exhibition. The issue itself includes a range of materials generated out of the CAA panels, the exhibition, and ongoing discussions amongst the participants, including artists' descriptions (and images) of their own work and reflection on their practice, more theoretical and historically informed analysis of aspects of mobile and networked art, interviews with artists and between co-participants in the project, and creative writing that emerged out of this year-long process.

#### SOCIALLY NETWORKED AND PARTICIPATORY

##### MOBILE ART

The notion of participatory art has been trying in different ways to enlarge the consideration of art and aesthetics for more than thirty years. Mobile art, like other new media art, has a strong relationship to politically and socially engaged art in that both fields rely on "a highly critical and informed view of interaction, participation and collaboration."<sup>18</sup> The works we present will examine these conditions in more depth. Mobile art often happens outside the space of the gallery or museum, and without any intervening art object, as such, it may be "locative" yet hard to locate. It may appear on hand-held screens, or computer screens, often with the addition of speakers, headphones, or earbuds, but it might also extend far beyond these devices into a wider experiential realm; it may engage with the "virtual" realm, as well as mobilizing various kinds of narrative imagination and imaginaries of place; it may address the present embodied context, even as it interweaves it with histories or futures.

Emergent mobile art forms are able to take seemingly disparate elements and make sense of them to create a coherent yet unique experience for the viewer, listener, or participant. Many mobile art pieces are collaborative – engaging other artists or audiences in a shared vocabulary, and thereby incorporating their contribution into the whole. Umberto Eco, in his "The Poetics of Open Work" refers to open works "as those which are brought to conclusion by the performer at the same time he (or she) experiences them on an aesthetic plane."<sup>19</sup> These works are not open, in the sense of open to interpretation; they are open in the way in which they require participation in order to finish the act of the work itself. This is especially true of mobile artworks in which the relational ethics are a key part of the aesthetic.

The "relational turn" across many art activities and creative disciplines favors methodologies that are interactive, process-oriented rather than outcome-oriented, and open in Eco's terms. "Situated engagement," for example, is a theoretical frame for a participatory design approach that uses mobile technologies to focus on and design with micro-local neighborhoods, in living contexts that invite social participation and are often oriented toward social change and justice. Critic and curator Mimi Zeiger notes the link between "socially engaged art" and "tactical urbanism," which have also been embraced as more mobile and fleeting engagements with urban space:

*[M]any activist designers have embraced "tactical urbanism" as the go-to descriptor (see the recently published and downloadable guidebook *Tactical Urbanism 2: Short-Term Action, Long-Term Change*.<sup>20</sup> [...] these projects are oppositional to the conventional operations – or strategies – of urban planners. Flexible and small scale, often temporary and with limited budgets, tactical projects take advantage of "chance offerings" – public spaces,*

*empty lots, municipal loopholes. They deploy the fleetness and mobility described in [Michel de Certeau's] *The Practice of Everyday Life*.<sup>21</sup>*

Likewise, mobile art can be said to enter the urban realm in a tactical way, making use of existing spatial patterns and routes, handheld devices and forms of navigation, modes of watching and listening, yet bending these towards other purposes. It creates a new relation to place, drawing the participant into a playful and potentially awakened form of engagement; part serendipity, part chance collage, the accidents of mobilized perception form a newly mediated kind of "exquisite corpse" in a surreal game of adventure as artistic venture.

Many of the works in *L.A. Re.Play*, and those discussed in the essays in this special issue, create new modes of creative co-production and networked participation in the city, and require participation in order to be accessed. Each one depends upon its context in the public realm, and plays upon the interdependence of digital and physical experiences, which activates a renewed sense of place and flexible relationship to cartography. Various kinds of soundwalks, along with mobile Augmented Reality, distribute mobile art across a walkable terrain whereby a series of situated visual and sonic elements can be accessed and experienced by an ambulatory audience. Such works have their roots in both land art and sonic artwork, as explored further in the essay contributed by Ksenia Federova on the "sublime" potential of sound. Artist Teri Rueb, for example, whose work was presented in *L.A. Re.Play* and in an essay here, explores in her mobile auditory works "a thinking and doing landscape... to define a radically expanded field in which to consider embodied interaction and mobile media." Experiencing her work helps us "to think bodies, sensations, space and time together."<sup>22</sup> Several artists working with mobile media draw on the history of

psychogeography, originally set in motion as a surrealist experiment with the city through the "derive," a drifting serendipity of encounter, while others lean towards mobile gaming.<sup>23</sup>

The artists working with mobile psycho-geography create new ways to navigate choreographies of place, now augmented with mobile and locational technologies. For example, Leila Nadir and Cary Peppermint of *ecoarttech* present their piece "Indeterminate Hikes+," which "acts as both locative artwork and practice-based inquiry into the imagination of public place and the environment in the context of networked mobility and ubiquitous computing devices." Aesthetically, though, their work is not about the technology or the mobile experience itself, but takes inspiration from Guy Debord's psychogeography, Felix Guattari's lines of flight, John Cage's random yet structured processes, and Michel Foucault's radical ethics of the self. Likewise, Australian architect Ian Woodcock discusses his collaborative works "PastCityFuture" and "en route," which "uses locative technologies, psychogeographic techniques and urban choreography to create in participants a heightened awareness of presence and context, the here and now." So the movements generated in these pieces occur both outside as a transit through space, and inside as a transformative state of being in place.

Choreographies here intersect with cartographies, which emerge as a key terrain for exploration of the digital co-production of space. Once new, but now increasingly routine, digital technologies such as Geo-Positioned Satellite (GPS) navigation systems and popular applications such as Google Earth have transformed the experience of the map as an interactive, dynamic, and multi-scalar interface, as noted especially in the essay by Dutch artists Esther Polak and Ivar Van Bekkum, which describes their project of redeploying Google Earth as an artistic medium. Their

piece A Tom Tom Opera takes the viewer on a drive through a landscape accompanied by a satellite navigation-inspired choral soundtrack, which speeds past with “Doppler effect,” culminating in the visual and sonic crescendo of a crash. They ask: “What happens when people move through public space, listening to an electronic voice which is controlled by an invisible network of information systems?” As a kind of opera situated on the highway, the “visualisation is based on a GPS-track and animated directly in Google Earth, using its digital cartography as a worldwide, spatial opera-stage.” Maps, routes and cartographies are also explored by Robbins and Lambert, whose work “I-5 Passing” represents the atmosphere of a drive along Interstate 5, running between Los Angeles and San Francisco, as a representation of the mobile space of a particular kind of California culture. Both pieces explore the affects of digital cultures blended with cultures of automobility and the re-mixing of past and present temporalities.

Jeremy Hight also contributes to the issue with a meditation on the city of Los Angeles, reminding us of its many pasts, taking its measure, unfurling its maps. Encompassing the geological, the archaeological, the historical, and the creative, this journey through the L.A. of the imagination replays in our minds, transforming the familiar cityscape into a textured urban fabric that is “mutable, surreal, disruptive and often enchanting.”<sup>24</sup> There are many ways of moving with and through “virtual” media that when coupled with narrative and stories seek to re-enchant the disenchanted landscape of the technologically-scripted non-place. Hight’s creative writing piece reminds us that cartographies are also closely related to what Sawchuk and Thulin in their contribution refer to as “chorographies”: “conceived of as a way to reconsider the temporal and affective dynamics of place through the practice of writing, reflection, and artistic practice.”

They draw out the tension between this affective dynamics of meaningful place and the “representational fiction of the pinpoint *within* the mapping process and the implications of this fiction for locative media artists, designers and the publics we desire to engage.” To pinpoint a location does not make it a “place” until it is enacted in relation to a temporal and social context, and a single location may be unstable, and part of many such intersecting contexts.

In effect the participatory, experiential realm of mobile, locative, situated engagement not only completes the circuit of the creative act, but also redefines the consciousness, experience and agency of the participant. The artists and theorists included in this special issue engage, subvert and recombine our perceptions of place, building on traditions of Social Practice Art and Relational Art, but also engaging forms of participatory theater, experimental cinema, and collective narrative. Mobile art in this sense incorporates audiences – calling attention to their very corporeality and social/spatial situatedness – often in challenging ways. Many of these works combine evocative digital imagery, sound walks, mobile narrative, and site specificity, yet they do not necessarily require a high-tech “sentient city”<sup>25</sup> to make them work. They also can be distinguished from more commercial or simply entertaining forms of mobile pervasive gaming although there can be a blurring of the two areas, as found in the series of immersive theater and mobile game works by the collective Blast Theory.<sup>26</sup>

In re-configuring contemporary “technoscapes” and “mediascapes” enacted through the relational embodied praxis of mobile art, such works re-set or re-play “modernity at large” in new ways.<sup>27</sup> Mobile locative art evokes stories and creates new affordances for people to turn public spaces into meaningful places, to turn designed environments into new kinds of public experience, and to turn software interaction into potentially

critical praxis. This leads to the next key element that we want to highlight: the radical mutation that mobile art can offer to our experience of space itself, through the production of a sense of immersion within digitally networked and “hybrid” place as we move through the physical world.<sup>28</sup>

#### HYBRID SPACE AND MOBILE AUGMENTED REALITIES

Mobile media artworks are at once definable and indefinable. They suspend performers and participants in a tension around co-presence and mediated interactions that defy formal modes of presentation. Many works engage, subvert and recombine our experience, perceptions, and interactions with place and location by drawing upon elements of communication and sense perception that are both immediately present and mediated by technology (sight, sound, narrative, affect, memory, history). In this issue, Jason Farman’s analysis of Simon Faithfull’s performance art piece, *o.oo Navigation*, for example, notes the relation between physical objects (such as fences, houses) and virtual objects (such as GPS coordinates, or the Prime Meridian) in a kind of oscillating experiential space. Mobile media artists challenge and equip us to activate new social practices and performances via “hybrid spaces”<sup>29</sup> that blur the distinction between physical and digital, bodily and virtual, artwork and everyday space, creator and audience. Practitioners take it as given that through everyday practices with wireless networks and mobile social media, people are creating new ways of interacting with others, with places, and with screens while moving, or pausing in movement. Emerging practices of “mobile mediality” – understood as a new form of flexible, digitally mediated spatiality<sup>30</sup> – are accomplished in motion, just as the artworks exploring it are not simply new apps, but are experiential happenings, performative interactional events. As such, they have implications for embodied perception.

Mobile arts practices that engage with our increasingly software-embedded and digitally augmented urbanism help to create a greater awareness of what some describe as “remediated” space,<sup>31</sup> “networked place,”<sup>32</sup> or “hybrid space.”<sup>33</sup> Media theorist Adriana de Souza e Silva, in her studies of mobile locative networks and mobile gaming, argues that “Hybrid space abrogates the distinction between the physical and the digital through the mix of social practices that occur simultaneously in digital and in physical spaces.”<sup>34</sup> It is not one or the other, but both at once. Jay Bolter and Richard Grusin in their book *Remediation: Understanding New Media* draw a distinction between immediacy and hypermediacy. The idea of transparent immediacy, or media proposed as “interfaceless” and immersive, occurs in earlier imaginaries of Virtual Reality (VR), imagined as drawing the participant into another world. Hypermediacy, on the other hand, involves a mix or juxtaposition of elements, both digital and physical, being in this sense more like Augmented Reality (AR).<sup>35</sup>

In contrast to ideas of immersive media, therefore, the experience of hypermediated digital space is that it is rapidly dissolving into or permeating everyday life, especially through mobile devices. Elizabeth Grosz, in her book *Architecture from the Outside: Essays on Virtual and Real Space* argues that this dissolve takes place at the level of the perceptual, where there is a “change in our perceptions of materiality, space and information, which is bound directly to or indirectly to affect how we understand architecture, habitation and the built environment.”<sup>36</sup> For artworks created within this hypermediated hybrid environment, the point is to create works that exist in this delimited realm both perceptually and actually. The issues of becoming remain continually processual. Such artworks have a kind of unstable or flickering presence, even while accessing multiple levels of “reality.” They might involve what Paula Levine in her contribution refers

to as “elastic geographies,” in which one cartography is displaced onto another to create a blurred experience of both at once, as in her work *Shadows from Another Place: San Francisco↔Baghdad* (2004). Or the materiality of digital media might involve adapting to weather, noise, and gestures within a kinaesthetic field, even as one follows an abstract GPS coordinate depicted as a blinking dot on a screen, as Sawchuk and Thulin explore in their analysis of works like *Lost Rivers* and *Montreal in/accessible*, and contributor Jen Southern explores in works such as *CoMob*.

The mobile media artists who interest us are precisely those who are exploring how to create or move within these hybrid spaces of amplified (hypermediated) reality via new modes of open (yet critically attuned) engagement with embodied experience, with urban and natural landscapes, and with digitally-mediated public space. Southern, in her contribution to this issue, delineates six elements of “locative awareness” that includes a heightened sensitivity to being situated, embodied, relational, networked, experimental, and multiple. These embodied and networked engagements with hybrid experiences transform the familiar cityscape (or, in some cases, non-urban landscape) through an intensified awareness of the urban fabric, its multiple architectures, streetscapes, and social flux, as strangely mutable, perhaps disruptive or uncanny, even enchanting. Ecoarttech’s “IndeterminateHikes+,” for example, re-enchants the city by importing into it an experience of the natural:

*This mobile app imports the rhetoric of wilderness into virtually any place accessible by Google Maps, creates hikes, and encourages its hiker-participants to treat the locales they encounter as spaces worthy of the attention accorded to sublime landscapes, such as canyons and gorges. Thus the ecological wonder usually associated with “natural” spaces, such as national parks, is re-appropriated*

*here to renew awareness of the often-disregarded spaces in our culture that also need attention, such as alleyways, highways, and garbage dumps. This project extends ecological awareness into mobile spaces, into the places humans actually live, democratizing conversations about environmental sustainability and ecological management that too often occur only in a scientific context.*

Contributor Martha Ladly also considers how mobile technologies “are grounded in place, creating responsive hybrid spaces in which the real, embodied, personal experiences and stories of the artist and the audience may create a powerful, participatory opportunity.” Mobile art thus addresses crucial theoretical questions about how and where participatory politics takes place, when the relation between physical space, networked space, and the growing experience of hybrid space involves the physical and the digital as co-synchronous sites of engagement, conversation, and responsive communication.

By provoking questions about the possibilities and limits of the new borders between the physical and the virtual, the real and the imaginary, the tactile and the tactical – many mobile artworks reinvent a relationship to aesthetic digital objects, interrogate public presence and memory, and deploy new strategies for intervention. Teri Rueb’s soundwalking piece *Elsewhere : Anderswo* is a site-specific sound installation across two sites. Visitors carry small GPS-equipped computers and wear headphones. Sounds play automatically in response to their movements in the landscape. As they move through layer upon layer of responsive sound, [she writes] “little elsewhere” are grafted onto the landscape in the form of variously local and foreign, synchronous and asynchronous “soundtracks.” Place is a verb. Place making and the meaning of place, “placings,” unfold as a continuous dialogue between the physical and built environment and its inhabitants.

Landscape is a special kind of “placing.” Yet her interventions she argues, are also “displacements,” which introduce multiple sensory and perceptual layers into the temporalities and subjectivities of moving through a landscape.

Participants in soundwalks can experience an embodied engagement with place and, in some cases, a re-mediated performance of everyday actions that reorganize the experience of space and time. This type of work is situated in the embodied sensory experience of landscape, but also lends itself to collective sound-mapping and the production of new mixed-reality soundscapes and mobile acoustic ecologies. Ross Gibson notes that “The rhythms with which and within which a person can perceive: the time spans in which we sense our acuity, these time spans are becoming ever more elastic.”<sup>37</sup> Mobile art becomes a way to perceive this elasticity of temporality, and reflect upon movement-space as we co-create it. And such elasticity of perception plays upon the “displacements” noted by Rueb and the “entanglements” alluded to by Southern, both of whom use GPS to subtly interfere with perceptions of place and awareness of various kinds of placement.

Locative media art has the capacity to bring together multiple rhythms of landscape that combine the live, temporal, and ephemeral aspects of a socially mapped place-ment. Picking up on Henri Lefebvre’s (2004)<sup>38</sup> concept of rhythmanalysis, geographer Tim Edensor argues that “rhythmanalysis elucidates how places possess no essence but are ceaselessly (re) constituted out of their connections... Places are thus continually (re)produced through the mobile flows which course through and around them, bringing together ephemeral, contingent and relatively stable arrangements of people, energy and matter.”<sup>39</sup> Through a kinaesthetic sense of bodily motion we apprehend time and space, but through the inter-

ventions of mobile art we also inhabit it differently. Through sensory perception and physical mass, we orient ourselves toward the world, and create both place and displacement through the frictions and rhythms of our mediated movement. Movements have different rhythms, and those rhythms of movement flow through cities and landscapes, shaping their feel, sculpting their textures, and making places.<sup>40</sup> For Lefebvre such intersecting trajectories and temporalities even included the polyrhythms of trees, flowers, birds, insects, and the movement of the earth, sun and soil down to the molecular and atomic levels.

So it is the coming and going of all of these mobile assemblages and interweaving rhythms that mobile artists are exploring as they experiment with the new “movement-space,”<sup>41</sup> a dynamic digitally-mediated spatial awareness mediating between bodies, architectures, and natures. Social theorists argue that there are ambivalent and contested “affordances” that “stem from the reciprocity between the environment and the organism, deriving from how people are kinaesthetically active within their world.”<sup>42</sup> “Motion and emotion” are “kinaesthetically intertwined and produced together through a conjunction of bodies, technologies, and cultural practices.”<sup>43</sup> The chorographies and choreographies of mobile art become a way of conjoining the affective experience of place and the effects of hypermediated locatability. Highlighting temporality becomes a way of re-thinking location, while the acute awareness of matching a physical location with a virtual object while using mobile locative media assists in a re-thinking of temporality and place. In some cases this new orientation is connected to a politics of place, location, and embodiment. Our final concern is to ask what the political implications are of some of the recent entanglements of mobility, location, and public art.

## POLITICAL ART IN NETWORKED PUBLIC SPACE

Mobile artists are exploring how to create hybrid spaces of amplified reality as new modes of open engagement with embodied experience and public space. Ultimately such projects may transform place, politics, social research, and art itself, its modes of practice and forms of dissemination and engagement. Simon Sheikh in his essay "In the Place of the Public Sphere? Or the world in Fragments" refers to "counter-publics" that "entail a reversal of existing practices into other spaces and identities and practices."<sup>44</sup> While the notion of counter-publics has a long history<sup>45</sup> there is a shifting sense of publics today, and a shifting understanding of what is public, due to a blurring of public and private as one enfolds into the other.<sup>46</sup> Like other critics of the Habermasian public sphere such as Iris Marion Young, Nancy Fraser, Lauren Berlant and Michael Warner, Sheikh goes on to call for this counter-public to be "relational, articulatory and communicatory."<sup>47</sup> As new hybrid spaces and networked places emerge from contemporary practice, they have the potential to transform modes of political engagement and participation in the public sphere and to generate transformative hybrid approaches to the natural-social-spatial-cultural matrix in which we move, dwell, and create the future. How does this new public become a platform for different and oppositional subjectivities, politics and economies, and thereby frame a new public art?

One crucial political intervention of mobile art concerns the ways in which it brings the virtual, the augmented, and the digital into conversation with the production of bodies, spaces, sensation and affect. Sarah Drury, in particular, explores in her essay the forms of "body spatiality" that emerge in mobile augmented reality artworks. She draws on Elizabeth Grosz's work to describe the "zone of sensitivity" that occur between an individual body and the spaces it inhabits.<sup>48</sup> Mobile AR works can intervene in such internalized body images by reconfiguring

the spaces with which they interact. As geographer Peter Merriman notes, "writings on mobility and non-representational theory" have begun to trace "the more-than-representational, performative, expressive improvisations of bodies-in-movement-in-spaces" by describing "the production of complex entwined performativities, materialities, mobilities and affects of both human embodied subjects and the spaces/places/landscapes/environments which are inhabited, traversed, and perceived."<sup>49</sup> Mobile augmented reality opens up our perception and bodily experience of the spaces through which we move, allowing the materialities and performativities of buildings, streets, surfaces, and other non-human elements of space to evoke a new kind of body spatiality – which has political implications for individual and collective agency and capacities to mobilize.

Some mobile artworks raise personal and political questions about what constitutes a public space, or a public sphere, while others address the more dystopian elements of surveillance, inclusion/exclusion, and (dis)connection in the digital era. When the group Manifest AR uses site-specific augmented reality digital imaging as an interventionist public art to infiltrate highly regulated public spaces such as Tianamen Square in China, or the US-Mexico border where immigrants are dying in the desert, or even the Museum of Modern Art in an illicit AR exhibit, it engages the overlaying quality of augmented reality to seed our political imagination with new possibilities. As they describe it:

*The group sees this medium as a way of transforming public space and institutions by installing virtual objects, which respond to and overlay the configuration of located physical meaning. [...] Whereas the public square was once the quintessential place to air grievances, display solidarity, express difference, celebrate similarity, remember, mourn, and reinforce shared values of right and wrong, it is no*

*longer the only anchor for interactions in the public realm. That geography has been relocated to a novel terrain, one that encourages exploration of mobile location based public art. Moreover, public space is now truly open, as artworks can be placed anywhere in the world, without prior permission from government or private authorities – with profound implications for art in the public sphere and the discourse that surrounds it.*

Other works present other kinds of opportunities to re.think, re.experience, and re.play an awareness of space, landscape and the city that spans the local and the global, the public and the intimate, calling into question the bases for such distinctions and their contemporary blurring. Artist Jenny Marketou, interviewed in this issue, uses "the city as a space and the electronic communication networks as platforms and creative tools for intervention and connection between exhibition space, public space and social interaction." Notably her work engages with the phenomena of drone-like surveillance cameras floating above public space, closed circuit television, and the mixture of these low-resolution moving image technologies with globally networked computers and social media platforms; all of which are enacted on participating viewers crossing through public spaces of the city. She is concerned with what the new architecture and protocols of wireless networks do in terms of public surveillance, data mapping, knowledge, information and communication, issues which have become central in the field of mobile media studies.<sup>50</sup> Locatability has become increasingly commoditized (as something apps and big data companies trade in) and politicized (placed under sous-veillance or resisted by masking location); thus mobile locative art can remind us of what is at stake in being un/locatable.<sup>51</sup>

Paula Levine's *The Wall - The World*, which was displayed as part of *L.A. Re.Play*, allows viewers to

transport the "security wall" that Israel built to control Palestinian territories on the West Bank, effecting an imaginary mobility through a transposed experience of the politics of place. Focusing on a small segment of the barrier, about a 15-mile area just east of Jerusalem extending between Abu Dis in the south and Qalandiya in the north, *The Wall - The World* lets the viewer envision this 15-mile segment of the West Bank wall transposed onto any city in the world in Google Earth. The wall appears on the left side of the screen in the West Bank, and on the right side of the screen, in the viewer's city of choice. Using Google Earth's navigation tools as a kind of imaginary mobility, viewers can explore the impact of the structure in both areas simultaneously. *The Wall - The World* is part of *Shadows From Another Place*, a series of work that maps the impact of distant events in local terms, on local ground. It produces an effect that Ricardo Dominguez of Electronic Disturbance Theater (EDT) calls "lobal," in which the global is processed through and tamed within the local, in contrast to either the predominance of the global or even the "glocal," in which the local is transformed by global networks.<sup>52</sup>

The Transborder Immigrant Tool by EDT/b.a.n.g. lab (Ricardo Dominguez, Brett Stalbaum, Amy Sara Carroll, Micha Cárdenas, Elle Mehrmand), which was also presented in *L.A. Re.Play*, is a project designed to repurpose inexpensive mobile phones that have GPS antennas to become a compass and digital divining rod of sorts. Through the addition of software that the team designed, it can help to guide dehydrated migrants lost in the deserts of the US-Mexico border to water caches established by activists. It provides poetic nourishment as well, in the form of text messages conveying advice and inspiration. As an actual hand-held device, it serves as a practical and aesthetic intervention in the border, humanizing the harsh politics of the exclusionary international boundary; but it is also a disruption of the political space of the border and of the

*aesthetics of the border*, generating intense debate and critical thought as much as material intervention. It is a clear example of the potential for critical design and its ability to make you think. As Fernanda Duarte has noted in her interpretation of the *Transborder Immigrant Tool* as a kind of tactical media, it “constitutes a model of micropolitics in practice because their subversive and critical poetics invents alternative lines of flight, and proposes temporary and nomadic constructions without making claims for a revolutionary transformation of reality or utopian designs.”<sup>53</sup> In this issue, Electronic Disturbance Theater (EDT) have composed another kind of creative tactical intervention in what they name the “trans [ ] border.” They offer the original piece “Faust y Furoso” as a play that plays with genres, boundaries, borders and crossings. Their work is further contextualized by an interview with Ricardo Dominguez, conducted by *L.A. Re.Play* participant Leila Nadir.

We hope this set of sessions, art exhibition, and this special issue of LEA will begin to lay the groundwork for a more sophisticated critical evaluation of mobile art that is fully situated in its historical context, its contemporary practice and its future potential. By considering the practices of process-based, socially engaged, conceptual and performance art and their relationship to activism, design and mobile art, we are able to examine the conditions of how these projects may transform place, politics, and the realm of public art. Visualizing internal emotional processes and relating them to route or wayfinding; constructing narratives in a virtual and spatial locality that reveal attachments and connections; positioning oneself imaginatively and actually along a continuum of nature and technology; and exploring the ephemeral quality of technologically mediated art work all assume heightened resonance when they are located in place.<sup>54</sup> Mobile locative media engages strategies that work against the assumptions and stabilities of site and lo-

cation and are articulated through the interdisciplinary engagement of what has become a new entanglement of art with the social, technological, cartographic, and political implications of mobility.

#### ACKNOWLEDGEMENTS

We would like to thank all of the contributors to this issue, participants in the CAA panels, and the artists in the *L.A. Re.Play* show for their effort and patience in bringing this special issue to publication. Thanks to Jeremy Hight for inspiring the initial idea of translating the *L.A. Re.Play* creative and scholarly works into a LEA journal, and to Lanfranco Aceti for seeing it through. Thanks also to Teri Rueb for connecting us to sources for the L.A. activities and to Ferris Olin, for initiating the collaboration with the College Art Association. Thank you to the Center for Mobilities Research and Policy at Drexel University, for its sponsorship of the exhibition and contributed support to the journal.

#### Mimi Sheller

Professor, Sociology, Drexel University  
*mimi.sheller@drexel.edu*  
[www.drexel.edu/mobilities](http://www.drexel.edu/mobilities)

#### Hana Iverson

Independent Media Artist  
*hanaiver@gmail.com*  
[www.hanaiverson.com](http://www.hanaiverson.com)

#### REFERENCES AND NOTES

- Rowan Wilken and Gerard Goggin, eds., *Mobile Technology and Place* (London: Routledge, 2012); and Rowan Wilken and Gerard Goggin, eds., *Locative Media* (London: Routledge, 2014).
- Adriana De Souza e Silva and Jordan Frith, *Mobile Interfaces in Public Spaces: Locational Privacy, Control and Urban Sociability* (London and New York: Routledge, 2012); and Adriana De Souza e Silva and Mimi Sheller, eds., *Mobility and Locative Media: Mobile Communication in Hybrid Spaces* (London and New York: Routledge, 2015).
- Gerard Goggin and Larissa Hjorth, eds., *The Routledge Companion to Mobile Media* (New York: Routledge, 2014).
- Rowan Wilken, “Mobile Media, Place and Location,” in *The Routledge Companion to Mobile Media*, ed. Gerard Goggin and Larissa Hjorth (New York: Routledge, 2014), 514–527.
- Rowan Wilken, “Mobile Media, Place and Location,” in *The Routledge Companion to Mobile Media*, ed. Gerard Goggin and Larissa Hjorth, 516 (New York: Routledge, 2014).
- Tim Cresswell, *On the Move: Mobility in the Western World* (London: Routledge, 2006).
- Larissa Hjorth, “Still Mobile: A Case Study on Mobility, Home, and Being Away in Shanghai,” in *Mobile Technology and Place*, ed. Rowan Wilken and Gerard Goggin (New York: Routledge, 2012).
- Tim Ingold, *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill* (London: Routledge, 2000).
- Ingrid Richardson, “Pocket Technospaces: The Bodily Incorporation of Mobile Media” in *Mobile Technology and Place*, ed. Rowan Wilken and Gerard Goggin (New York: Routledge, 2008), 66–76.
- Christiane Paul, *Digital Art*, Revised & Expanded (London: Thames & Hudson, 2008); and Christiane Paul, ed., *New Media in the White Cube and Beyond: Curatorial Models for Digital Art* (Berkeley, CA: University of California Press, 2008).
- Ulrik Ekmann, ed., *Throughout: Art and Culture Emerging with Ubiquitous Computing* (Cambridge, MA: MIT Press, 2012).
- Claire Bishop, “Digital Divide,” *Artforum* 51, no. 1 (2012): 435–441.
- Christiane Paul, “Contexts as Moving Targets: Locative Media Art and the Shifting Ground of Context Awareness,” in *Throughout: Art and Culture Emerging with Ubiquitous Computing*, ed. Ulrik Ekmann (Cambridge, MA: MIT Press, 2012), 14.
- Eric Gordon and Adriana de Souza e Silva, *Net Locality: Why Location Matters in a Networked World* (Chichester, England: Wiley-Blackwell, 2011).
- Adriana De Souza e Silva and Mimi Sheller, *Mobility and Locative Media*.
- Ross Gibson, “The Time Will Come When...,” in *Future Cinema: The Cinematic Imaginary after Film*, ed. Jeffrey Shaw and Peter Weibel (Cambridge, MA: MIT Press, 2002), 570.
- In the 50th anniversary issue of *Art Forum*, which focused on new media art, influential art critic Claire Bishop asks “Whatever happened to digital art? While many artists use digital technology, how many really confront the question of what it means to think, see, and filter affect through the digital? How many thematize this, or reflect deeply on how we experience, and are altered by, the digitization of our existence? I find it strange that I can count on one hand the works of art that do seem to undertake this task.” [Claire Bishop, “Digital Divide,” *Artforum* 51, no. 1 (2012): 436.]
- Beryl Graham and Sarah Cook, *ReThinking Curating: Art after New Media* (Cambridge, MA: Leonardo Books / MIT Press, 2010).
- Umberto Eco, *The Open Work [Opera aperta]*, trans. Anna Cancogni (Cambridge, MA: Harvard University Press, 1989).
- Nato Thompson, “Tactical Urbanism 2,” Streets Plan Collaborative, [http://issuu.com/streetplanscollaborative/docs/tactical\\_urbanism\\_vol\\_2\\_final?e=4528751/2585800](http://issuu.com/streetplanscollaborative/docs/tactical_urbanism_vol_2_final?e=4528751/2585800) (accessed October 10, 2014).
- Mimi Zeiger, “The Interventionist’s Toolkit: 4,” *Places Journal*, March 2012, <https://placesjournal.org/article/the-interventionists-toolkit-project-map-occupy/> (accessed October 10, 2014)
- Teri Rueb’s *Trace* (1999) was one of the first geo-annotated mobile art projects, using GPS coordinates embedded in the landscape to access a sound installation designed as a memorial environment in Yoho National Park, British

- Columbia. Her more recent project *Elsewhere : Anderswo* engages visitors in a kind of play with urban place and space. See her essay in this issue for further discussion.
23. Mobile gaming combines GPS with Bluetooth short range data exchange, WiFi wireless internet, SMS short messaging service and cell networks and has emerged alongside locative art as an experimentation with urban public space via forms of "radical play" inspired by Situationist practices and ideas like the "derive" and unitary urbanism. See Sophia Drakopoulou, "A Moment of Experimentation: Spatial Practice and Representation of Space as Narrative Elements in Location-based Games," *Aether: Journal of Media Geography* 5A (2010): 63-76; and Adriana De Souza e Silva and Daniel M. Sutko, eds., *Digital Cityscapes: Merging Digital and Urban Playspaces* (New York: Peter Lang, 2009).
24. Siobhan O'Flynn, "Nuit Blanche and Transformational Publics," in "Civic Spectacle," ed. Jim Drobnick and Jennifer Fisher, special issue, *Public* 23, no. 45 (2012), 28-45.
25. Mark Shepard, ed., *Sentient City* (Cambridge, MA: MIT Press, 2011).
26. "Rider Spoke" (2007) is a mobile game for urban cyclists, designed by the British collective, Blast Theory. The idea is to combine theater with cycling and mobile game play in a public urban environment. Cycling through the streets at night, equipped with a mobile attached to the handlebars, participants find a hiding place to record a short message in response to a question posed, and then search for the hiding places of other participants' messages. "Rider Spoke" was created in October 2007 in London, and has been shown and played in Brighton, Athens, Budapest, Sydney, and Adelaide. Their ideas of immersive theater and interactive art were developed further in another hybrid mobile gaming project, "You Get Me" (2008), and later "I'd Hide You" (2012) launched at the FutureEverything Festival 2012 in Manchester. Participants logged in online to join a team of runners live from the streets of Manchester and saw the world through their eyes as they stream video, while playing a game of team tag.
27. Arjun Appadurai, *Modernity at Large: Cultural Dimensions of Globalization* (Minneapolis, MN: University of Minnesota Press, 1996).
28. Eric Gordon and Adriana de Souza e Silva, *Net Locality*; and Adriana De Souza e Silva and Mimi Sheller, *Mobility and Locative Media*.
29. Adriana De Souza e Silva and Mimi Sheller, *Mobility and Locative Media*.
30. Mimi Sheller explores the idea of "mobile mediality" in the essay "Mobile Mediality: Locations, Dislocations, Augmentation," in *New Mobilities Regimes in Art and Social Sciences*, ed. Suzanne Witzgall, Gerlinde Vogl, and Sven Kesselring (Aldershot, England: Ashgate, 2013), 309-326, arguing that "Locative art and mobile gaming are two of the arenas in which such emergent remediations are being explored, as old media recirculate via new media into alternative networked spaces" and this is connected to "a hypermediation of streets, urban space, public and private places, and gaming practices" (p. 312). See also Mimi Sheller, "Mobile Art: Out of Your Pocket," in *The Routledge Companion to Mobile Media*, ed. Gerard Goggin and Larissa Hjorth (London: Routledge, 2014), 197-205.
31. Jay Bolter and Robert Grusin, *Remediation: Understanding the New Media* (Cambridge, MA: MIT Press, 1999).
32. Kazys Varnelis and Anne Friedberg, "Place: Networked Place," introduction to *Networked Publics*, ed. Kazys Varnelis (Cambridge, MA: MIT Press, 2006), <http://networked-publics.org/book/place.html> (accessed October 10, 2014).
33. Adriana De Souza e Silva and Daniel M. Sutko, *Digital Cityscapes*.
34. Adriana De Souza e Silva, "From Cyber to Hybrid: Mobile Technologies as Interfaces of Hybrid Spaces," *Space and Culture* 9, no. 3 (2006): 261-278.
35. Jay Bolter and Richard Grusin, *Remediation*.
36. Elizabeth Grosz, quoted in Jason Farman, *Mobile Interface Theory: Embodied Space and Locative Media* (London and New York: Routledge, 2012), 36.
37. Ross Gibson, "The Time Will Come When..." 571.
38. Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life* (London: Verso, 2004).
39. Tim Edensor, "Commuter: Mobility, Rhythm, Commuting," in *Geographies of Mobilities: Practices, Spaces, Subjects*, ed. Tim Cresswell and Peter Merriman, (Farnham and Burlington, VT: Ashgate, 2011), 189-204.
40. Tim Edensor, ed., "Introduction: Thinking about Rhythm and Space," in *Geographies of Rhythm* (Aldershot, England: Ashgate, 2010).
41. Nigel Thrift, "Movement-space: The Changing Domain of Thinking Resulting from the Development of New Kinds of Spatial Awareness," *Economy & Society* 33, no. 4 (2004): 582-604.
42. Phil Macnaghten and John Urry, "Bodies in the Woods," *Body and Society* 6, nos. 3-4 (2000): 169.
43. Mimi Sheller, "Mobile Publics: Beyond the Network Perspective," *Environment and Planning D: Society and Space* 22, no. 1 (2004): 39-52.
44. Simon Sheikh, "In the Place of the Public Sphere? Or the World in Fragments," *republicart*, June 2004, [www.republicart.net/disc/publicum/sheikh03\\_en.htm](http://www.republicart.net/disc/publicum/sheikh03_en.htm) (accessed October 9, 2014).
45. Mustafa Emirbayer and Mimi Sheller, "Publics in History," *Theory and Society* 28, no. 1 (1999): 145-197.
46. Mimi Sheller and John Urry, "Mobile Transformations of 'Public' and 'Private' Life," *Theory, Culture and Society* 20, no. 3 (2003): 107-125.
47. Simon Sheikh, "In the Place of the Public Sphere? Or the World in Fragments."
48. Elizabeth Grosz, *Architecture from the Outside: Essays on Virtual and Real Space* (Cambridge, MA: MIT Press, 2001).
49. Peter Merriman, "Roads: Lawrence Halprin, Modern Dance and the American Freeway Landscape," in *Geographies of Mobilities: Practices, Spaces, Subjects*, ed. Tim Cresswell and Peter Merriman (Farnham and Burlington, VT: Ashgate, 2011), 99.
50. Adriana De Souza e Silva and Jordan Frith, *Mobile Interfaces*.
51. Adriana De Souza e Silva and Mimi Sheller, *Mobility and Locative Media*.
52. As described by Ricardo Dominguez in an oral presentation during the L.A. Re.Play event at the Art Center College of Design, January 2012.

# LOCATIVE AWARENESS

## A Mobilities Approach to Locative Art

by

Jen Southern

Artist and Lecturer in Fine Art  
Lancaster University, UK  
j.a.southern@lancaster.ac.uk  
<http://www.theportable.tv>

### INTRODUCTION

In the past decade there has been a developing interdisciplinarity between the sociology of mobilities<sup>1</sup> and locative art practice. In the sociology of mobilities artists are often cited for their role in the development of locative media,<sup>2</sup> and have been credited with influencing the "current condition of location awareness."<sup>3</sup> This text explores a sense of 'locative awareness' emerging in art practice through the context of mobilities research.

The term 'locative media' was coined in 2002 to describe an emerging interest in newly available more accurate Global Positioning System (GPS) data<sup>4</sup> that enabled artists to work more easily with location data. Initially, locative art was described as two general types: 'annotative', in which layers of data, images, text and video are mapped to specific locations and browsed by moving through those environments, and 'phenomenological', involving the tracing of movement through landscape.<sup>5</sup> The project 34 North 118 West by Knowlton, Spellman & Hight (2002)<sup>6</sup> is a formative example of annotative work. It combined historical research and contemporary storytelling to add geolocated layers of narrative to an area of Los Angeles

### ABSTRACT

Over the last decade the impacts of global mobilities have become increasingly visible in the parallel developments of locative media in art practice and a new mobilities paradigm in the social sciences. In 2006, in a special issue of Leonardo locative art was described as two broad areas of annotative and phenomenological practice. This paper uses the new 'critical mobilities' approach that has arisen in recent social science to suggest a broadening of those categories to include situated and embodied, mobile, relational, networked, experimental and multiple practices. I argue that this multiple, entangled and assembled description of locative media contributes to a new sense of 'locative awareness'.

that had formerly been a rail-yard. Participants walked through the space with an early tablet PC and their location triggered images, sounds and texts to appear, juxtaposed with the current physical landscape. Teri Rueb's work *Drift* (2004)<sup>7</sup> also used this annotative method, but the geo-located sound samples moved in and out with the tide, so a sound that might have been heard on the beach at low tide could be heard in the town at high tide, adding temporal rhythms to the way the content was layered over the land.

From a phenomenological perspective artists Daniel Belasco Rogers and Sophia New have used GPS to track their own journeys on a daily basis, thus making maps of the regions that make up their daily lives,<sup>8</sup> while artists such as Hamilton, Southern & St Amand made tracks of multiple participants<sup>9</sup> and Esther Polak and Ieva Auzina followed the journeys of human and non-human actors<sup>10</sup>. The *Milk* project<sup>11</sup> by Polak and Auzina, for example, tracked farmers and cows

in their fields in Latvia, and followed the milk as it was transported to the Netherlands, used to produce cheese and then sold. GPS tracks of journeys have also been used in conjunction with other data such as stress levels or sound to make maps of subjective experiences of place.<sup>12</sup>

Over the past decade, utopian and dystopian discourses have gathered around locative media and urban computing.<sup>13</sup> In the field of digital art, curator Andreas Broeckman noted that the term 'locative' relates both to the potentials of enriching shared physical spaces and the darker capacity of being able to locate users, suggesting that locative art risked becoming "an avant-garde of the 'society of control.'"<sup>14</sup> Artists working in the early days of locative media were making public audiences more aware of the potential of GPS while correspondingly, and sometimes unintentionally, trail blazing and advertising its commercial potentials.<sup>15</sup> These artists were also filling a

critical gap by building human-centred applications that "raise fundamental questions about the nature of public space and surveillance" in a way that was said to be unprecedented in the development of any other technology.<sup>16</sup>

In parallel sociologists writing about the development of locative media and locative mobile social networks (LMSN), have cited the role that artists played in its development,<sup>17</sup> suggesting that locative artists have had an impact in the development of mobile methods in social science and investigating the politics of mobile media and LMSN's.<sup>18</sup> Locative art as a genre has been exhibited and discussed at international digital arts festivals such as the *International Symposium on Electronic Art* (ISEA), *FutureEverything*, *Conflux* and *Radiator*, and in special issues of journals such as *Leonardo*, *Digital Creativity* and *Artforum*, and the scope of this work has expanded in relation to broader issues of mobility. Throughout the text I refer to artworks, some of which are known within the field of locative media, others that relate to the wider field of mobilities.

The mobilities paradigm in social sciences has also emerged as an interdisciplinary research area over the past decade, studying the mobilities and immobilities that are defining features of social life. Mobility and immobility refer to the physical movement of goods, objects and services; the travel of people for work, leisure, migration and escape; imaginative travel in images and media; and communication and virtual travel through connected technologies.<sup>19</sup> GPS devices have been used in mobilities research for their capacity to gather quantitative data about the movement of people,<sup>20</sup> however, GPS is not just a data collection tool, it is also a system that is deeply entangled with mobility. Büscher, Urry and Witchger suggest that analysis of mobilities and mobility systems "where each is in an adaptive and evolving relationship with each other" is

a form of post-human analysis, and that "the powers of 'humans' are co-constituted with/by various material agencies."<sup>21</sup> Drawing on the work of Bruno Latour, they suggest that people have never been simply human or social but are socio-material assemblages that are often made through movement and (im)mobility. I use the term assemblage in this article to refer to heterogeneous collections of human, non-human and technical actors that are associated with and act upon each other, in ongoing and emergent processes.

There is a developing dialogue between the study of mobilities and locative art in recent exhibitions such as *LA Re.Play* (Sheller, Iverson & Hight 2012)<sup>22</sup>, *Dislocations* (2011), *The Mobility Project* (2011) and *Re-Drawing Boundaries* (Leonardo Electronic Almanac, 2011-13), but also in research networks like *Mobile Lives Forum* and *PLAN: Pervasive and Locative Arts Network* (2005), arts conferences and festivals such as *Futuresonic* (2006) and *Tracing Mobility* (2011), and social science conferences including *Mobilities in Motion* (2011), *Local & Mobile* (2012), *College Arts Association* (2012) *Differential Mobilities* (2013) and *Mobility Futures* (2013).

In this interdisciplinary context artists have moved beyond annotative and phenomenological practices. A new sense of 'locative awareness' is emerging that goes beyond annotative and phenomenological descriptions and that is closely related to the concerns of the mobilities paradigm. This new sense of locative awareness expands an understanding of what is at stake in changes brought about by technologies of location and distance, not only in art practice but in examples in practical and social use including the interlinked benefits and problems of location based communication for: social interaction and connection; navigation and communication between emergency services; and increased efficiency in fleet tracking and transport services.

There are six aspects of 'locative awareness' that I will outline, they are not new in themselves but their combination produces new relationships to location: *situated and embodied* awareness, the way that the world is experienced through the senses and in situated action;<sup>23</sup> *mobile* awareness, experienced through movement;<sup>24</sup> a *relational* awareness of place brought about by social and participatory interactions that are performed and through which location is enacted;<sup>25</sup> an awareness of *networks* that are connected to presence in space and that extend that presence;<sup>26</sup> an *experimental* awareness, the process through which actions test, explore, observe and critique in location;<sup>27</sup> and an awareness of the *multiplicity* of perspectives that we inhabit. The next section begins by describing a broader landscape of GPS technology, and then outlines how the six aspects of locative awareness emerged within art practice and social science research and led to this area of work. The final section is a more theoretical discussion exploring how the six aspects of locative awareness are entangled together.

## LOCATING GLOBAL POSITIONING SYSTEMS

In order for artists to work with GPS they must participate in vast networks, from the US Department of Defense that developed the Navstar GPS satellites, via commercial companies like *Tom Tom* and *Garmin* who produce GPS devices, to the individual satellite navigation ("sat nav") device that gives directions for walking or driving. GPS operates technically on scales that range from the planetary (satellites at 20,200 km above the earth) to the sub-atomic (when electrons in atoms change energy levels, they emit microwave signals that are used to produce extremely accurate atomic clocks that are used by GPS devices<sup>28</sup>). The scale of navigation that GPS is used for ranges from globe-spanning international flights to the detailed

and local mapping of individual animals in the wild. In locative art projects GPS has been used to map traces of movement from long Antarctic voyages<sup>29</sup> to familiar local journeys.<sup>30</sup> On these different scales, GPS entangles distance and proximity: in its technical configuration, in its practical use in navigation, in its conceptual enlisting of territory, and in its creative use in artworks. Its vertiginous scope connects the global and the local, the sky and the ground, globalization and being in the world.

Global positioning systems are a part of a long and well documented history of mapping<sup>31</sup> and of articulations of relationships between time and space,<sup>32</sup> including (but not limited to) military reconnaissance, political structuring through surveying and bounding, commercial sale of space as property, and histories of social and cultural change. The measuring and quantifying of space involves exploration, staking claims to territories, re-naming places and colonial conquest. The division of space into a measured grid is therefore a political and commercial ordering device, and alongside clock-time made way for control and surveillance of the resulting unified and structured times and spaces, a legacy that runs through GPS technologies.

Geographer Doreen Massey<sup>33</sup> challenges a traditional conceptualization of space. To imagine 'space' as co-ordinates on a surface has effects on people inhabiting that space, not least when voyaging leads to conquering. Massey argues that space is the product of interactions between a multiplicity of things, and that these spatial relationships are political. Space is the co-existence of multiplicity, what Massey calls "coexisting heterogeneity", and it is always in process, or under construction. This distinctly spatial description of multiplicity is useful for three reasons: First, it highlights that things co-exist, at the same time and in relation to each other, across distance. Second, because things in space co-exist they have important

effects on each other; and third, if spaces and multitudes are the product of ongoing inter-relations, it is not possible to be outside of space or to stop acting in the ongoing construction of space – themes that I will return to throughout the paper.

GPS technologies are inextricably tied to the contexts and histories of global techno-politics. Global mobilities of goods, people, cultures and media make experiences of the local also experiences of global connection and, as Massey suggests, a parochial sense of the local as something authentic and closed should be rethought as a “global sense of the local” in which everyday objects, people, food and information have travelled from distant places and become part of daily lives.<sup>34</sup> With a similar regard for how practices on the ground construct ideas of the global, anthropologist Anna Tsing suggests that “[a]s soon as we let go of the universal as a self-fulfilling abstract truth, we must become embroiled in specific situations. And thus it is necessary to begin again, and again, in the middle of things.”<sup>35</sup>

The GPS is, therefore, a situated and partial mode of knowledge production and everyday lived practice, a device that combines the grid of Geographical Information Systems (GIS) with lived and local experience. It works on global scales, not as a unified whole as represented by the Cartesian map – the latitude, longitude and altitude readings of a GPS – but as the negotiation of a series of specific and located practices that bring about both local and global relations.

#### POSITIONING LOCATIVE ART

Locative art often offers participants the opportunity to explore alternative located practices that make global relations visible in new ways and in specific conditions, and that create space to reflect on these

technologies that are often invisibly embedded in everyday networked, public and private life.<sup>36</sup> Locative art practices have grown out of multiple aspects of historical and contemporary art movements. What follows is a partial description of those relationships as they relate to the six aspects of locative awareness, and explores how they are entangled with each other and more broadly with mobilities research.

#### Embodied and Situated Action

Within the field of locative media there is a strong link to walking and art, a history too broad to mention in depth here.<sup>37</sup> Artists such as Richard Long and Hamish Fulton had moved away from object-based practice in the 1960's to bring art closer to everyday life, in work that was conceptual, environmental and related to performance art in its embodied and durational form.<sup>38</sup> Through the practice of walking the work engaged with what it means to be physically within a landscape, experiencing it from a specific place and time. As Ingold and Vergunst suggest:

*If knowledge and footprints appear equivalent, it is because knowing is doing, doing is carrying out tasks, and carrying out tasks is remembering the way they are done.*<sup>39</sup>

More recently, works like *The Missing Voice: Case Study B* by Janet Cardiff and George Bures Miller<sup>40</sup> use the situated physical presence of an audience in particular locations, and their sensory engagement with that environment to introduce layers of narrative through physical discovery in a specific location. In the field of locative media the group C5 who explore the “possibilities of generative, algorithmic relations between big data and human movement across the landscape”<sup>41</sup> use physical exploration and computer generated algorithms as research tools to explore landscape and place experienced through the body and the data it produces.<sup>42</sup>

#### Movement

A unique engagement with location that is gained through movement has been observed and used by both artists and social scientists. The Situationists International are often cited as a precursor to locative art, as artists extend their legacy in works that observe, critique and intervene in everyday life on the street by walking as a *derive* (drift) or *detournement*. The Situationist's intention to break away from everyday walking habits by following programmatic instructions is referenced in *.walk* by Socialfiction.org,<sup>43</sup> a set of instructions that re-makes psychogeographical walks as written software.<sup>44</sup> The app *Serendipitor*, by artist Mark Shepard,<sup>45</sup> also encourages participants to consciously interact with their surroundings while being directed, indirectly, from a to b.

In the social sciences video studies of people walking together have been used to analyse the “on-going situated accomplishment” of the often taken for granted nature of walking together.<sup>46</sup> As a mobile research method the ‘go-along’ is a way of accessing more embodied and situational responses to a place than an interview.<sup>47</sup> Through walking together the situational becomes available for analysis revealing “the pre-reflective knowledge and practices of the body, or the most trivial details of day-to-day environmental experience.”<sup>48</sup> Walking in both art practice and social sciences therefore is seen to offer a processual and embodied method of reflecting on location.

#### Relationality

Locative art often invites an audience to contribute to a collective database of traces, memories, stories, or histories by participating in a walk or journey. The work is built through collective contributions to an “open work,”<sup>49</sup> and would not exist without this participation. This relational capacity of walking is described by Ingold and Vergunst as

*a profoundly social activity: that in their timings, rhythms and inflections, the feet respond as much as does the voice to the presence and activity of others. Social relations, we maintain, are not enacted in situ but are paced out along the ground.*<sup>50</sup>

The three central motivations of participatory art: empowerment of the audience, sharing of authorship and concern for community and collective responsibility<sup>51</sup> are often a key element of locative art projects. Audiences are invited to make collective tracks or tracings of their movements,<sup>52</sup> or to annotate their local environments with comments, histories,<sup>53</sup> poems<sup>54</sup> and narratives.<sup>55</sup> Stanley Brouwn's walks and their concern with measurement, distance and relationality are also precursors to this mode of working. In *This Way Brouwn* (1960-1964), he requested sketches from people in the street instructing him how to get from one location to another.<sup>56</sup> The relationality of Brouwn's walks, and the ambulatory and discursive mode through which public space is explored preface the work of artists like Simon Pope (2012), Rebecca Birch (2011) and Misha Myers (2011), who all walk or travel with participants in relational and dialogical art practice. In the field of locative art this relationality has been developed in ‘shared encounters,’<sup>57</sup> that take place in both physically co-present situations and at a distance.

Interaction in public space has been widely studied in the social sciences<sup>58</sup> and how those interactions are stretched by physically mobile and mediated lives is revisited in the sociology of mobilities<sup>59</sup> and particularly in the articulation of “netlocalities”, the relationships between networks and location.<sup>60</sup> Christian Licoppe and Yoriko Inada have done detailed work in analysing social interactions through large quantities of user data, gathered over several years, from locative games such as *Mogi*.<sup>61</sup> Through ethnometodological analysis they describe how recognising

physical co-location in the mobile game interface leads to an expectation of upgrading to a copresent meeting,<sup>62</sup> and that negotiation is needed to ignore this expectation without seeming rude, demonstrating that social interaction is stretched by locative media.

A further dimension of relational walking is the notion of walking with others at a *distance*, either imagining the presence of the other, or maintaining mediated interaction, as Amy Sharrocks does in the work *Lost & Found* (2010) in which participants walk and observe their surroundings while Sharrocks navigates and directs from a distance via a mobile phone call, and as they share their proximate and distant experiences of the same walk; or Marie Christine Katz who walks together with others at a distance using directions shared via *Twitter* (2013). In both of these projects artists are grappling with the experience of live relational movement with proximate or distant others through communications networks, using place, movement, technology and social interaction as the medium of the work.

### Networks

The study of networked urban environments features in many disciplines, and encompasses ubiquitous computing in objects and environments,<sup>63</sup> changes brought about by networked public spaces,<sup>64</sup> the impact of mobile interfaces<sup>65</sup> and the emergence of the sentient city.<sup>66</sup> Artists have worked with systems of real time communication for many decades, again a history too broad to describe in detail here. In 1969 Jack Burnham described an art of real time systems "which gather and process data from environments, in time to effect future events within those environments."<sup>67</sup> As locative media locate and contextualize engagement with networks they make participants aware of real time systems, networks and databases as "electronic background time-spaces" that radically change how we conceive of urban and public space.<sup>68</sup>

More recently the investigations of artist Trevor Paglen into systems of military secrecy reveal the networks of information, technology and power that are implicit in many technologies. These investigations include: revealing the hidden flight records of military carriers; exposing secret military prisons; and making visible the deployment of spy satellites. By making

these mobility systems visible Paglen's work extends awareness of networks that are invisibly active in the background of global mobilities.

### Experimentation

In both art and design there has been a move over the past 40 years towards participatory experimental modes of working. In the Fluxus movement and 'happenings' of the 1960's and 70's instructional works, sometimes via telephone or the postal system, built on the idea that "doing is knowing" and an experiential mode of art making. Donald Schön describes the reflective potential of action and experimentation:

*The practitioner [...] reflects on the phenomena before him, and on the prior understandings which have been implicit in his behaviour. He carries out an experiment which serves to generate both a new understanding of the phenomena and a change in the situation.*<sup>69</sup>

More recently the exhibition *Do It*<sup>70</sup> developed the idea of the instructional artwork, to observe the effects of translation and action, and the impact that local conditions have on the way that instructions are carried out. This experiential and experimental approach is echoed in design practice as a "designerly way of knowing,"<sup>71</sup> a process of envisioning possibilities and trying them out in physical materials and embodied practices. Similarly the sociology of science and technology has focused on technologies as they are studied in use,<sup>72</sup> and more recently mobile, inventive and live research methods have been developed to investigate interdisciplinary, emergent and live happenings, and to engage with the live and emergent nature of technology use and data production in creative and experimental ways.<sup>73</sup> In this context locative art works can be seen to invite audiences to actively experiment with spatial technologies in situ, and through embodied experience of a technology, place and events to understand them in new ways, thus producing a different 'locative awareness.'

### Multiplicity

Networked space facilitates connection to multiple perspectives, and locative artists often work with a hybrid space made up of both the aerial perspective of a map or satellite interface and embodied local

perspective. Aerial views have often been theorized as separate, distanced and set in opposition to everyday life on the street. Michel de Certeau describes the view from a tall building as the distanced point from which the city that is written by the actions of its inhabitants becomes legible.<sup>74</sup> Henri Lefebvre suggests that to be on the street is to be grasped by its rhythms, whereas the view from a window or balcony puts the street into perspective from which it can be analysed.<sup>75</sup> Ingold describes the earth as seen from above as a globe that is artificially separated from human living, as opposed to the world as sphere, an environment that surrounds and which is co-produced through movement.<sup>76</sup> These descriptions regard the view from above as a place where the life of the city can be read and analysed, detached from lived and embodied experience. Locative art, however, entangles these perspectives so that they act on each other.

### LOCATIVE AWARENESS IN ACTION

Embodied and situated action, movement, relationality, networks, experimentation and multiplicity combine fluidly in a wide variety of locative art practices as described in the previous section. The following section focuses on the work of British artist Nikki Pugh to explore locative awareness in a specific context.

In the work *19,264 seconds of qualitative and quantitative data (Curzon Street, 2010)* Pugh played with the technically located and situated nature of GPS by repeatedly walking a fixed route around a specific part of the city with a GPS device in each hand. She then processed the data to draw a line between each pair of co-ordinates and made a drawing of the situated experience of walking in the city. If the GPS was not affected by its environment the lines should describe the distance between her hands. In some rare cases this does happen, but more usually there is a line representing anything from 2 to 20 metres in discrepancy. Pugh reveals how these changes correspond to features in the urban landscape: a large open space



**Figure 1.** *19,264 seconds of qualitative and quantitative data (Curzon Street, 2010)*, Nikki Pugh, 2010. © Nikki Pugh, 2010. Used with permission.

makes short lines when both GPS devices give similar and relatively accurate readings, but near tall buildings and other architectural masses the lines become longer and more haphazard. As located devices, GPS receivers rely on time-coded radio signals broadcast from a shifting constellation of satellites. If the signal reaches the receiver by an indirect route (e.g. by bouncing off a building), rather than by a direct path, the minute time differences are enough to disrupt the subsequent positioning calculations. The work *Colony* (2011 onwards) developed from the processes used in *19,264 seconds of qualitative and quantitative data* (*Curzon Street*, 2010), and in the first few experimental iterations participants carried a large chrysalis-like form made of bubble wrap with two GPS sensors embedded in its extremities.

Small motors made the form tremble in response to the GPS 'fingerprint' of different kinds of locations according to different narrative aims. When pro-

grammed to tremble in open spaces, the object took on a sense of agoraphobia; when programmed to be sensitive to built up or enclosed spaces it gained a sense of claustrophobia. Although these works use GPS technology they are now responsive objects displaying a kind of 'locative awareness'. The participant's senses have been extended to now 'feel' new information about their environment. As they become *mobile* this sense becomes tuned to the specificity of the technology, they are aware of the GPS and the wider *network* of satellites in relation to this environment. Their walk is an *experimental* 'feeling out' of the situated technology. Each iterative version of *Colony* is developed through workshops in which *participants* are able to reflect, critique and discuss this new way of sensing the environment, and in a more socially relational version of *Colony* a set of sashes respond to a central walker's broadcast GPS data, as a *relational* experiential walk. These experimental works by Pugh are an example of how 'locative awareness' is made

**Figure 2.** *Colony*, Nikki Pugh, 2011. © Nikki Pugh, 2011. Used with permission.



apparent in the work of an individual artist, however the sense that I'm describing is also emerging across and between works in the field of locative art.

The six aspects of locative art that I have described come together as a significant orientation towards an experimental, participatory, spatial and networked art form that is well situated to ask critical questions of the complex systems at play in mobile lives. The next section is a brief theoretical investigation of the territories within which this work operates.

#### PARTIALITY AND COLLECTIVE EXPERIMENTATION

The GPS signal and track can be seen as a system of vision that allows us to see position, movement and direction by using a global network of satellites. From a Science and Technology Studies (STS) perspective they can be seen as partial (incomplete and open), in that a GPS device is affected by its surroundings, and situated in specific devices, databases and visualizations. Haraway argues that it is crucial to acknowledge the partiality of systems of knowledge production:

*The moral is simple: only partial perspective promises objective vision. This is an objective vision that initiates, rather than closes off, the problem of responsibility for the generativity of all visual practices. Partial perspective can be held accountable for both its promising and its destructive monsters.*

Although GPS uses global networks to function in practice GPS devices produce partial and processual views, assembled with other partial views in an understanding of landscape. Locative art therefore has the potential to produce and access data *in situ*, to draw attention to this partial perspective and to gather networks together, through paths of movement. Anthro-

pologist Tim Ingold uses ethnographic studies of the movement practices of indigenous hunter-gatherer communities in North Eastern Canada, Australia and Alaska to explore the role that movement has in perception of the environment.

*Our perception of the environment as a whole, in short, is forged not in the ascent from a myopic, local perspective to a panoptic, global one, but in the passage from place to place, and in histories of movement and changing horizons along the way.*

From a phenomenological perspective a landscape is not simply a pre-existing physical environment that a locative media user walks through and experiences; rather places and people are always in a continual state of coming into being, and this is what Ingold calls a "dwelling perspective." In his description, knowledge is not a static, pre-formed object to be discovered, but a process that unfolds through action and movement. A dwelling perspective is made up of a pattern of activities or a "taskscape"; however Ingold's emphasis on embodiment often dismisses the perceptual experience available through technologies that he sees as bereft of embodied action. Locative media produces a different kind of taskscape that is also networked and generates a multiplicity of connected and shared spaces that are both proximate and distant. Locative awareness, acting in new ways through locative art, contributes to the ongoing co-constitution of environments and people, and changes the way that participants perceive and create the world.

A phenomenological perspective suggests that movement is a continuous flow, not a series of points occupied in sequence. However, the tracking of movement and the marking of specific locations with GPS are fundamentally dependent on a grid of points. This relationship between gridded and mapped space and movement was made visible in early locative media

projects such as Masaki Fujihata's *Mersea Circle* (2003), which uses video footage in a 3D model of a GPS track, fixed to co-ordinates where the video was filmed. Although the video is a moving image, it is still fixed to a static point on a mapped line, reducing a sense of flow to a set of points. The grid of calculation is less apparent in work such as *Colony* (Pugh 2013), and the work *Aura* by Steve Symons (2007) which uses GPS to read a participant's location but immerses them into a flow of sound which changes gradually and which the participant changes as s/he moves. The work is, however, still based on a grid of latitude and longitude data.

The ubiquity of computing embedded in objects and environments enables "many millions of calculations continually to be made in the background of any encounter";<sup>79</sup> the increasing speed and quantity of calculations allows for mapping of a world that is moving and unfolding like a river, not static like a surveyor's map. These constant background, on-the-move, calculations change qualitative experiences as spatial technologies expand our reach.

Feminist theorist Karen Barad suggests that objects and agencies of observation are inseparably tied together in intra-actions;<sup>80</sup> rather than being pre-existing static entities they come about through them and with them. If GPS is thought of as a system of vision, or an agency of observation, it is also inextricably linked with other objects in the intra-actions between satellites, people, terrain, sky, phone networks, Cartesian mapping, navigation and military reconnaissance. All are entangled in locative art to different degrees, and come together in specific ways in different locative art applications and the practices that are enacted through them. It is not that these networks are just associations and connections. I use Barad's<sup>81</sup> term "entanglement" to develop analysis of GPS in which intra-actions create human and non-human agencies

that are more strongly bound together in motion and action, both socially and materially, rather than simply assembled or associated. In Pugh's work, for instance, the GPS is not acting alone but is entangled with buildings, weather, the way that it is carried, even the small differences in the ways that each device operates, and the GPS does not exist outside such situated contexts.

*Collective experimentation* is a term used in public engagement with science to describe projects in which "situations emerge or are created which allow [people] to try out things and to learn from them, i.e. experimentation."<sup>82</sup> Many locative art projects provide participants with opportunities to try out new, and often critical or creative technical configurations of GPS *together with other people*, making technologies and interactions available for discussion, through embodied and situated experimentation.

These kinds of methods are also used by organizations like *Arts Catalyst*, who have worked with artists to envision and enact different cultural relationships to science and technology. In the *Arctic Perspective Initiative* artists Peljhan & Biederman (2007 ongoing) have worked closely in collective experimentation with a group of indigenous people in northern Canada to develop new open-source and mobile technologies that operate both on-the-move and at-a-distance,<sup>83</sup> such as modifying a drone to view ice-floes from above, and using it in dialogue with traditional navigation skills in order to navigate safely across them.

Collaborations between designers, technologists, practitioners and design ethnographers in the field of ubiquitous computing also use a form of collective experimentation in design processes. The PalCom research project<sup>84</sup> identified two problems in working with ubiquitous technologies: firstly, that the invisibility of ubiquitous computing makes it unavailable to peo-

ple – it is hard to know what is going on and therefore how to work with it, trust it or subvert it. Secondly, that working with new technologies requires new practices to develop, and therefore it is impossible to predict how they might be used. They devised a process in which working with technologies in situations that were "as realistic as possible" rather than in the studio or lab, enabled them to work directly with the opportunities, constraints, problems and possibilities that "arise concretely" in action. This enabled the technological potentials and limitations to become palpable in the conversations and experiments that occurred between users, researchers, technologists and developers. This notion of things becoming palpable and available for discussion through experimentation is also evident in LMSN's and locative artworks.

#### THE VIEW FROM ABOVE

Locative artworks are also connected to the concerns of Feminist Science and Technology Studies (FSTS), that scientific knowledge is situated in practices, bodies, histories and cultures.<sup>85</sup> In the work of Donna Haraway, the 'view from above' or 'view from nowhere' is used as a figure to critique totalizing visions of scientific objectivity:

*I am arguing for politics and epistemologies of location, positioning, and situating, where partiality and not universality is the condition of being heard to make rational knowledge claims. These are claims on people's lives; the view from a body, always a complex, contradictory, structuring and structured body, versus the view from above, from nowhere, from simplicity. Only the god-trick is forbidden.*<sup>86</sup>

Haraway suggests that we need to produce situated knowledges, that is, partial embodied 'views from

somewhere,' in order to be accountable and responsible for our actions and for the multiplicity of bodies and positions. When using live location data in a map or satellite image, aerial and street-level views become mobile with the partial and situated view of the walker.<sup>87</sup> The locative media participant can often annotate the map and act on the aerial perspective as they move, and through these media develop a dialogue between overview and "underview."<sup>88</sup>

To think this problem in reverse, one could ask how a 'view from nowhere' is made from multiple situated actions in physical space, which relates to the history of mapping, combining the gestural traces of a narrated journey and map-making in which the narratives that produce the map are standardized.<sup>89</sup> Ingold suggests that what the map has left out is movement. Locative art however offers new ways in which the movement of mapping and the task of map-making are brought closer together, in which maps can change according to local user movement and input, whether to distant users via networks or to a database.

In order to learn about the GPS technologies' relations, we must look at how knowledge assemblages are coproduced with social and spatial relations. In a negotiated understanding of the GPS trace as a remnant of movement it is possible to bring together a "multiplicity of local knowledges."<sup>90</sup> Haraway uses the figure of the view from above to stand in for a view from nowhere. For Haraway figures are abstractions but they also have an impact in the world. While these abstractions are not generalizable, inhabiting the figure changes us in our modes of entanglement.<sup>91</sup> She identifies herself with the ground as the location of being situated: "we learn to be worldly from grappling with, rather than generalizing from, the ordinary. I am a creature of the mud, not the sky."<sup>92</sup> The figure of the sky can however be just

as messy as the ground; it is full of weather, constellations, gases, ozone, volcanic ash, microbes, drones, bacteria, space junk and thousands of people in flight. The view from above and in motion is a partial and situated view from somewhere and bodies must be put back into views from above in order to find ways to become accountable for actions made through these representations.

*We must realise that both the views from above and from below can be restrictive and revealing, deceptive and determinative, indulgent and insightful, necessary but wholly insufficient.* <sup>93</sup>

The urban geographer Edward Soja's description of 'thirdspace' is useful here; he suggests that space is both real, imagined and simultaneously "realandimagined." <sup>94</sup> These three ways of thinking about space, like the figure that is both real and imagined, suggest that how we imagine and how we use figures are important in how space is produced.

The artist Simon Faithfull's *Escape Vehicle No 6* (2004) is a live performance in which a weather balloon, with a networked camera and an office chair attached, is launched and travels from the ground to the edge of space, sending live film footage back to the audience. As the chair standing in for the situated body travels shakily above the ground, ascending into the sky, the fragile body and the visual perspective of this height is imagined, launched into the extreme territory of usually military or scientific perspective. Nicola Triscott, director of Arts Catalyst, discusses this work alongside Felix Baumgartner's jump from space made in October 2012, suggesting that the poetic resonance of these events is that "it adds to the store of meaning that we construct around the falling body, and to our perceptions of space, fragility and risk." <sup>95</sup> This sense of the body at height contributes to a reading of aerial perspectives as situated views.

As we live with the aerial perspective increasingly closely in everyday life, using *Google Earth* and sat nav devices to navigate, and as drones are increasingly used in policing, warfare, environmental monitoring and emergency response, artists are investigating how figures are entangled with realities and thereby also shape socio-technical assemblages, societies and cultures. We are in a process of learning how a view from above has impact in everyday lives, and how to connect the experience of embodied emplacement in landscape through movement with the vertiginous satellite views from above.

GPS was initially developed for navigation by a US defense department project, but was quickly used in targeting, on-board missile guidance, and, increasingly, for drone piloting. The use of GPS removes the body of the pilot from the site of warfare, with serious consequences for both pilot and target. <sup>96</sup> Artists and social scientists have engaged with making visible the "personal and human experience" of this action at a distance. <sup>97</sup> The artist Omer Fast's work *Five Thousand Feet is the Best* (2012) uses re-enacted interviews with drone pilots to articulate and complicate the personal and situated impacts of acting at a distance through drone technologies. Bodies are therefore paradoxically not only disappearing but also being made visible by remote viewing, and correspondingly pilots are also affected psychologically by actions that although made at a distance are nonetheless deadly. <sup>98</sup>

### CONCLUSION

The central theme of this paper is the multiple, entangled and assembled nature of locative media. The GPS device as a singular instrument held in the hand suggests an individual track and an autonomy of movement in an empty space of GPS co-ordinates unfettered by social or material impact. Through the

complex relationships including the six aspects of 'locative awareness' I suggest that instead of this singularity, GPS technologies and locative media are multiple, situated and partial socio-technical assemblages. This multiplicity is most clearly demonstrated in location based social networks, but as a fundamentally situated and situating technology GPS always entangles multiple temporalities, bodies and impacts in its tracks.

The concept of locative awareness brings together the complex and entangled nature of locative technologies: they draw attention to situated and embodied experiences of the world through movement; they are relational and produce social connections in both proximate and distant locations; they produce and articulate networks and databases that create an ongoing background flow of calculation and information; and they produce hybrid and multiple perspectives through experimental and social encounters. Through the multiple capacities of locative awareness locative art offers opportunities to grapple with the profound effects and implications of GPS technologies. ■

### ACKNOWLEDGEMENTS

Research supported by Arts and Humanities Research Council, UK; Centre for Mobilities Research; mobilities.lab and Lancaster Institute for Contemporary Arts, Lancaster University.

### REFERENCES AND NOTES

- Mimi Sheller and John Urry, "The New Mobilities Paradigm," *Environment and Planning A* 38, no. 2 (2006): 207–226.
- Christian Licoppe and Yoriko Inada, "Locative Media and Cultures of Mediated Proximity: The Case of the Mogi Game Location-Aware Community," *Environment and Planning D: Society and Space* 28, no. 4 (2010): 691–709; Mimi Sheller, "Mobile Mediarity: Locations, Dislocations, Augmentation," in *New Mobilities Regimes in Art and Social Sciences*, ed. Susanne Witzgall, Gerlinde Vogl, and Sven Kesselring (Aldershot, England: Ashgate, 2013), 309–326; Jason Farman, *Mobile Interface Theory: Embodied Space and Locative Media* (New York, Routledge: 2012).
- Eric Gordon and Adriana de Souza e Silva, *Net Locality: Why Location Matters in a Networked World* (Chichester, England: Wiley-Blackwell, 2011), 13.
- Simon Pope, "The Shape of Locative Media," *Mute*, February 9, 2005, <http://www.metamute.org/editorial/articles/shape-locative-media> (accessed February 27, 2013); Drew Hemment, "Locative Arts," *Leonardo* 39, no. 4 (2006): 348–356.
- Marc Tuters and Kazys Varnelis, "Beyond Locative Media: Giving Shape to the Internet of Things," *Leonardo* 39, no. 4 (2006): 357–363; Tristan Theilmann, "Locative Media and Mediated Localities: An Introduction to Media Geography," *Aether: The Journal of Media Geography* 5a (2010): 1–17.
- Geoff Knowlton, Naomi Spellman and Jeremy Hight, "34 North 118 West," *LA Freewaves Festival*, LA, 2002.
- Teri Reub's official website, "Drift," 2004, <http://www.terirueb.net/drift/> (accessed January 20, 2014).
- Plan B's official website, 2013, <http://www.planbperformance.net/> (accessed January 20, 2014).
- Esther Polak, "Amsterdam Realtime," the website of the project, 2002, <http://realtime.waag.org/> (accessed January 20, 2014); Jen Hamilton, Jen Southern, and Chris St. Amand, *Running Stitch*, Fabrica Gallery, Brighton, between November 19 and December 17, 2006; Jen Southern and Chris Speed, "Watch This Space: From Collective to Collaborative Uses of Locative Media," in *Proceedings 5th IEEE International Conference*, Oxford, UK (2009), 188–191.

10. Marc Tuters, "Forget Psychogeography: The Object-Turn in Locative Media" (paper presented at Unstable platforms: The Promise and Peril of Transition conference, MIT, Cambridge, MA, May 13-15, 2011).
11. Esther Polak and Ieva Auzina, "MILK Project," Polak and Auzina's official website, 2006, <http://milkproject.net> (accessed 27 February 2013).
12. Christian Nold's official website, "Biomapping," 2004, <http://www.biomapping.net/> (accessed January 26, 2013).
13. Anne Galloway, "A Brief History of the Future of Urban Computing and Locative Media" (PhD diss., Carleton University, Ottawa, Ontario, 2009).
14. Beryl Graham, "Exhibiting Locative Media: (CRUMB discussion postings)," *Mute*, May 20, 2004, <http://www.metamute.org/editorial/articles/exhibiting-locative-media-crumb-discussion-postings> (accessed January 20, 2014).
15. Saul Albert, "Locative Literacy" *Mute*, July 13, 2004, <http://www.metamute.org/editorial/articles/locative-literacy> (accessed January 20, 2014).
16. Anthony Townsend, "Locative-Media Artists in the Contested-Aware City," *Leonardo* 39, no. 4 (2006): 345-347.
17. Christian Licoppe and Yoriko Inada, "Locative Media and Cultures of Mediated Proximity"; Mimi Sheller, "Mobile Mediability: Locations, Dislocations, Augmentation"; Jason Farman, *Mobile Interface Theory: Embodied Space and Locative Media*; Eric Gordon and Adriana de Souza e Silva, *Net Locality: Why Location Matters in a Networked World*.
18. Monika Büscher, John Urry, and Katian Witchger, eds., *Mobile Methods* (Abingdon, England: Routledge, 2011); Mimi Sheller, "Mobile Mediability: Locations, Dislocations, Augmentation."
19. John Urry, *Mobilities* (Cambridge: Polity, 2007).
20. Rein Ahas, "Mobile Positioning," in *Mobile Methods*, ed. Monika Büscher, John Urry, and Katian Witchger, (Abingdon: Routledge, 2011), 183-199.
21. Monika Büscher, John Urry and Katian Witchger, eds., *Mobile Methods*, 3.
22. Hana Iverson, Mimi Sheller, and Jeremy Hight, "L.A. Re.Play: An Exhibition of Mobile Media Art" (exhibition, College Art Association Conference, Los Angeles, February 22-26, 2012).
23. Donna Haraway, *Simians, Cyborgs, and Women: The Reinvention of Nature* (New York: Routledge, 1991).
24. Tim Ingold, *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* (London: Routledge, 2000).
25. Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham & London: Duke University Press, 2007).
26. Nigel Thrift, "Movement-space: The Changing Domain of Thinking Resulting from the Development of New Kinds of Spatial Awareness," in *Non-Representational Theory: Space, Politics, Affect* (Abingdon: Routledge 2008), 89.
27. Ulrike Felt and Brian Wynne, "Taking European Knowledge Society Seriously," Report of the *Expert Group on Science and Governance to the Science, Economy and Society Directorate*, Directorate-General for Research, European Commission, 2007, [http://ec.europa.eu/research/science-society/document\\_library/pdf\\_06/european-knowledge-society\\_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/european-knowledge-society_en.pdf) (accessed January 30, 2013); Monika Büscher, Margit Kristensen and Preben Mogensen, "Making the Future Palpable: Notes from a Major Incident Future Laboratory," in *Proceedings of the 4 International ISCRAM Conference*, ed. Bartel Van de Walle, Paul Burghardt, and Kees Nieuwenhuis (Delft, The Netherlands: ASP, 2007).
28. National Coordination Office for Space-Based Positioning, "GPS.gov: GPS Overview," <http://www.gps.gov/systems/gps/> (accessed January 26, 2013).
29. Layla Curtis' official website "Polar Wandering," 2006, [http://www.laylacurtis.com/work/display/5-mixed\\_media](http://www.laylacurtis.com/work/display/5-mixed_media) (accessed January 20, 2014).
30. Christian Nold, "Biomapping." Christian Nold's official website, 2004, <http://www.biomapping.net/> (accessed January 26, 2013).
31. Denis Wood, *Rethinking the Power of Maps* (New York: Guildford Press, 2010).
32. David Harvey, *The Condition of Postmodernity* (Malden and Oxford: Blackwell, 1990).
33. Doreen Massey, *For Space* (London; Thousand Oaks, MA; New Delhi: Sage, 2005).
34. Doreen Massey, "A Global Sense of Place," *Marxism Today*, June 1991, 24-29.
35. Anna Tsing, *Friction: An Ethnography of Global Connection* (Princeton, NJ: Princeton University Press, 2005), 1-2.
36. Trebor Scholz, "Your Mobility for Sale," in *Sentient City*, ed. Mark Shepard (Cambridge: MA: MIT Press, 2011), 204-211.
37. Rebecca Solnit, *Wanderlust: A History of Walking* (New York: Penguin Putnam, 2001).
38. Dieter Roelstraete, *A Line Made by Walking* (London: Afterall Books, 2010).
39. Tim Ingold and Jo Lee Vergunst, *Ways of Walking: Ethnography and Practice on Foot* (Aldershot, England: Ashgate, 2008), 7.
40. Janet Cardiff and George Bures Miller's official website, "The Missing Voice: Case Study B," 1999, [http://www.cardiffmiller.com/artworks/walks/missing\\_voice.html](http://www.cardiffmiller.com/artworks/walks/missing_voice.html) (accessed January 20, 2014).
41. Brett Stalbaum, "Walking Art and a Short Introduction – Brett Stalbaum for C5," the website of Intercreate Research Centre, October 27, 2010, <http://www.intercreate.org/2010/10/walking-art-and-a-short-introduction/> (accessed January 20, 2014).
42. Brett Stalbaum "Database Logic(s) and Landscape Art," the website of C5, 2002, <http://c5.sjsu.edu/research/database-logic.shtml> (accessed January 20, 2014).
43. socialfiction.org, "walk," the official website of Transmediale, 2001, <http://www.transmediale.de/content/walk> (accessed January 19, 2014).
44. Florian Cramer, "Ten Theses about Software Art," Florian Cramer's website, September 23, 2003, [http://cramer.pleintekst.nl/all/10\\_thesen\\_zur\\_softwarekunst/10\\_theses\\_about\\_software\\_art.txt](http://cramer.pleintekst.nl/all/10_thesen_zur_softwarekunst/10_theses_about_software_art.txt) (accessed January 19, 2014).
45. Mark Shepard, "Serendipitor," the website of Serendipitor, 2010, <http://serendipitor.net/> (accessed January 19, 2014).
46. Alan Ryave and James Schenkein, "Notes on the Art of Walking," in *Ethnomethodology: Selected Readings*. ed. R. Turner (Harmondsworth, London: Penguin Education, 1974), 265.
47. Margarethe Kusenbach, "Street Phenomenology: The Go-Along as Ethnographic Research Tool," *Ethnography* 4, no.3 (2003): 455-485.
48. Ibid., 462.
49. Umberto Eco, "The Poetics of the Open Work," in *Participation: Documents of Contemporary Art*, ed. Claire Bishop (London: Whitechapel, 2006).
50. Tim Ingold and Jo Lee Vergunst, *Ways of Walking: Ethnography and Practice on Foot*, 1.
51. Claire Bishop, ed., *Participation: Documents of Contemporary Arts* (London: Whitechapel, 2006).
52. Esther Polak, "Amsterdam Realtime"; Jen Hamilton, Jen Southern and Chris St. Amand, "Running Stitch"; Jen Southern and Chris Speed, "Watch This Space: From Collective to Collaborative Uses of Locative Media."
53. Shawn Micallef, Gabe Sawhney and James Roussel, "Murmur," the website of Murmur, 2003, <http://murmuronto.ca> (accessed February 23, 2013).
54. Blink's official website, "City Poems," 2003, <http://blinkmedia.org/blog/?p=36> (accessed 19 Jan 2014).
55. Geoff Knowlton, Naomi Spellman, and Jeremy Hight, "34 North 118 West."
56. Aaron Shuster, "Stanley Brouwn" *Frieze*, no. 91 (2005).
57. Katharine S. Willis, George Roussos, Chorianopoulos Konstantinos and Mirjam Struppek, *Shared Encounters* (London: Springer-Verlag, 2010).
58. William Whyte, *The Social Life of Small Urban Spaces* (New York: Project for Public Spaces, 1980); Erving Goffman, "The Interaction Order: American Sociological Association (1982 Presidential Address)," *American Sociological Review* 48, no.1 (1983): 1-17; Deirdre Boden and Harvey L. Molotch, "The Compulsion of Proximity," in *Nowhere: Space, Time and Modernity*, ed. Roger Friedland and Deirdre Boden (Berkeley: University of California Press, 1994), 257-286.
59. John Urry, "Mobility and Proximity," *Sociology* 36, no. 2 (2002): 255-274; Anthony Elliot and John Urry, *Mobile Lives* (New York: Routledge, 2010); Chris Boyko, Monika Büscher, Tim Dant, and Karenza Moore, "New IO? Interac-

- tion in the Networked City" (paper presented at FutureEverything conference, Manchester, May 14, 2010).
60. Eric Gordon and Adriana de Souza e Silva, *Net Locality: Why Location Matters in a Networked World*.
61. Christian Licoppe and Yoriko Inada, "Locative Media and Cultures of Mediated Proximity."
62. Christian Licoppe, "Recognizing Mutual 'Proximity' at a Distance: Weaving together Mobility, Sociality and Technology," *Journal of Pragmatics* 41, no. 10 (2009): 1924-1937.
63. Adam Greenfield, *Everyware: The Dawning Age of Ubiquitous Computing* (Berkeley, CA: New Riders, 2006).
64. Kazys Varnelis and Anna Friedberg, "Place: The Networking of Public Space," in *Networked Publics*, ed. K Kazys Varnelis (Cambridge, MA: MIT Press, 2008), 15-42.
65. Adriana de Souza e Silva and Jordan Frith, *Mobile Interfaces in Public Spaces* (New York: Routledge, 2012); Jason Farman, *Mobile Interface Theory*.
66. Mark Shepard, *Sentient City: Ubiquitous Computing, Architecture and the Future of Urban Space* (New York: The Architectural League of New York / MIT Press, 2011).
67. Jack Burnham, "Real Time Systems," *Artforum* 8, no. 1 (1969): 51.
68. Nigel Thrift, "Movement-space," 89.
69. Donald Schön, *The Reflective Practitioner: How Professionals Think in Action* (New York: Basic Books, 1983), 68.
70. Hans Ulrich Obrist, ed., *Do It: The Compendium* (New York: Independent Curators International/D.A.P, 2013).
71. Nigel Cross, *Designerly Ways of Knowing* (London: Springer, 2006).
72. Lucy Suchman, *Human-Machine Reconfigurations: Plans and Situated Actions*. (New York: Cambridge University Press, 2007).
73. Les Back and Nirmal Puwar, "A Manifesto for Live Methods: Provocations and Capacities," *The Sociological Review* 60, no. S1 (2012): 6-17; Celia Lury and Nina Wakeford, *Inventive Methods: The Happening of the Social* (Abingdon, England: Routledge, 2012).
74. Michel De Certeau, *The Practice of Everyday Life* (Berkeley, CA: University of California Press, 1984).
75. Henri Lefebvre, *Rhythmanalysis: Space, Time and Everyday Life* (London: Continuum, 2004).
76. Tim Ingold, *The Perception of the Environment*.
77. Donna Haraway, *Simians, Cyborgs, and Women*, 190.
78. Tim Ingold, *The Perception of the Environment*, 227.
79. Nigel Thrift, "Movement-space," 90.
80. Karen Barad, "Re(con)figuring Space, Time, and Matter," in *Feminist Locations: Global and Local, Theory and Practice*, ed. M. Dekoven (New Brunswick, NJ: Rutgers University Press, 2001).
81. Karen Barad, *Meeting the Universe Halfway*.
82. Ulrike Felt and Brian Wynne, "Taking European Knowledge Society Seriously," 26.
83. Michael Bravo and Nicola Triscott, *Arctic Perspective Cahier No. 2: Arctic Geopolitics & Autonomy* (Ostfildern, Germany: Hatje Cantz, 2011).
84. The official website of the PalCom Project, 2008, <http://www.ist-palcom.org/> (accessed January 20, 2014).
85. Maureen McNeil and Celia Roberts, "Feminist Science and Technology Studies," in *Theories and Methodologies in Postgraduate Feminist Research: Researching Differently*, ed. Rosemary Buikema, Gabriele Griffin, and Nina Lykke (London: Routledge, 2011).
86. Donna Haraway, *Simians, Cyborgs, and Women*, 195.
87. Jen Southern, "Comobile Perspectives in Locative Media," in *Locative Media: Multidisciplinary Perspectives on Media and Locality*, eds. Regine Buschauer and Katharine S. Willis (Bielefeld, Germany: Transcript, 2013).
88. Chris Speed, "Developing a Sense of Place with Locative Media: An 'Underview Effect,'" *Leonardo* 43, no. 2 (2010): 169-174.
89. Michel De Certeau, *The Practice of Everyday Life*, 120-121; Tim Ingold, *The Perception of the Environment*, 234.
90. Donna Haraway, *Simians, Cyborgs, and Women*, 187.
91. Donna Haraway and Karen Barad, "Articulating the Human and Non-Human" (videoconference presentation, Feminist Technoscience Studies MA Module, Lancaster University, May 28, 2011).
92. Donna Haraway, *When Species Meet* (Minneapolis, MN: University of Minnesota Press, 2008), 3.
93. Edward Soja, *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places* (Oxford: Blackwell, 1996), 314.
94. Ibid.
95. Nicola Triscott, "Is There Any Poetic Meaning in Baumgartner's Fall to Earth?" Nicola Triscott's official website, October 15, 2012, <http://nicolatriscott.org/2012/10/15/is-there-any-poetic-meaning-in-baumgartners-fall-to-earth/> (accessed January 20, 2014).
96. Andrew Cockburn, "Drones, Baby, Drones," *London Review of Books* 34, no. 5 (2010): 15-16.
97. Nicola Triscott, "War at the Speed of Light: Artists and Drone Warfare," Nicola Triscott's official website, November 5, 2012, <http://nicolatriscott.org/2012/11/05/war-at-the-speed-of-light/> (accessed January 20, 2014); Honor Harger, "Drone's Eye View," Lighthouse.org, November 14, 2012, <http://www.lighthouse.org.uk/news/drone-s-eye-view-by-honor-harger> (accessed January 20, 2014); Caren Kaplan, "9/11 From Space: Militarized Nationalism's 'Isolated and Unique View,'" Caren Kaplan's official website, September 8, 2011, <http://aerialvisualculture.blogspot.co.uk/> (accessed January 20, 2014).
98. Nicola Abé, "Dreams in Infrared: The Woes of an American Drone Operator," *Spiegel Online*, December 14, 2012, <http://www.spiegel.de/international/world/pain-continues-after-war-for-american-drone-pilot-a-872726.html> (accessed January 20, 2014).

# THE SOCIAL

4<sup>TH</sup> INTERNATIONAL ASSOCIATION FOR VISUAL CULTURE BIENNIAL CONFERENCE

29/09 – 01/10/2016  
BOSTON UNIVERSITY

[WWW.OCRADST.ORG/VISUALCULTURE2016/](http://WWW.OCRADST.ORG/VISUALCULTURE2016/)

