

Locative Arts

The artist: the first person to set out a boundary stone, or to make a mark.¹

When the oceans became navigable due to the invention of the chronometer as an on-board ship location device, the view of the Earth and our relationship to it changed, and so did the forms of representation used to express or explore that relationship. The first photographs from the Apollo space missions changed once more the view of the Earth, and produced one of the most iconic, and ubiquitous, images ever produced. Today it is digital and satellite mapping technologies that have caught the attention of a new generation of artists and DIY technologists, who are exploring the use of portable, networked, location-aware computing devices for user-led mapping, social networking and artistic interventions in which geographical space becomes a canvas.

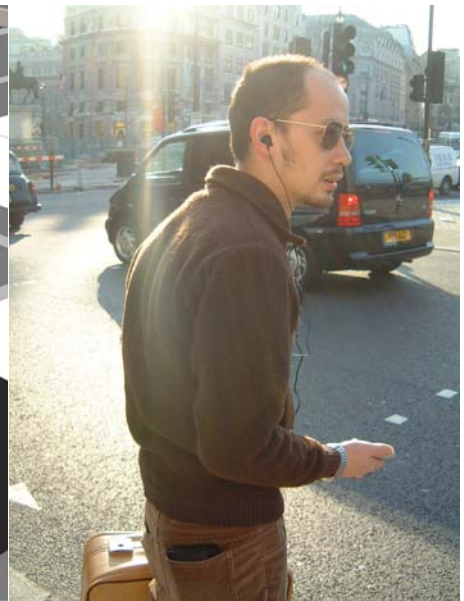
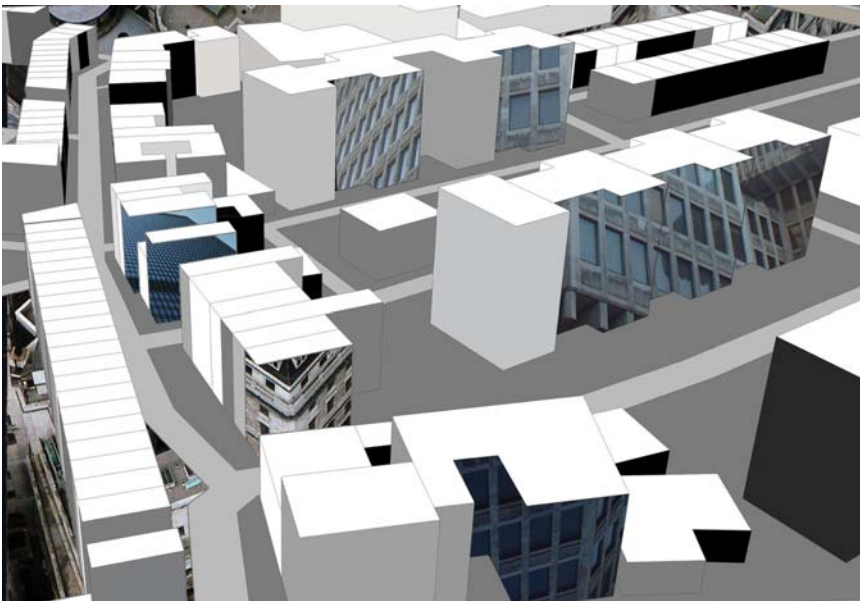


Fig. 1: Blast Theory (UK), Uncle Roy All Around You

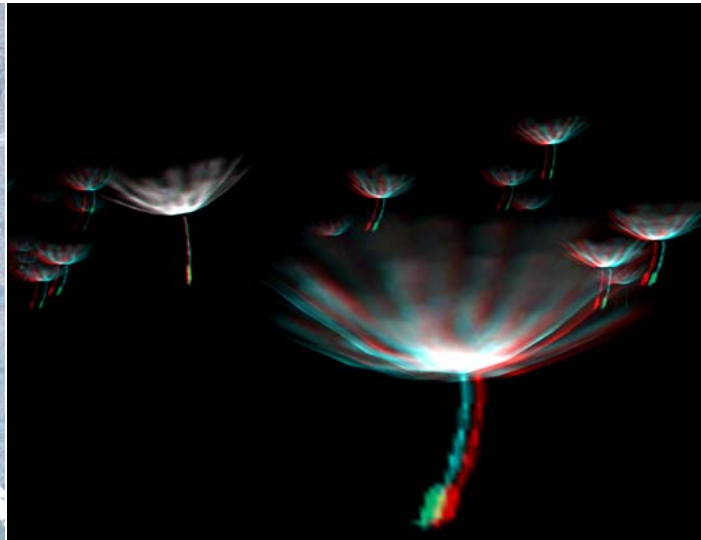


Fig. 2: Knowlton/Spellman/Hight (US), InterUrban

Fig. 3: squidsoup (UK), Come Closer

All art engages in location to some degree, even if just in the way that it responds to the space created by gallery and frame, or that the found object is marked by the absence of the location from which it was drawn. If a precursor to locative media were to be identified within the art world it might be Richard Long, who creates his art by walking through a landscape, annotating the physical environment he encounters with stones or other ambient materials, and documenting augmented space that results in photographs that provide an esoteric other to the objectifying gaze of cartography or satellite photography.

Artists are responding to the technical possibilities of location-aware, networked media by asking what can be experienced now that could not be experienced before, in some cases producing more-or-less conventional artistic representations using location data, in others playing with the possibilities of the media itself. The exploratory movements of locative media lead to a convergence of geographical and data space, reversing the trend towards digital content being viewed as placeless, only encountered in the amorphous and other space of

the internet. Much like Long, 'geo-annotation' projects such as [murmur] and Urban Tapestries weave interlocking narrative threads through the environment, and a wide range of other artistic approaches are also being explored, such as the mixed reality gaming of Uncle Roy All Around You (Fig. 1), the ambient narrative of InterUrban (Fig. 2), and the sensory immersion of Come Closer (Fig. 3).

It is too early to offer a topology of locative media arts, however, or to tie the field down with strict definitions or borders. While artists such as Masaki Fujihata (JP), Teri Rueb (CN) and Stefan Schemat (DE) have been producing work in this area for many years, more widely there have been only a handful of fully realised locative art works, with many projects remaining in the beta stage if not still on the drawing board. We have not yet reached the point at which the technology disappears - all too often the tendency is to focus on the technology and tools rather than the art or content. A coherent discourse around locative art is only starting to emerge, and it is common to find different artists speak of or engage in a similar set of interests, without referencing other works in the field or contextualising their own practice. These points illustrate not a defect or shortcoming but that the locative project is in a condition of emergence, an embryonic state in which everything is still up for grabs, a zone of consistency yet to emerge. As an emergent practice locative art - like locative media generally - is simultaneously opening up new ways of engaging in the world and mapping its own domain. This resonates with Deleuze's and Guattari's sense of territory, in which there is a blurring of the distinction between real estate and intellectual property, between the mapping of physical space and the production of an artistic or cultural milieu: the territory is constituted by the signature or expressive mark, both in the sense that birds use song to map their domain and that the artist creates a new way of seeing and occupying the world.

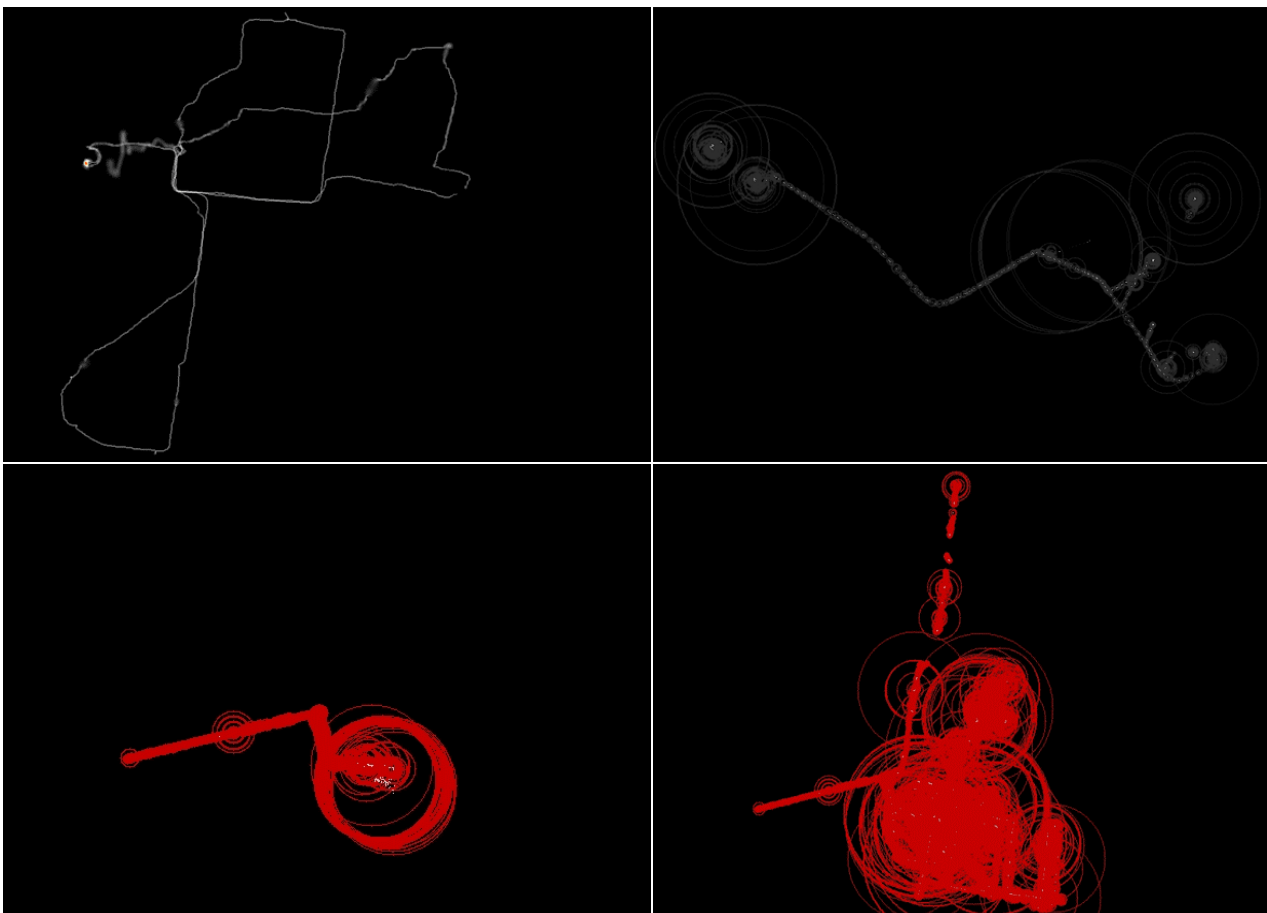


Fig. 4: Karosta Locative Workshop

One technique that has already become common is to generate line drawings from GPS data generated by people moving through the physical environment. An example is GPS Drawing by Jeremy Wood, which uses this as a means to create figurative images; of animals, symbols and words, including "the world's biggest IF" stretching from the south coast of England to East Anglia. A more interesting example, that exploits this technique for user-led mapping rather than the conventional form of figurative drawing, is Amsterdam Realtime by Ester Polak (NL). In this participants roam the streets of Amsterdam equipped with a networked GPS device, and a trace of their movements is relayed to a projection screen in an exhibition space. At the outset the screen is blank, but as the journeys are recorded individual meanderings fuse into a composite representation of how people occupy and use the city, density and concentration recorded in the luminescence of overlapping lines, spaces unvisited remaining dark. While as Eric Kluitenberg has pointed out during the ISEA2004 conference, such composite images generated through successive superimpositions are statistical in nature, the project offers an evocative visual portrait of the life of the city, and a grass roots mapping of how urban space is used

that offers an alternative to the top down perspective of conventional cartography. A similar set of images (Fig. 4) were produced at a workshop at Karosta in Latvia hosted by the influential media art collective RIXC that brought together many early practitioners and inspired much of the current interest in locative media. These illustrate the expression that emerges between the cartographic contours - the intricate abstract shapes that can be produced through this mapping technique - while the final two involves a secondary mapping of error, plotting the accuracy of each GPS reading as the diameter of a circle, generating aleatory tracings that both exceed the linear mapping function and expose the limit of the technical system.ⁱⁱ

There is a strong current of work that takes a documentary approach, seeking to archive and embed hidden meaning or collective memory, such as the MILK project by Ieva Auzina and Esther Polak (LT/NL) which maps journeys using GPS to explore at once incidental meanderings and international flows, using photography and personal testimonies to delve into hidden substrata of meaning in the journey of milk from cow to consumer. This has led Chris Byrne to examine the relation between locative media and documentary realism, while similarly Michelle Kasprzak has explored how truth and fiction are articulated within locative arts.ⁱⁱⁱ In certain cases - such as the mapping of error found in the Karosta images - this picture is complicated by an ambiguity that exceeds the binary of truth or fiction, even though in this case it is an ambiguity that ultimately reduces to statistical variation.

The question of ambiguity and statistics highlights the way in which projects that draw not only on cartographic tools but also on metaphors of mapping tend to aim for a one-to-one correspondence between the movements of participants and their screen based representation. The same issues also arise in geo-annotation projects. These involve assigning media contents spatial coordinates such that they can be accessed from that location with an enabled device. While the 'true' location of the content is a database, by making it possible to access that content from a particular position its place migrates into the physical environment. And in the same way that many mapping projects aim for a one-to-one correspondence between world and representation, such projects seek a determinate placing or fixing of position, to make the world 'programmable' and readable through a transparent interface between an object and the spatial metadata assigned to it. This technique has generated widespread interest for use in everything from museum guides to utility company field operations, where it is employed as just another delivery technique for the same information. In contrast projects such as Urban Tapestries (UK), [murmur] (CN) and Area Code (UK) explore how multiple layers of meaning may subsequently be inscribed, in a form of collaborative authoring or collective memory, complicating any simple realism by the multiplication of perspective. Other projects depart yet further from an epistemological frame measured in terms of truth and accuracy, such as Geograffiti (CN/UK) and GeoNotes (SE) which seek not to document or interpret the environment but to embellish it with digital graffiti or virtual tagging as expressive mark.

Within all these projects, however, the reliance on the clinical precision of digital tracking, and the emphasis on point-to-point correspondence, is rarely critically engaged.^{iv} In most cases ambiguity - or disruption of machinic precision - arises only in the negotiation of land features and the resolution or granularity of technical hardware. Clinical, clean precision is the limit point of locative art, its realisation and its undoing. While error may introduce sites of disturbance, when reduced to statistics it offers deviation but not disruption of the norm. The technical conditions of possibility of such projects, and the denotative relationship between contents, wherein location is unambiguously designated or assigned, is rarely addressed. Furthermore, locative art often works with a highly constrained understanding of spatiality. It encounters the fabric of space-time via an abstract coordinate system, betraying its indebtedness to cartography and GIS, in which location is reduced to a set of geographic coordinates or a wireless cell. In this respect the parallel between locative art and the work of Richard Long gains further resonance with the intervention of Bill Drummond, in which he drew x/y coordinates on one of Long's photographs before cutting out the pieces one by one, pieces which are now circulating in the hands of a thousand new collectors. For locative media's understanding of location often seems to share more in common with that of Drummond than of Long, its transcendent frame of reference much like the grid marked by Drummond on Long's photograph. Locative art's condition of possibility is a prior abstraction, and as a consequence its emphasis on location is accompanied by a distancing from embodiment, physicality and context, which - within such a reductive understanding of spatiality - become a mere residue of the coordinate system.

Locative art's focus on digital authoring within the environment, on a dynamic relationship between database and the world, offers the chance to take art out of the galleries and off the screen. All too often its vision of how location can actually be encountered is constrained by the limitations of available technology, participation often presenting the challenge of roaming the environment while squinting at a tiny screen and clunky menu, separated from the world by a barrier of bad usability. But, above and beyond questions of design, for it to "escape its own axiomatic system" (Trans Cultural Mapping, RIXC) and go beyond simple positioning, it needs to engage in how people's relationship to their environment changes, and to engage not only in location but also in context. It is too simplistic - for all but a minority of projects - to claim that context is reduced to a coordinate point, or that the understanding of place and of being in the world does not extend beyond the pull up display.

Rather these might be seen as tools through which context may be encountered, and their use becomes most interesting when the focus is not just upon placing data, but on opening up spaces of ambiguity and play.

One project that moves us towards an engagement in the perspectival and embodied is also in many ways the precursor to locative art. Initiated in 1992, and through its many contemporary iterations, Masaki Fujihata's Field-Works (Fig. 5) shows how nuance and hidden depth can emerge through the creative use of a technology designed to impose a rigid cartographic grid upon the world, going beyond simple documentation to open a rich space of contextual and aesthetic meaning. Through a juxtaposition of location data captured by GPS and moving image captured by video it similarly aims to articulate local narratives, while also excavating a sense of parallelism in the universe on a human scale. Field-Works stretches and pulls at the coordinate system - in the same way that dancers play with shifting the centre of gravity of the body to create a kind of distortion in the fabric of space-time - by introducing multiple view points, using a camera mounted gyroscope to translate even the intimate movements of the physical gaze as a part of the resulting work, and, in earlier versions of the project, representing the physical terrain as a function of the speed at which it is encountered. And while Fujihata's own focus is very much on the final and realised piece, the impromptu sketches made by participants in Field-Works highlight the fact that what is at stake is not only producing artistic works that can be shown in a gallery context, but also how the movements of people in the physical environment are affected.



Fig. 5: Masaki Fujihata (JP), Field-Works

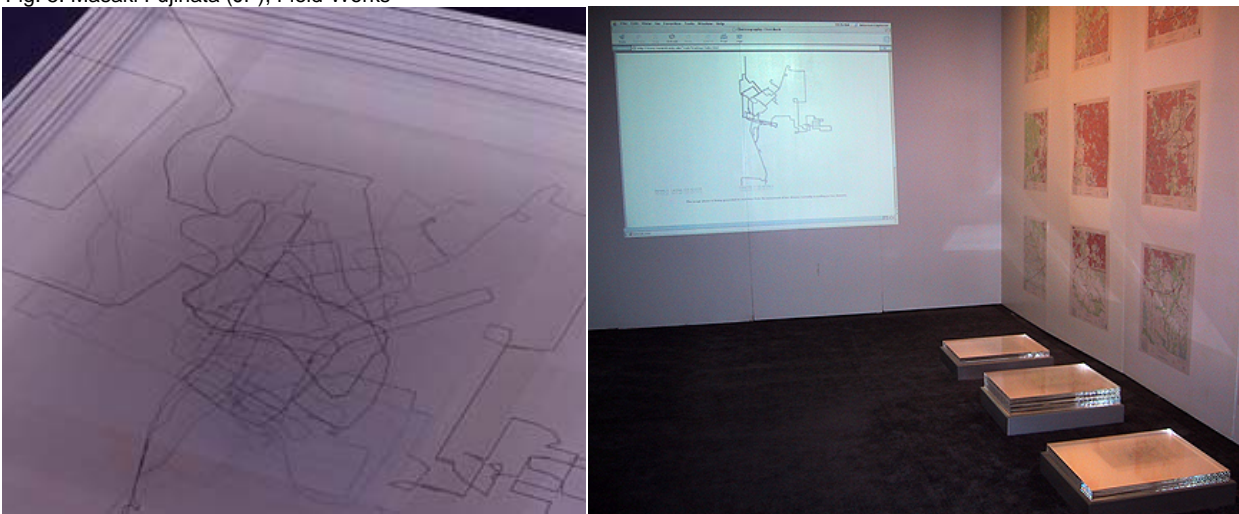


Fig. 6: Teri Rueb, Choreography of Everyday Movement

A similarly complex and multi-layered project is *Choreography of Everyday Movement* (Fig. 6) by Teri Rueb. This too incorporates GPS traces, but here they are inscribed in sheets of Perspex, which are then layered to create a kind of Rorschach image, opening up a plurality of interpretation rather than a statistical or figurative representation. In this piece Rueb works with classically trained dancers to explore the poetics of the urban body, placing emphasis upon the participatory spaces occupied by the participants, as well as upon the distance

between world and its representation. In the final gallery based representation the longitude/latitude coordinates are deliberately removed - "The performer is only visible as an ant-like dot crawling across the screen. Movement and physical presence are reduced to the most basic abstraction".^v Here we are reminded of Lev Manovich's identification of radar as that which epitomises the use of linear perspective to map and identify objects and spaces: "radar is the best example of the rationalization of sight in the twentieth century. ... [A] radar operator sees a screen, a dark field with a few bright spots. Here the function of visual nominalism ... is isolated and abstracted".^{vi} For just as radar can be said to clarify and condense the function of modern visual surveillance technologies, so Rueb takes the real-time abstraction of movement to an extreme at which its limit is revealed, the cartographic function left bare, punctuated by a singularity that is the point of interruption of the surveillant image. While other art practices also involve abstraction, such as in the musical or choreographic score, Choreography illustrates how - as a data based form - locative art brings the coordinate system itself into the frame, as the material upon which it works. In a sense a questioning of the transcendent grid might be said to be already at play in GPS Drawing, the positioning function of GPS and the abstraction inherent in it both highlighted and subordinated to the expressive figure or trace. But Choreography makes the abstraction explicit, and shows how, in bringing the cartographic system into view, a creative and critical stance to it becomes possible.

A number of projects address the question of embodiment within augmented environments in other ways. Biomapping (Fig. 7) by Christian Nold (UK) uses galvanic skin response measurements - of the kind used in lie detector tests - to record anxiety and stress levels of participants as they move through the city. Whereas here the data is presented in a conventional visual mapping format, Oscillating Windows by Katherine Moriwaki (US) takes the opposite approach, looking at how patterns of proximity and co-location emerge amongst participants relaying information across ad-hoc networks with no fixed centre, but rather multiple, mobile nodes. And .walk (Fig. 8) by Wilfried Houjebek (NL) draws on psychogeography in a kind of transverse encoding of the city, using computer code to denote a series of movements for participant's bodies, who follow algorithmic patterns around the city, and who alter those algorithms and paths by exchanging numerical data with other participants they encounter. .walk is generative in the sense that the consistent application of a simple algorithm continually shuffles the movements of participants with open and unpredictable results. And in creating an intimate and direct relationship between bodies and code it also shifts the focus from mapping or visualisation to performativity - enabling normally hidden operations to be not only brought into view but also performed.



Fig. 7: Christian Nold (UK), Biomapping

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// Classic.walk
Repeat
{
  1 st street left
  2 nd street right
  2 nd street left
}
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Fig. 8: Wilfried Houjebek, .walk

Other projects explore relationality as a means of opening up spaces of ambiguity rather than determinate correspondence. In *Hlemmur in C* by Pall Thayer (IS) two taxis equipped with GPS and their base at the Hlemmur bus terminal in the Reykjavik are each represented with a middle C note. While the sound attributed to the base remains constant, the pitch associated with the taxis varies according to their distance from the base, creating instability in the tone. This piece also involves a visual mapping component, but is most interesting in the way that relationality is registered as dynamic tension in the sound. *Aura* by Steve Symons (UK) is a virtual sound environment accessed by walking through a space equipped with GPS and digital compass. Individual users can “hear” the location of other participants, and work together to create sonic tapestries through their relative movements. Similarly *Sound Mapping* (Fig. 9) by Iain Mott (AUS) is an installation in which participants realise a composition by wheeling four movement-sensitive suitcases within a public place, with the “aim to assert a sense of place, physicality and engagement to reaffirm the relationship between art and the everyday”.^{vii} Three of the cases contain odometers measuring wheel rotation in both directions as well as two gyroscopes measuring tilt and azimuth, and they are linked by data radio transmitters to a fourth case equipped with GPS. While much work with GPS is limited by its low resolution - the nuance of embodied experience exchanged for a blunt on/off switch every few metres - *Sound Mapping* produces music in response to nearby architectural features, subtle movements and gestures, and the absolute and relative movements of the participants. By engaging in relationality and embodiment as well as in place it offers a rich vision of how participants may both respond to and shape their environment.



Fig. 9: Iain Mott (AUS), *Sound Mapping*

Through the emphasis on relationality found in such projects, an understanding of context as something open and constantly shifting rather than static emerges, an understanding similarly suggested by socially-oriented locative media projects where what is at stake is not just placing data or locating objects but a dynamic relationality that occurs through the overlapping of different kinds of mapping - geographical, social network, etc - within social interfaces to places (locative.org). The straightforward geo-annotation of space can be seen as an instance of what Deleuze has termed *emplacement*, which he distinguishes from “*haecceities*”, or “concrete individuations that have a status of their own and direct the metamorphosis of things and subjects”.^{viii} These have the kind of individuality we find in seasons or dates, as opposed to subjects or things, and “consist entirely of relations of movement and rest between molecules or particles, capacities to affect and be affected”. Locative arts offer the possibility of a form of individuation that is as distinct from clinical positioning as locative media’s social projects are from cell based advertising. When, on the other hand, they hide behind the console of positioning systems an abstract mode of individuation results. For locative art to exceed the sterile precision of its own axiomatic system it needs to act upon or through material bodies and substances, engage in the ambiguity, dirt, sweat and smells of the world, and acknowledge “the importance of rain, hail, wind, pestilential air, or air polluted by noxious particles, favourable conditions for these transports”. Then locative arts come to be seen not as distanced from the world but as offering a potential for transformation and engagement, contents circulating through location aware networks opening up a field of relations and affects.

Drew Hemment, August 2004
<http://www.loca.org.uk>

Links

[murmur]

<http://murmurtoronto.ca/>

Urban Tapestries

<http://urbantapestries.net/>

Uncle Roy All Around You by Blast Theory

<http://www.uncleroyallaroundyou.co.uk/>

InterUrban by Jeff Knowlton, Naomi Spellman & Jeremy Hight

<http://interurban.34n118w.net/>

Come Closer by squidsoup

<http://squidsoup.org/comecloser/>

Field-Works by Masaki Fujihata

<http://www.field-works.net/>

Choreography of Everyday Movement by Teri Rueb

<http://userpages.umbc.edu/~rueb/>

Stefan Schemat

<http://www.schemat.de/>

GPS Drawing

<http://www.gpsdrawing.com/>

Amsterdam Realtime by Ester Polak

<http://realtime.waag.org/>

workshop at Karosta in Latvia

<http://locative.x-i.net/report2.html>

RIXC

<http://rixc.lv/>

MILK by Ieva Auzina and Esther Polak

<http://locative.x-i.net/piens/>

Chris Byrne

<http://www.mediascot.org/>

Michelle Kasprzak

<http://michelle.kasprzak.ca/>

Area Code by centrifugalforces & Jen Southern

<http://www.areacode.org.uk/>

Geograffiti

<http://www.gpster.net/geograffiti.html>

GeoNotes

<http://geonotes.sics.se/> (Site down at time of publication)

Biomapping by Christian Nold

<http://www.softhook.com/biomap.htm>

Oscillating Windows by Katherine Moriwaki

<http://www.kakirine.com/windows>

.walk by Wilfried Houjebek

<http://www.socialfiction.org/dotwalk/>

Hlemmur in C by Pall Thayer

<http://130.208.220.190/hlemmC/>

Aura by Steve Symons

<http://muio.org/>

Sound Mapping by Iain Mott

<http://www.reverberant.com/>

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Endnotes

ⁱ Gilles Deleuze and Felix Guattari, *A Thousand Plateaux*, trans. Brian Massumi, Minneapolis: University of Minnesota Press, 1987: 316.

ⁱⁱ Thanks to Ben Russell for his discussion of the Karosta workshop.

ⁱⁱⁱ These points were explored at the Tracing Space panel, ISEA2004, Helsinki, 20th August 2004. <http://www.isea2004.net>.

^{iv} The issue is not the accuracy of the technical system employed, but the denotative relationship between contents, wherein location is unambiguously designated or assigned. Most tracking systems used are anything but precise, as the Karosta images illustrate. Different systems have different granularity or resolution, ranging from sensor networks (high) to cell based location data from mobile phones (low), and this will vary depending on the context: GPS, for example, is unreliable in built up areas.

^v Teri Rueb, <http://userpages.umbc.edu/~rueb/trackings/>.

^{vi} Lev Manovich, 'Modern Surveillance Machines: Perspective, Radar, 3-D Computer Graphics, and Computer Vision,' in *CTRL [SPACE]: Rhetorics of Surveillance from Bentham to Big Brother*, ZKM, Karlsruhe/The MIT Press, Cambridge, Massachusetts, 2002: 386

^{vii} Iain Mott, <http://www.reverberant.com/SM/>.

^{viii} Gilles Deleuze and Felix Guattari, *A Thousand Plateaux*, trans. Brian Massumi, Minneapolis: University of Minnesota Press, 1987: 261.