

# Ars Memorativa in the Interactive City: Private Layers, Sublime Technologies in Public Spaces

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The thin film of writing becomes a movement of strata, a play of spaces. **A different world (the reader's) slips into the author's place. This mutation makes the text habitable, like a rented apartment. It transforms another person's property into a space borrowed for a moment by a transient.** Renters make comparable changes in an apartment they furnish with their acts and memories; as do speakers, in the language into which they insert both the messages of their native tongue and, through their accent, through their own "turns of phase," etc., their own history; **as do pedestrians, in the streets they fill with the forests of their desires and goals.** (de Certeau 1984: xxi. Emphasis own.)

**"What the map cuts up, the story cuts across.** In Greek, narration is called "diegesis": it establishes an itinerary (it "guides") and it passes through (it "transgresses"). The space of operation it travels in is **made of movements: it is topological, concerning the deformations of figures, rather than topical, defining places.** (de Certeau 1984: 129. Emphasis own.)

"Constat igitur artificiosa memoria ex locis et imaginibus." **Artificial memory is constructed out of places and images** Ad Herennium, unknown teacher in Rome, 86-82 BC.

"Have you noticed how locative artists are often very bad with direction?" – a conversation on a street corner at a locative art event in Riga

In Ars Memorativa, the art of memory in Ancient Greece and the Middle Ages, theatres of memory, different imagined or drawn spatial representations were used as private visual extensions for memorizing and organizing information.<sup>i</sup> Today, mobile and web based

software enable an array of practices where abstract or mimetic maps are used to store and recall information about places, or at least, about location data points.<sup>ii</sup> Both memory practices seem to echo with Michel de Certeau's notions of walking in a city as an urban speech act (Certeau, Giard, Mayol, and Tomasik 1998: 97). With these notions of every day life as pedestrian and embodied rather than structuralist and abstract, I want to ask how location based media arts offer an individual experience or a memory practice of a city? Is the city now "interactive" as suggested in the ISEA2006 theme?

I don't intend to suggest any historical causality between ancient arts of memory and contemporary location based media practices. However, the cultural history of memory has inspired both technologists and artists dealing with places and spatial representation as I will demonstrate. For the ancient memory techniques, locations were metaphorical and used as memory tools. For location based media, locations are both metaphorical and physical.

In the ancient art of memory sentences and things to remember were "placed" in different rooms or "loci" in an imaginary walk through a house or a city. When the narratives were to be performed live, the physical itinerary was thought through while speaking.<sup>iii</sup> Frances Yates, who describes the art of memory being like an inner writing, quotes *Ad Herennium*, the first source on rhetoric as an art of memory:

For the places are very much like wax tablets or papyrus, the images like the letters, the arrangement and disposition of the images like the script, and the delivery is like the reading (Yates 1996: 22).

Metaphors of memory correspond with writing or imaging technologies.<sup>iv</sup> The key difference between the ancient memory techniques and the networked ones today is that instead of communicating with a personal memory system only, individuals can now create *shared ars memorativa environments* (like Urban Tapestries for mobile, or Google Earth for Internet use).<sup>v</sup> These software and memory sharing practices about places also do not deal with memory as archived distant pasts, but rather as a living present and experience, or a platform for sharing practical information about a location. If they become popular practices, it is also inevitable that urban geolocation archives will become “crowded” leading to waypoints and entire layers to be discarded, forgotten. Would they remain a marginal phenomenon, also this presentation has to do with a sort of media archeology for the future.

Another more recent occurrence of *Ars Memorativa* in the history of memory and technology is interesting in relation to location based media. According to Stewart Brand, *Ars Memorativa* inspired visual interface development at The MIT Media lab. In 1976, Nicholas Negroponte and Richard Bolt introduced an idea of “spatial data management.” One goal of the project was to understand the role of body movement as something to remember (Brand 1987: 138-39).<sup>vi</sup> Brand quotes Negroponte:

... The notion of motor-memory reinforcement ... I take this book and I go over to the shelf and stretch up on my tippy-toes to put it on the top shelf, and I've done this with my left hand. That helps me remember, when asked later, that it's on the top shelf on the left. (Brand 1987: 138).

According to Brand, the other source of inspiration for the idea of spatial data management came from Negroponte's “Greek” background. Negroponte and Bolt had written about ancient Greek mnemotechnique and memory palaces.<sup>vii</sup> “Instead of a palace or a temple, the group focused on what was right in front of them, the desktop” (Brand 1987: 139). The genealogy of Macintosh and Windows desktops and their development took place in many fronts and is not the topic of this paper. I want to suggest that while both memory and location in relation to a spatial metaphor of the desktop has been implemented, the physical side of spatial data management was reduced to that of hand moving a mouse or fingers

touching a trackpad.<sup>viii</sup> With location based media, spatial data management becomes physical, as the location and the movement of the user can become the main reference point in a system. In location based media, Earth's surface is the desktop.<sup>ix</sup>

Only a few of the recently developed mobile location based authoring interfaces are usable while in physical motion. The contextual data related to location coordinates is entered or accessed in intervals. Here, the act of making or accessing a record in a location corresponds with the motor-memory reinforcement called for by Bolt and Negroponte. Yet only media artists like David Rokeby through spatial video analysis have reached precision to track object locations rather than roughly a location in geographical coordinates. In this sense, also the location based media as embodied memory of a place is mostly based on vision, hearing and narrative related to a marked spot. A more complex embodied experience of a location does not match with the media format.

If walking is to be considered as a speech act in public space as Michel de Certeau suggests, the embodied act of making a record in mobile authoring is more so an inner writing, as the practice remains mostly within one's own imagination and experience. The act of making a record is indeed in public, yet the inscribed notes, sounds, images shared through networked maps are hidden from most of the people surrounding the author. Thus location based, or locative media, tend to be privately authored media layers indexically<sup>x</sup> relative to a public space, and usually exclusively shared by a set of participants. Most other urban dwellers cannot see what you do on your mobile device, but they do see you. The kind of performativity that is visible to others is usage and presence of mobile hardware. One of the questions this paper raises is whether location based performativity is about place, location data – or mobile technology.

Location based media and in particular the so called locative arts discourse have made claims for reconfiguring public spaces through participatory uses of mobile and wireless technologies in urban settings. The degree to which location based media can challenge existing configurations of public space can be questioned. I suggest to “read” location based media works on the one hand as metaphoric or conceptual acts which address the discourse of

public space, and on the other hand as private yet shared practices within public spaces.

Some of the location based arts practices are inspired by and resemble in their ways of interfacing memory to visuals historical and recent *Ars Memorativa*. Paradoxically enough, the latest media and memory experiments rely on interim technological platforms unlikely to last as long as wax tablets did in their time. To use de Certeau's words, an act of location based media is "a space borrowed for a moment by a transient" (de Certeau 1984: xxi). How well does this temporal engagement support a claim of reconfiguring public spaces through location based media practices? To that end, I am asking what kind of tactics of engagement and sustainability can one use in order to make one's practice – or theory – more grounded?

### **Background: Questions towards tactics for engagement<sup>xi</sup>**

When developing the core themes such as *Histories of the New* and *Wireless Experience* for *ISEA2004* around the year 2000, several people commented: won't they be outdated by the time of the event? This tendency to set the currency<sup>xii</sup> of media artistic and cultural work through projects and discourse that gain their relevance with each new technology is descriptive of both a desire and a disease for the New. Despite the use of digital memory tools, forgetting seems to also have accelerated.<sup>xiii</sup> I personally find myself at these junctions feeling curious inasmuch increasingly weary of repeated uncriticality that surrounds the fast lane of art, technology and theory. What seems to defang critique of that condition is an understanding of a kind of avant-gardist position that comes with the sheer combination of art with technology or art with science. Be it Virtual Reality tech, GPS or DNA-sampling, just the artistic use of them has gained an assumed relevance.

How then, to engage with motivation while being critical with new technologies in these mutating junctions where the fumes of economical and political interests intertwine with artistic and activist ones? A good starting point is to weigh discourse and practice (imagine a scale which has tentacles rather than two sides to it) by asking whether there exists a dynamic balance? But where is this scale located? Practice-theory relationship for

example within contemporary visual art can still consider theory as moldable material and practice as that which works the words and physics inside the white cube. Then we have these festival cubes, temporary lab islands, interconnected yet often isolated networks as environments for reflecting the effects of the tentaculous practice-theory scale. A key issue to investigate is the relationship with the multiple outsides and unknown insides of practice-theory combinations. For example, if location based media practitioners claim that they are re-configuring the public space through practice and theory, how does that manifest itself in lived everyday life environments?

How to counterbalance the junction of the New with recent and more remote historical contexts? How to develop tactics for engagement, in the kinds of work each one does, to break out of or be conscious of one's own permutable boxes, be it festivals, exhibitions, institutions or mailing lists as publics?

In the case of this exercise, presentation at *ISEA2006*, I am asking whether it is so that there is no "public space" as a wider phenomenon to re-configure; that rather what location based media projects address are spatio-temporal occurrences which are sometimes participatory? Perhaps these projects are better addressed as kinds of performative acts that one can compare with semi-public exchanges in cafés, street corners or on rural paths few "public media" know about? Should one think about location based media work as exercises with methodologies and technology that attempt to develop creative invisible seams within a wider configuration known as public space?

### **Location based media and arts: claims for re-configuring public space**

GPS (Global Positioning System) first developed in 1978 was used widely and visibly by the US military in the Gulf War during early 1990s, which also acted as the publicity boost it needed to become a commercial success by mid 1990s (Pace 1995: 245-49). It is used by military, various governmental organizations for producing maps and geospecific data, by transportation sector, and also by individuals in different outdoors activities. GPS data has not been used widely as a component of creative, artistic or social purposes until the last five or so years.<sup>xiv</sup>

The term *locative* was introduced by Karlis Kalnins from *The Centre for New Media Culture RIXC*, Riga to differentiate artistic exploration from commercially driven ones under the title *location based services* (Tuters 2004).

“Locative” may also be an attempt to brand an artistic field as an invention of a particular network of artists and researchers. *Location based media* is a neutral expression used to describe the field without necessarily specifying the purpose of a given project as artistic. Whether called location based or locative, either GPS location data, mobile phone or WiFi cell location information are used as components of interactive, often participatory projects, installations or tools.<sup>xv</sup>

In the *Locative TCM Reader* (Smite 2004) several practitioners and theorists reflect the “locative turn”. Marc Tuters, who has been one of the most active organizers and promoters of locative events and projects, calls for the need of a locative utopia. With a reference to Paul Virilio and U.S. Space Command’s Long-Range Plan and Vision for 2020 of “full spectrum dominance”, Tuters predicts that by 2020 super-equipped citizens will interact with different layers of urban space, constructed by programmers and shared potentially by millions. “...we can understand this mobile road warrior as the citizen of a new kind of utopia – in so far as utopia has always been about total control” (Tuters 2004). Discourse of locative media appears utopian slightly in the similar manner as early generations of video and Internet practitioners have related with technology as empowerment.

According to Drew Hemment, locative media operates on the same plane as state and commercial surveillance, practicing pinpointing and positioning and making the world readable: “The mobile phone puts the Panoptic eye in your pocket and places the body within the circuits of dataveillance, not only extending the reach of surveillance but also changing its form” (Hemment 2004). In other words, media arts practices of location data work in the same domain as the state and corporate sector, but enable change. For Hemment, locative media practices share optimism, an antidote to fears about increasing surveillance and politics of fear and offer an alternative localized utopia (Hemment 2004). Also for Tuters locative media can be seen as a possibility to imagine alternative futures: “Call it black magic i(f) you like, but I would contend that the socially-aware locative artist is experimenting with a new field

of techno-cognition of potentially utopian dimensions” (Tuters 2004). Tuters also remarks that he finds often art and cultural critics to be “hell-bent with exposing locative media as the harbinger of Apocalypse”. Both Hemment and Tuters position locative media as a practice which is somehow between utopia and dystopia and not pronouncedly critical.

Some of the locative rhetoric originates from activist media practices, for example the use of “tactical cartography” suggesting a resistant position towards mainstream modes of mapping and related technologies. For example a project by *Project Atol* and the *Locative Media Lab* for ISEA 2004, *The Mobile Cartographic Command Center (MC3)* claimed to be “the forward command post to engage free and open GIS, educational and commercial geographic institutions, and the tactical media art community in active discourse related to locative media, military conversion, collaborative cartography, and tactical public visualization” (Project 2004).<sup>xvi</sup> While the versatility in terms of rhetoric and used metaphors is well performed, very few of the projects that I have witnessed seem to be able to deliver either alternative future scenarios (of public space) or critical surveillance interventions. I will look at roughly two types of location based media and art practices: ones using GPS data and ones that deal with location and memory.

### ***Locative GPS: generative and performative drawing exercises***

*The MILK Project* by Esther Polak and Ieva Auzina won *The Golden Nica* prize in the category of Interactive Arts from the *Prix Ars Electronica* competition in 2005. The two artists document production of milk on a Latvian farm, its delivery to a cheese factory, and onto a cheese shop & consumers in Netherlands. GPS location traces and audiovisual documentation are combined to tell stories and the way the fieldwork (by artists) was conducted (Auzina 2004). According to Marc Tuters, even though the project is ridiculous as a model for locative media, it is the kind of project that is needed because of its evocative vision that may help to imagine what new combinations of technologies may enable (Tuters 2004). By combining social network mapping projects and approaches from *The MILK Project* Tuters considers a form of

locative media “that tactically uses the aesthetic appeal of maps to reach people more on the level of affect” (Tuters 2004). Such projects could enable “an experience of peering under the organized surface of consumer society to reveal a Matrix-like web of interconnected decentered complexity. ... perhaps even creating a new category for consumption that we might call “awaretarinism”” (Tuters 2004).

In The MILK Project the representational outcome of GPS use is a dot animation against a green background, an abstraction of the different routes people involved in the project took. Here, GPS does act as a metaphoric narrative tool or an affect, which in some ways suggests “authenticity” or actuality of the used documentation. In the web version, next to the animation are snapshots of participants and their comments on experiencing daily routines during the GPS tracing. In the project, GPS helped to motivate participants for whom GPS was a novel technology to engage in telling stories about their daily life. For end users of web documentation or installations made of the project, GPS data is no longer relevant, only its role as a “technologically sublime agent”.<sup>xvii</sup> In the project, “the locative” experience lies within the methodology of narration and documentation, and as a gimmick to involve both milk-cheese producing participants and later audiences to consider the project to be contemporary. Had the project been without the use of GPS, just video and web, it would have hardly won the Golden Nica. Another reading of the project could be to consider it being an ironic take of the role of GPS in daily lives. As an art project, it is an interesting site specific work that would have been fine without the use of GPS.

(Figure 1)

**Figure 1. The MILK Project (2004) by Esther Polak and Ieva Auzina web interface (Screenshot).**

GPS has been used as a “performing agent”<sup>xviii</sup> in several projects, for example *Ground Station*, by Daniel Jolliffe and Jocelyn Robert, is a transcoding of GPS satellite data into a sound installation suggestive of a musical score. The GPS satellite positions provide the changing variables that fall into the compositional environment created by the artists. In the abstract space of the gallery, the audience

listens to a computer-driven player piano that makes this transmutation between the two scales audible (Jolliffe and Robert 2003). In this case, people follow data from the satellites and are themselves not mobile. The generative composition piece has its own sound aesthetic qualities, but the role of the GPS seems mostly to be, besides a metaphoric framing, a kind of a *deus ex machina*, an invisible arm that plays the piano.

(Figure 2)

**Figure 2. Syren (2004) by Nigel Helyer is a GPS activated sound installation. Images from ISEA2004 on the deck of Silja Opera cruiser and a GPS waypoint map of Baltic Sea.**

GPS driven sound is also used by Australian sound artist Nigel Helyer, who presented *Syren* (2004) at ISEA2004 as an installation on the deck of a passenger ship. As the ship approached harbors of Stockholm, Mariehamn, and Tallinn, an audio collage played itself according to the ship’s GPS location (Helyer 2004). The ship itself became the playhead; yet again if seen from a listener perspective, one could not have known if it was a linear recording. Only the captain of the ship could have made the project interactive instead of generative; a risky move in the Finnish archipelago. In a later project based on further research, *Syren for Port Jackson* in Sydney Harbour, Helyer and his research team used a smaller boat, which could navigate different routes and produce different sound sequences. To summarize, in these projects GPS data borrows from the cultural imagination of what it means to look at earth from above, and GPS can be considered through that metaphoric point of view rather than its utility. On the other hand, GPS is the generative actuator that plays a pre-composed work. Helyer and his research group plan in future projects to work with PDA sets so that the audio narratives can be experienced by foot – thus adding more role for the individual choice by walking. The project, and Helyer’s concept of sound in location, was inspired by Frances Yates’s book *The Art of Memory* (Helyer et al. 2006).

Another work that addresses Art of memory explicitly is *This place as if you were someone else* (2004) by Daniel Belasco Rogers, who developed it as part of Mobile Bristol project.<sup>xix</sup>

*The project we made as a result of this first locative media commission came directly out of concerns ... of the city as mnemonic. I am fascinated by the idea that every street corner carries countless memories for those who have lived there or passed through and see locative media as a way of accessing those stories in the context that prompts them. This is a kind of dream to make a city talk to you and (give up) those stories you usually only hear after some time being there. (Belasco Rogers 2004)*

### **Trace drawings as minimalist gallery art**

If seen in the context of media art history, many works of location based media fit within the tradition of generative art. In early generative computer art in the late 1960s and early 1970s in particular, artists and engineers built computer based systems that could act or draw independently through a combination of artistic design and random alteration by the computer.<sup>xx</sup> When GPS is used for drawing, human participants act instead of random seeds in the generative process. On a rather megalomaniac, structuralist conceptual scale, the GPS connection forms a networked feedback loop with a rather distant sensor and a local computer. Individual users in most projects can break this feedback loop. However, as in most GPS projects participant's movement only changes the direction of a plotted line, their role is to be more so a random seed generator than someone who can produce meaning.

In *The Choreography of Everyday Movement* (2002) by Tery Rueb participants carry a handheld GPS, a laptop and a mobile phone, which transmit location data of their daily movements. First performed in Baltimore, later in the Siggraph Gallery in San Antonio, GPS data sent from performer's movements was drawn into single lines which were etched on glass, glass panes stacked on top of each other in a gallery. "Using GPS, the project seeks to render visible our movement through the built environment of the city, revealing socio-political and poetic patterns of traffic flow through the urban body" (Rueb 2002). (Figure 3)

**Figure 3. The Choreography of Everyday Movement (2002) by Tery Rueb transforms participant's movements to traces that in the processual art work are etched onto layers of glass.**

In *Amsterdam Real Time* by Esther Polak, participants carried portable gps+gsm gear and sent location data to a server, where a specially designed software in turn plotted maps of these daily walks in real-time on a public screen in Amsterdam. Here the real-timing of the event offered the drawing exercise additional social qualities as participants could walk and draw a pigeon, for example. "Every inhabitant of Amsterdam has an invisible map of the city in his head. The way he moves about the city and the choices made in this process are determined by this mental map. Amsterdam RealTime attempts to visualize these mental maps through examining the mobile behaviour of the city's users." (Polak 2002). (Figure 4)

**Figure 4. A 40 day cumulative map of walking and leaving a GPS trace, Amsterdam Realtime by Esther Polak (2002).**

There has been a sort of cartography boom in contemporary art. Reception of minimalist mapping projects has been welcomed by critics, where the simplest of representations can lead to leaping conclusions. Rebecca Ross comments Amsterdam Realtime: "The hierarchy presented on this map corresponds automatically with life in the city as its residents simultaneously create and experience it" (Ross 2006: 185-86). I believe this argument is based on the feature of Amsterdam Real Time, where the more there was repetition of use of a particular route, the stronger the visual impression on the map image. In my point of view, the outcomes of the drawing exercise are predictable, and the routes traced by the walkers in fact tell very little of the city and their residents' experience of it. A single line drawing

or an abstract map has never been a strong conveyer of rich experience. Ross comments Amsterdam RealTime in relation to historical maps of Amsterdam, present in the same exhibition, *Kaarten van Amsterdam: 1866-2000*: "Such blurriness is a counter-intuitive expression of a new potential for vitality in mapping, a new level of honesty about its own limits and capabilities" (Ross 2006: 186). She also tells of one participant, who wanted to draw a pidgeon and thus took him to entire new routes in the city. This inspires Ross to say that the "project encourages us imagine a very different use of maps – to reclaim spatial meaning" (Ross 2006: 186). Ross is not alone, also Brian Holmes extrapolates on the same project: "The most beautiful example of cartography in motion ... Their paths appear as lines of light on a black ground, only to be gradually effaced, giving way to the traces of other walkers. But the work is a fragile gesture, fraught with ambiguity: the individual's wavering life-line appears at once as testimony of human singularity in time, and proof of infallible performance by the satellite mapping system". (Holmes 2006: 25).

The Global Positioning System Drawing Project presents various GPS-generated drawings by the site authors as well as people who have contributed their own tracemaps. Contributions include traces of a car accident, Indonesian whale hunting, hiking, skydiving and so on. The authors have focused more on GPS writing and figurative drawings, which also translate as extensive physical efforts in the acts of recording (see Wood 2002). (Figure 5)

**Figure 5. It took Jeremy Wood 67,7 kilometers of bicycling to draw this map.**

Jeremy Wood and developer of *GPSograph* software Hugh Pryor also organize workshops in museums and schools about their practice – and they sell GPS prints as artworks. The outcomes makes one want to suggest to talk about this work as digital folk art, yet the participatory modes of drawing at least would add a new chapter to the genre. Wood seems also to have an ironic attitude in relation to contemporary art, as one of the recent drawings has a more refined aesthetic, a walk through the Frieze Art Fair in London (Figure 6). In early computer art exhibitions such as

*Cybernetic Serendipity* in the 1960s and 1970s, the barrier of engineers and technologists to make art, and artists to create technology, was lowered. A similar phenomenon is evident in the realm of creative GPS use. The graphical outcomes are somewhat similar in their aesthetic throughout. The affective impact of these projects arises from not so much the images themselves, but from participating in the processes of production, or considering the absurdity of the physical performance that it takes to create them – or from seeing a conceptual dimension in the technical setup. GPS drawing projects, instead of digging to culturally and socially diverse layers of the every day, represent an amusing banality of the everyday (like a car accident line which stops short).

**Figure 6. Visit to Frieze Art Fair, Regents Park, London, 21st October 2005 Jeremy Wood, 10 Metre Grid.**

*Hlemmur in C* (Figure 7) by Paul Thayer shows a dot represented location of two taxicabs relative to a station. Through a simulated web interface, you can listen to the constant middle C note but when the taxis start moving, their pitch changes. (Thayer 2004). These types of experiments, where both the graphic and audio qualities are very simple resemble software art, where the art often has to do with interrupting or interrogating a system or software code. In order to understand the references, a viewer, user, participant often has to be quite techno literate or enthusiast to appreciate the gestures made. Same could be said about GPS drawings of different sorts: they are produced by and for a particular subculture. *Hlemmur in C* could have been presented few years ago in the context of net art (because of the web interface) and as software art (because of the conceptual usage of self-made software). Software art is often a formalistic conceptual exercise where the frame of reference is the technical language and practice of software, not popular end user cultures nor particular visual or textual contexts outside of software. In a talk at the ReadMe software art festival (2003) in Helsinki I gave a presentation where I discussed this type of formalism as "conceptual software toys" – the main problem being, that often only ones who are literate of both

technology and the subculture's aesthetics and references get the pun, the fun, or a critique implied.

**Figure 7. GPS based sound installation for two cabs by Paul Thayer, Reykjavik (Screenshot).**

At the level of end user experience suggested socio-political connotations in all of the above projects are very hard to pin down, so far abstracted are the dot maps and their relationship with lived realities. The interesting aspects of the projects are their ability to engage participants to deal with GPS technology and an every day urban or non-urban walk in a non-ordinary way, and perhaps to consider their relationship with the city. These projects are social and playful processes for those who are directly involved. The graphic and visual outcomes are often far less evolved than computer graphics in the late 1960s, thus the aesthetic experience or a contextual reading for those who did not actually participate at the time when maps were drawn, is limited.

Ironically, GPS based projects are often not location specific even though they are location data sensitive. In other words, participating users could experience them in many similar settings in different parts of the world without the experience relative to the project itself being altered. GPS data in the above projects, except for *Ground Station*, is a set of x,y-coordinates relative to a limited set of borders. The outcomes of GPS drawing or tracing projects are abstract representations of movement. In the cases where the GPS+PC are used as interactive multimedia, the replayed media are actuated when a person by one's position steps onto a hotspot coordinate or a waypoint. In a way, the terrain itself has been turned to a clickable, two-dimensional interface. In some cases GPS data could be replaced by other types of signal-sensor combinations on the ground. There are however a number of projects where GPS or mobile cell data is necessary due to the scale of movement or due to user-centeredness of the authoring systems. It seems though that the starting point of some of the projects has been to develop a use for GPS rather than to

develop a project which would need location data for a contextual reason.

### ***Invisible murmurs, scribbles & notes in urban places***

"...if something means something to you, other people want and even need to know that. By contributing a story to \_\_\_\_\_, you're adding your distinct voice to the public discourse and record that defines what the city is." (Micallef 2003)

Canadian group [murmur] started a project in Toronto in 2003, where they collected stories of particular parts of the city, created a database with a "phone-in" interface. People who see a mark on the street designating a hotspot can phone to a particular number and listen to the stories that have their origin at or close to the location. They can also get in touch with the system authors to contribute a story. Shawn Micallef, founder of the project, says that their intention is to turn spaces into places through narratives about that location. (Perlman 2005)

In murmur the mobile phone is not location data sensitive. The project was designed so that anyone using a phone can it. Popularity of murmur is a good reminder of the fact that a mobile phone indeed is mostly a telephone, and the threshold to use it for voice and audio is lower compared to use of complex location data software. In murmur, hand drawn maps showing the story hotspots were distributed to local businesses in the neighborhood in Vancouver, Montreal and Toronto, where the teams had worked in designated areas to produce audio archives prior to the local launch. In this sense, the project was relevant to each place, not just relative to location data.<sup>xxi</sup> (Figure 8)

**Figure 8. Map to project murmur's audio hotspots in Spadina, summer 2005.**

In a recent essay in the *Metamute* magazine, Simon Pope discusses *Locative arts* through Michel de Certeau: "It is the possibility that meaning can be produced at a tactical level, even when a strategic position is denied, that is key. In the case of an imposed structure of

spaces – a mathematical description of all possible spaces – it appears that locative media operates at this level of resistance” (Pope 2005). For Pope, murmur is an example of such tactics. He also points out another project, *Degree Confluence* (Jarrett 2003), which has as its goal to collect an image from all latitude and longitude integer crossing points on the globe. The database already has over 50 000 images. Pope is reminded of Marc Augé’s ‘proliferation of spaces’ and he also considers “the compulsion for locative media projects to acknowledge or even invent these spaces” (Pope 2005). In other words, one potential of location based media could be to besides annotate already known spaces, also to write, reach, and contextualize locations that at this point have no or few known reference points.

Simon Pope participated to a public prototype trial of *Urban Tapestries*, a geo-annotation project by London based Proboscis. In *Urban Tapestries*, authoring participants can add red dots to a map and attach their notes, images or sounds as one moves in the urban space with a mobile PDA. Pope makes two interesting remarks about the experience. Firstly, the used technology is portable, but not so mobile, as in order to be stable in relation to the nearest mast or access point one needs to stop or slow down. (Pope 2005) Similarly, when authoring geo-annotation or accessing such data in a public space, person’s movement is halted. In other words, mobile technology in this sense is discontinuous in its mobility.

“The tension between the technology’s demands and those of its user as mobile agent tends to produce an equal awkwardness in us as we use these services. Our technologies appear to construct and perceive only a succession of stable points: locations at which can be found the annotations provided by our location based services. They are a constant reminder of the imperative to think of our movement as a sequence of discrete ‘moments’ at points in space. It seems that locative media operates on our understanding of movement as did photography. We are back to Muybridge and the capture of successive moments in time and space, yet, what is not captured is the smearing between one moment and the next.” (Pope 2005)

Pope discusses locative art in the context of Dan Graham’s video work titled *Past Future Split Attention* (1972). Video as a technology and as a mode of representation smears

together slices of past, current and future, not enabling an exact location. Pope suggests that in these works there are both sedentary and ambulant forms of knowledge at play: “Where sedentary knowledge demands a static and stable position for all knowledge, an ambulant knowledge supposes a mobility and a being between” (Pope 2005). An individual who archives or accesses archives (or databases of media) on a mobile device is momentarily removed from her or his active urban presence, while in the next moment s/he can be part of a discussion or avoid being run over by a car. This oscillation of activity between the portable interface and the living environment is something that in everyday is done with mobile phones, walkmans and mp3-players. For passersby, they see and hear only others with technology, not the contents they write or may access, they may overhear what you correspond or voice record.

If geo-annotated data would be part of a constructing a place through marking it with narratives (see Curry 1999: 1,4) and thus claiming it your own, it can still be done invisibly and shared with only those who subscribe to the same project or service and use the right software and hardware. This eclecticism runs dramatically astray from an idea of expanding or re-imagining public space as an accountable place through digital media, unless one is able to both work with existing and commonly used technologies or interfaces, or invest otherwise in making the produced data visible and accessible by many.

Pope discusses Peter Wollen’s analysis of the Situationists On Kawara and Douglas Heubler, for whom maps could banish emotional responses to urban space. He contends that Situationists had a much closer tie to their locality than today’s conceptual artists (many locative media practitioners), for whom a map is “a simple, generic method for recording the spatial aspects of a sculptural practice on an expanded scale” (Pope 2005). Precisely so; the politics of transcoding data onto another set of data or media, or acts of merely making recordings need to involve questions of why and for whom, rather than its done because it can be done. For example, *Urban Tapestries* pays attention to developing its technical platform in different social contexts in urban neighborhoods. Unfortunately, in practice, also their software works only on a particular mobile PDA or smartphone model, and furthermore, setting up each trial takes considerable amount

of resources. Location based media producers who write their own software face difficulties with standards that are in fact not standards; mobile phone software interfaces differ vastly even with the same manufacturer. Early phases of artistic location based media should be seen as such and popular public use cannot yet be expected.<sup>xxii</sup>

*Geograffiti* (K. Kalnins and Tuters 2004) resembles Urban Tapestries as a software, but it seems to have a wider range of applicability and it is open source. As a project, it is different since it explores technical rather than social issues when designing location aware software and hardware setups. Wider impact of initiatives like *gpster* lie in the usability of the software by others without the need to develop technology from the scratch. *gpster.net* is also a database for sharing geolocation information. One example of a project that has utilized *gpster* software is *Songlines* (K. Kalnins, Marc Tuters 2004) produced in Utrecht and Strasbourg. It involved both generating and experiencing location specific text, audio and images in the city space. Also a tool developed by *gpster* is *Where-Fi*, a software which can turn any WiFi network to a location grid. A related project *GeoNotes* for PC PDAs, developed at SICS, Sweden, enables users to leave notes to a database via WiFi, and others users can access them when visiting the same physical space (Fagerberg, Espinoza, and Persson 2004). (Figure 9)

**Figure 9. A screenshot of Gpster data entry form for sharing geolocation data.**

Most of the wireless creative projects are accessible in a given location for a limited set of time and for a small number of participants at once. They are often constructed in cities in the context of a new media festival or an exhibition, trade fair, or a university campus. In addition, when maps with coordinates are needed, the projects tend to favor locations where they are available and teleoperators are easy to work with. If one considers these restrictions in relation to the critical contextualization made of non-military uses of GPS for instance, the active subjects (instead of targets) are to be found also in the same, privileged locations. It

would seem that the metanarratives of counter cartography are less valid than those dealing with urban planning and urban regeneration. The difference in approaches corresponds with the distinction that Michael R. Curry discusses between theorization of space and place. Narratives of place involve utterances of “this is what we do here”. According to Curry, writers like David Harvey and Henri Lefebvre, who do discuss places as results of material practices, do not themselves seem to come from a particular place but speak from a placeless view, view from above. (Curry 1999: 10) With location based media, one could divide positions roughly by asking whether the authors start from the ground up (users and practices), or from the satellite (or network) down?

Wireless public authoring projects are usually hardly, if at all visible in physical locations they refer to, except through the act of recording. Here, visual desktops in turn have become miniscule, increasing the indexicality and textuality of representations of place. I am arguing that in order for these practices to reach wider relevance as shared archives or communication environments in public spaces, the minimum requirement is to leave physical public signs in these spaces to be discovered – or to use other media like radio, Internet, newspapers etc. to reach particular groups of users. Visible or audible tactics of engagement are vital in order to turn private layers of contemporary *ars memorativa* into acts which may reconfigure public spaces.<sup>xxiii</sup> These acts also should find sustainable ways of existing in time beyond festivals and exhibitions – and software platforms.

### ***Between fiction, photo-albums and urban poetry***

Quite many artists who are not engaged with developing software for location data choose instead to use accessible tools to address locations, still using mobile phones. These off-the-shelf technologies include moblogs and MMS messaging.

Simon Pope asks whether locative media should be viewed as a form of fiction that offers a similar kind of urban authenticity as the literary novel once granted countryside (Pope 2005). From the perspective of authenticity of the narrator, yes, the person who is making a record appears as a person who is making an

account of urban life from a particular physical position. When listening to the stories posted in murmur for example, the location seems more like a connecting point between different stories yet the stories themselves are dealing with odd events that happened to the persons themselves. In that sense, the narratives do turn a space into a place by answering the question: what happened here? The voices are multiple, and do not support a realist novel effect of telling a full story. The location is more so romanticized than deciphered readable or contestable, a fragmented autobiographical mode of production tied to a location.

*Rengo* workshop by Aware collective (organized during ISEA2004) explored the practice of Japanese renga (linked-verse), taking shots of the urban landscape using mobile phone cameras and uploading them to a mobile blog. The strategy of *Rengo* is “working from the lowest common technological denominator to maintain flexibility and inclusiveness” (Patterson 2004). Participatory walks in the city space aim at showing the urban landscape in a new way, inspired by the Situationists. According to Denis Cosgrove, also Michel de Certeau was inspired by the Situationists, who introduced “dérive or a drift as a way of experiencing everyday life in the city free from the attempts of authority to plan and regulate urban movement” (Cosgrove 2006: 156). In *Rengo*, the drift results in images that are not so engaging to look at and make very little sense to those outside the workshop or a walk. Mobile phone cameras seem to act here more as marking a moment when a picture is taken rather than as a means to take a photograph. This may be illustrative of the every day practices using MMS, where images have a shorter life-span and they communicate a feeling of a given moment in a particular location. Interestingly, location specificity as a site specificity emerges through time and location, as a situation specific media that allows quick dissemination of images, text and sound to a small network of friends, if so wanted, in almost real-time.

In order to be engaging and accessible, software for producing and interfaces for sharing often require designs not available off-the-shelf. Project *Nine* (9) by Graham Harwood & the Mongrel collective focuses on enabling collective authoring with an aesthetic and social approach that lowers the threshold to use digital technologies for shared expression. *Nine* has features such as knowledge maps that

suggest affinities between different participants to the project. The project grew out of an experience that most commercial software were not designed for workshops and social communication by non-technology experts. As with a previous social software project by Mongrel called *Linker*, participants can give a high-end aesthetic look to their images and sound clips. At the end of projects in a given location, workshop participants have communicated with friends and family. *Nine* is unique as it has as its pedagogical aim empowerment and staging communication rather than being publicly presented (Harwood 2003). This level of participatory design if find often lacking in location based media projects.

Also Heidi Tikka’s *Births* (Tikka 2003) or *Situations 4x* (Tikka 2004) work with a particular group of people in everyday contexts to generate images and narratives through participation. In *Births*, at the Helsinki birth clinic nurses and mothers participated in uploading images of newborns which were projected almost in real-time on Contemporary Art Museum Kiasma’s window. *Situations 4x* portrayed everyday events of three families in Finland through MMS images. Here, the almost real-time publicness of sent images transforms also the act of recording, as participants are selecting images to become frames in an edited public slideshow from their private lives. Yet the question remains what is the meaning of mobility in this case? Perhaps the factor that the camera is easily transportable bears an influence, and low-resolution images offer some level of reason not to focus so much on the photographic quality (both technical and family album genre specificity) as one would with a regular camera. Another feature that may lower a threshold to go public with a family shot is the ease at which MMS enables instant dispatch of the image without the collective censorship that a family album usually involves.

The feature of real-time in these projects fosters communication between the participants yet it is quite irrelevant for later viewers. Between private family albums and public web-based image archives, these projects address places and relationships between places. They seek authenticity via real-time as presence. As the event of performing the recording and archiving is over, the narrativity and grounded aspects to lived space may also fade away from the documentation. In this sense, the experience of MMS projects dealing with location involve live performativity, staging your

own images or stories for public access and thus becoming accountable for being, if only for a fragment of time, part of a place. The user of wireless location based environments is thus primarily a participatory one, the person who makes a recording or takes a picture, or annotates a text into a representational media about a location. Experience is more bound to relationships of a particular moment and a location with the different content archived or retrieved rather than to interactivity in the process or the interface.

### ***Technological landscapes and mapping of data as the sublime***

Mapping as a metaphor for either physical or metaphoric activity has long ago escaped its geographical boundaries. Particularly in the 1990s, along the same time of "Poetics of...", books with titles including "Mapping the ..." mushroomed. With satellite imaging becoming increasingly accessible and different uses of GPS more common, a new mapping and cartography boom has surfaced in cultural and urban theory, as well as in media and contemporary art. Enthusiasm about potentiality of maps and mapping is well expressed in the introduction by Janet Abrams and Peter Hall to a collection essays, art and design projects titled *Else/Where: Mapping. New Cartographies of Networks and Territories*:

"Mapping has emerged in the information age as a means to make the complex accessible, the hidden visible, the unmappable mappable. As we struggle to steer through the torrent of data unleashed by the Internet, and to situate ourselves in a world in which commerce and community have been redefined in terms of networks, mapping has become a way of making sense of things." (Abrams and Hall 2006: 12)

Abrams and Hall maintain that mapping "transcends the supposed physical/digital divide" and also acts as "the conceptual glue linking the tangible world of buildings, cities and landscapes with the intangible world of social networks and electronic communications" (Abrams and Hall 2006: 12). In more concrete terms, for them, mapping is also about plotting points and relating common terms with which to analyze data (Abrams and Hall 2006: 12).

Acts of mapping and doing cartography in motion are central to artistic location based

media practices as I have demonstrated. Concern with location data has provided a different emphasis to debate on location/place, yet indeed location has been central to much of contemporary arts since the 1960s. In an essay on public art in 1995 Lucy Lippard called for a focus on "the local, the locale, the location, the locality, the *place* in art..." (Lippard 1995: 114). According to Lippard, even though culture and the concept of place are inseparable people and ideologies are often left out of art about land and landscape. It is perhaps this similar type of situation which has emerged with location based arts and creative wireless practices: either people or ideologies are often missing from the technological landscape.

Theorization and abstraction of spatiality and subject's relationship to it (including breaking down Cartesian divisions with it) have emerged proliferated with new technologies. In mid 1990s cyberspace became a deeply mystified and sublime "space". Sherry Turkle claimed that the user's identity is split between different agent selves on the Internet (Turkle 1997: 178.) "The computer takes us beyond a world of dreams and beasts because it enables us to contemplate mental life that exists apart from bodies" (Turkle 1997: 22). Besides fantasizing about disembodiment, majority of cyber space theories also left identity politics behind. In a similar manner the abstraction about location as the location data claims authenticity or constructs a location but does not actively address it as a conflicted site for identities; it points at space rather than at a place. While the World Wide Web isn't a spatial holistic representation of the world, how could a representational software using location data be that for a particular location?

Richard Coyne discusses narratives of cyberspace and complex systems through concepts of the sublime and transcendental. Utopian or dystopian narratives related to technology (for example location data) seem to raise anxiety, fear and hope, feelings related with the sublime and transcendence (see Coyne 1999: 61, 107, 36). Anthony Townsend writes in the TCM Locative Reader:

"We currently stand at a unique moment in history as technological forces gather to reshape the urban environment through the use of "locative media". ... The rapid convergence of mobile communications, automated positioning systems (GIS) into locative media is raising the possibility of a dramatic transformation of the way we perceive and

move about the urban environment, and how we interact with each other in urban spaces” (Townsend 2004).

For Townsend, then, transcendence through locative media means a reinvention of urban public spaces for the individuals who are surrounded by sturm und drang –types of technological forces.

One can also argue with Richard Coyne that like romantics informed by Kant’s and Burke’s concept of the sublime, in the case of new media the latest technology appears almost as a force of nature, generating “... awe and admiration at the various spectacles of nature that raise the soul above the vulgar and the commonplace, arousing emotions akin to fear rather than merely joy” (Coyne 1999: 60-61). Technological and nature romantics have in common a relationship with something that is not visible in its entirety; whether it be the force of nature or an enabling technology. As a material practice, location based work is also embedded in databases, software, different types of stored media, interfaces and the human (and non-human) hands that produce each part of the whole. Because of the complexity of that whole, how it works becomes a source of fascination as well as fantasy.

Contrary to what I am suggesting here, Lev Manovich sees that “data visualization art” offers its pleasures through an anti-sublime, because “it carries the promise of rendering the phenomena that are beyond the scale of human senses into something that is within our reach, something visible and tangible”. Manovich claims that this is opposite to what romantic artists have considered sublime, because they thought of phenomena as un-representable, beyond senses and reason. To evaluate Manovich’s view, one needs to address how computers enable making phenomena representable.

Lev Manovich lists dynamic data visualization as one of the new cultural forms that computing has enabled, besides those of Graphical User Interface, databases, navigable space and simulation. In the context of computing, Manovich says that computer visualization is a “subset of mapping in which a data set is mapped into an image” (Manovich 2002). He emphasizes the politics of mapping, and more precisely, that of quantified data representation as an important parallel to questions of iconic and narrative media representations. According to Manovich, computer’s ability to map one

media (or data) onto another media makes it meta-media. As an example he discusses Lisa Jevbratt’s project *1:1* (Figure 10), where she took all possible IP-addresses and visualized the web into a new kind of image of the web. “The macro and the micro, the infinite and the endless are mapped into manageable visual objects that fit within a single browser frame” (Manovich 2002). I would argue against Manovich that these visualizations would fundamentally differ from those of romantic era in their relationship to the representable. A single image of the web cannot be a representation of the web in its complexity as a human phenomenon; in this case it is merely an indexical abstraction of its ip-address infrastructure, a representational act that mystifies the Internet not unlike religious images relate with nature’s wonders. Like the Internet cannot be condensed into a single image, a location cannot be folded into a set of coordinates.

**Figure 10. Lisa Jevbratt: 1:1 Interface: Every (1999) digital print at Walter Phillips Gallery, Banff, Canada.**

Managing nature and technology is a mundane performance of power, in which making parts of such environments hidden, visible, tangible and understandable are subsets of the overall act. Concept of the sublime may deal not only with the power to hide/make visible, to understand/not to understand, to place out of reach /to make tangible, but also with the experience of power acquired through knowing and/or performing how it all works. Gene Youngblood, in *Expanded Cinema*, believed in 1970 that:

“It is quite clear in what direction man’s symbiotic relation to the computer is headed: if the first computer was the abacus, the ultimate computer will be the sublime aesthetic device: a parapsychological instrument for the direct projection of thoughts and emotions” (Youngblood 1970: 189).

Sublime here is constituted of a cybernetic fantasy of transcendence. The main difference between 1960s and 1970s cybernetic discourse compared with contemporary computer network inspired practice and theory is that the fantasy

is no longer primarily cybernetic (integration of flesh and devices) or disembodied (transmitting bodies as data), but that of equipping the self and private/public spaces with mobile and technical means to transcend them as they are in everyday life today. Similarities during periods of technological emergence (computers, video, VR, Internet, wireless) are surprisingly many; the oscillation between utopian and dystopian approaches slowly fades away as both technologies and user cultures become commonplace.

Manovich points out correctly that there is a common problem with mapping and computer media in general, "its built-in existential angst." Computer's quality to enable mapping any data onto any other set of data or media does not mean that people who do it make explicit for others why they chose a particular set of data to map onto each other. This, in general, is an acute question in location based media as well (for example, why did The MILK project represent people's movement merely as dotted

lines, and not linked to contextually meaningful other data/media?). Manovich suggests that perhaps the important task for data art is to represent personal subjective experiences of living in a data society. (Manovich 2002). Or with Lucy Lippard, one can ask, "(c)an an interactive, process-based art bring people "closer to home" in a society characterized by what Georg Lukacs called "transcendental homelessness"?" (Lippard 1995: 115). Lukacs used the term to describe modernist philosophy through an urge to be at home everywhere. Transcendental placelessness could be used to describe practices of imagining a place wherever there is location data. While limited for a split second for a single individual, the obvious excess provides an interesting paradox for locative desire.

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## References

- Abrams, Janet and Hall, Peter (2006), 'Where/Abouts', in Janet Abrams and Peter Hall (eds.), *Else/Where Mapping* (Minneapolis: University of Minnesota Design Institute), 12-17.
- Auzina, Ieva and Esther Polak (2004), 'The MILK Project', (Riga: RixC Centre for New Media Culture).
- Belasco Rogers, Daniel (2004), 'This place as if you were someone else', (Bristol).
- Brand, Stewart (1987), *The Media Lab : inventing the future at MIT* (New York, N.Y.: Viking) xvi, 285 p., [24] p. of plates.
- Certeau, Michel de, et al. (1998), *The practice of everyday life Volume 2. Living and cooking* (New revised and augmented edn.; Minneapolis (Minn.): University of Minnesota Press) xlv, 292 s.
- Cosgrove, Denis (2006), 'Carto-City', in Janet Abrams and Peter Hall (eds.), *Else/Where Mapping* (Minneapolis: University of Minnesota Design Institute), 148-57.
- Coyne, Richard (1999), *Technoromanticism : digital narrative, holism, and the romance of the real* (Cambridge, Mass.: MIT Press) x, 398 p.
- Curry, Michael R. (1999), 'New Technologies and the Ontology of Places', paper given at March 4, 1999.
- de Certeau, Michel (1984), *The practice of everyday life* (Berkeley: University of California Press) xxiv, 229 p.
- Draaisma, Douwe (2000), *Metaphors of Memory. A History of Ideas about the Mind.*, trans. Paul Vincent (Cambridge, UK: Cambridge University Press) 241.
- Fagerberg, Petra, Espinoza, Fredrik, and Persson, Per 'Genotes, Digital Graffiti in Public Places', <<http://geonotes.sics.se/>>.
- Harwood, Graham, Mongrel collective 'Nine (9)', <<http://www.mongrelx.org/home/index.cgi?Software>>.
- Helyer, Nigel (2004), 'Syren', (Stockholm, Tallinn: ISEA2004), GPS activated sound installation on the deck of Silja Opera cruiser.
- Syren for Port Jackson* (2006) (DVD, Audio Nomad / UNSW Engineering, March 17th, 2006) DVD documentation of an art and research project.
- Hemment, Drew (2004), 'Locative Dystopia 2', in Marc Tuters and Rasa Smite (eds.), *Acoustic Space: Trans Cultural Mapping* (Acoustic Space, 5; Riga: RixC).
- Holmes, Brian (2006), 'Counter Cartographies', in Janet and Peter Hall Abrams (ed.), *Else/Where Mapping* (Minneapolis: University of Minnesota Design Institute), 20-25.
- Jarrett, Alex 'Degree Confluence Project', <<http://www.confluence.org/>>.
- Jolliffe, Daniel and Robert, Jocelyn (2003), 'Ground Station', (Vancouver: Surrey Art Gallery).
- Kalnins, Karlis and Tuters, Marc 'Geograffiti', <<http://www.gpster.net/geograffiti.html>>.
- Kalnins, Karlis, Marc Tuters 'Songlines', <<http://www.impaktonline.nl/songlines.html>>.

- Lippard, Lucy R. (1995), 'Looking Around: Where We Are, Where We Could Be', in Suzanne Lacy (ed.), *Mapping the terrain : new genre public art* (Seattle, Wash.: Bay Press), 293 p.
- Mäkelä, Tapio (2006), 'Digital fever: An Art of Memory: Interface, Metaphors, and New Genres of Representation.' in Sarah Cook, Sara Diamond, and Susan Kennard (eds.), *Utopia/Dystopia: The Banff New Media Institute Dialogues 1995 - 2005*. (Banff: Banff Centre for the Arts).
- Manovich, Lev (2002), 'The Anti-Sublime Ideal in Data Art'.
- Micallef, Shawn, James Roussel, Gabe Sawhney (2003), '[murmur]', (Toronto).
- Pace, Scott, Gerald P. Frost, Irving Lachow, Dave Frelinger, Donna Fossum, Don Wassem, Monica M. Pinto (1995), 'Appendix B: GPS History, Chronology, and Budgets', *The Global Positioning System: Assessing National Policies* (Santa Monica, CA: RAND Corporation ), 403.
- Patterson, Andrew, Aware collective (2005), 'Rengo workshop', <<http://aware.uiah.fi/rengo/>>.
- Perlman, Stacey M. (2005), 'The art of mobile technology', *The Boston Globe*, April 18, 2005.
- Polak, Esther (2002), 'Amsterdam Realtime', (Amsterdam: Waag Society).
- Pope, Simon (2005), 'The Shape of Locative Media', *Mute*, (29).
- Project, Atol & Locative Media Lab 'MC3: The Mobile Cartographic Command Center Design Document (v 1.1) ', <<http://locative.x-i.net/cccl/>>.
- Reichardt, Jasia (1971), *Cybernetics, art, and ideas* (Greenwich, Conn.,: New York Graphic Society) 207 p.
- Ross, Rebecca (2006), 'Perils of Precision', in Janet Abrams and Peter Hall (eds.), *Else/Where Mapping* (Minneapolis: University of Minnesota Design Institute), 184-86.
- Rueb, Tery (2002), 'The Choreography of Everyday Movement', (Baltimore).
- Smite, Rasa Smite, Raitis Smits (ed.), (2004), *Locative TCM Reader* (2005; Riga: The Centre for New Media Culture ).
- Thayer, Paul (2004), 'Hlemmur in C.' (Reykjavik).
- Tikka, Heidi (2003), 'Syntymiä (Births)', (Helsinki: Kiasma Contemporary Art Museum, Helsinki), A mobile service experiment
- (2004), 'Situations 4x', (Helsinki: ISEA2004).
- Townsend, Anthony 'Envisioning the Ubiquitous City', *TCM Locative Reader* <[http://locative.net/tcmreader/index.php?cs\\_paces;townsend](http://locative.net/tcmreader/index.php?cs_paces;townsend)>.
- Turkle, Sherry (1997), *Life on the screen : identity in the age of the Internet* (New York: Simon & Schuster).
- Tuters, Marc (2005), 'The Locative Utopia', *Locative TCM Reader* [www], <[http://locative.net/tcmreader/index.php?en\\_do;tuters](http://locative.net/tcmreader/index.php?en_do;tuters)>, accessed 7.12.2005.
- Wood, Jeremy (2002), 'Brighton Boat', (Brighton), Two images on the website [gpsdrawing.com](http://gpsdrawing.com) in a screenshot.
- Yates, Frances Amelia (1996), *The art of memory* (London,: Pimlico) 439 p.
- Youngblood, Gene (1970), *Expanded cinema* (Dutton paperback; New York,: Dutton) 432 p.

<sup>i</sup> The most concise account on Ars Memorativa is *The Art of Memory* by Frances A. Yates, written in 1966. Most information of memory practices are either medieval accounts of Greek/Roman writings or later theories written in 16th and 17th centuries. The most notable ars memorativa writers were Augustinus, Giulio Camillo, Giordano Bruno, and Robert Fludd. The first account of Ancient memory technique – and the story of poet Simonides, is delivered by Cicero in his *De oratore*. See Frances Amelia Yates, *The Art of Memory* (London,: Pimlico, 1996) 439 p. at 17-41..

<sup>ii</sup> I am not suggesting that there is a historical continuum or a rediscovery of ancient memory techniques in location based media as a form of public authoring. These resemblances are interesting when looking at a cultural history of memory techniques and technologies and related metaphors. Both share a use of a particular grid, a visual representation of a location, which is both marked and written into. Location based media is emphasizing a particular point in space, where as for Ars Memorativa, loci where only metaphoric tools. However, media artist Nigel Helyer on a DVD documentation of Audio Nomad project, *Syren for Port Jackson*, talks about Yates' book and how the idea of storing memories into locations had started his research project into location based sound. *Syren for Port Jackson* (2006) (DVD, Audio Nomad / UNSW Engineering, March 17th, 2006) DVD documentation of an art and research project.

<sup>iii</sup> For an overview of Ars memorativa, see Douwe Draaisma, *Metaphors of Memory. A History of Ideas About the Mind.*, trans. Paul Vincent (Cambridge, UK: Cambridge University Press, 2000) 241 at 24-48.

<sup>iv</sup> For an excellent account of the relationship of writing technologies and memory, see Ibid..

<sup>v</sup> I will describe and discuss Urban Tapestries later on <http://www.urbantapestries.net>, <http://www.maps.google.com>)

<sup>vi</sup> Interaction designer Jussi Ängeslevä has worked with research related to body movement, memory and mobile phone use: "Body mnemonics is a meta tool for portable devices that enhances their usability, shifts the interaction to the periphery of our concentration and makes them more responsive to our cultural background on the basis of three principles: proprioceptive sense, body image, and the "method of loci" mnemonic device."

<http://angesleva.iki.fi/index.php?order=name&condition=body%20mnemonics>

<sup>vii</sup> Brand cites MIT discussions of the classic ars memorativa example, that of poet Simonides. Simonides, as the story goes, had been in a party when the whole house collapsed. He was miraculously saved and, when the dead bodies were dug out, he was able to tell who was who by remembering where the people had sat before the accident. Thus the early memory technique was developed, where "For each successive subsection of the talk to be given, the orator would mentally walk from place to place within the temple, rehearsing the appropriate material before some specific piece of statuary" (Brand 1987). For a detailed description, see Yates, *The Art of Memory* at 17-18..

<sup>viii</sup> Media artists have explored a wide array of body movement in relation to interfaces, and the now seemingly obscure experiments with Virtual Reality also paid attention to embodied interaction. However, body movement in relation to interface and memory has been less discussed, at least in HCI-research or media studies.

<sup>ix</sup> PC desktops are coordinate systems, where the position of the user is marked by a singular coordinate in relation to a visual reference. In most location based media projects, the visual reference is the Earth's surface or an individual's movement plotted on it. This analogue falls short, however as operating system desktops have very specific functions and have become a software genre, which location based media applications are not.

<sup>x</sup> By indexical relation I am referring to Piercean semiotic, where smoke refers to a fire, and on a map, a dot is understood to refer to a fixed point in real space. It is an indexical relation, but a very thin representation of that place. Also these visual representations do not call for interpretation, they are supposed to act as "waypoints" leading the user to a media clip. Waypoints are part of the navigation system, very much like the early clickable arrows and dots on early CD-ROM based multimedia and web interfaces.

<sup>xi</sup> This section of the paper is more aimed at the ISEA context and can be reduced to an endnote or a paragraph or deleted in other instances of this paper.

<sup>xii</sup> By currency here I mean both value of work and being up-to-date.

<sup>xiii</sup> I have discussed this topic in a paper, Digital Fever that I first gave at Banff Centre for the Arts in 2001 Tapio Mäkelä, 'Digital Fever: An Art of Memory: Interface, Metaphors, and New Genres of Representation.' in Sarah Cook, Sara Diamond, and Susan Kennard (eds.), *Utopia/Dystopia: The Banff New Media Institute Dialogues 1995 - 2005*. (Banff: Banff Centre for the Arts, 2006).. Later versions in different venues, published also in Estonian.

<sup>xiv</sup> Many earlier works have made use of satellites. For example, in 1988 Austrian artist Richard Kriesche performed *RadioZeit* during a sound art symposium *With the Eyes Shut* in Graz. He used weather satellite information to play a digital sampler/keyboard with Mozart's *Eine Kleine Nachtmusik* loaded in it, and to project satellite imagery for a small audience in his studio. (see for example <http://www.medienkunstnetz.de/works/radiozeit/>)

<sup>xv</sup> Since ISEA2006 I have started to expand on this paper under the title "Technologies of location" which suggests a wider sense of location based media arts than those using location data. Also in this paper for ISEA2006 I discuss work that uses mobile phones but not location data to address locations.

<sup>xvi</sup> GIS = Geographic Information System.

<sup>xvii</sup> By "technologically sublime agent" I mean an object or a medium, which is considered to be a new and fascinating technology, and which by its presence or through just naming it grants the work or a wider context it is part of, a status of novelty and a source of fascination. The concept of sublime will be discussed more later on.

<sup>xviii</sup> A performing agent here means the source data that actuates the pre-composed work, the not-so-random seed that generates change in the system. It is a performing agent, as it is given the position of control and play in the project, yet it is an agent because it is not a subject position.

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<sup>xix</sup> Another interesting project from Mobile Bristol is Moulinex (2004) by Zoe Irvine. "The piece explored the location's history as a venue for open air cinema creating a 'sonic archeology' of The Matrix and Moulin Rouge, films screened in the square. ... As the viewer moved around the area elements the soundtracks from the two films were gradually mixed and manipulated, in this way the work touched on the isolating/unique, filmic experience associated with the use of walkmans ("your personal soundtrack") and the DJ culture of quoting and mixing ... being immersed in a sound which changed in response to their location and movement history."

<http://www.imaging.dundee.ac.uk/people/zoe/Text/Moulinex.htm>

<sup>xx</sup> For example works by Gordon Pask reflect fascination with systems, data structures and generative output in graphic form, see Jasia Reichardt, *Cybernetics, Art, and Ideas* (Greenwich, Conn.: New York Graphic Society, 1971) 207 p.

<sup>xxi</sup> Many artists who are addressed within locative or location based media do not use GPS or other coordinates. In [murmur] mobile phones, a sound archive, local maps and a web interface are combined in a creative way.

<sup>xxii</sup> Early recording units were hefty backpacks or at least a PDA+phone combo. These challenges are relative to the problems encountered by Virtual Reality experiments in the late 1980s and early 1990s: the hardware was unpleasant to say the least to wear, and the ideal of immersion took a lot of faith, or as it was the case with many researchers who wrote about end of Cartesian divide, they had never worn a VR helmet themselves.

<sup>xxiii</sup> It is interesting that both de Certeau and Pierre Mayol discuss this process of making public space your own, its appropriation, as that of "privatization". "Neighborhood can be considered as the progressive privatization of public space" (Mayol 1998: 11). Pierre Mayol uses Henry Lefebvre's proposition of neighborhood as an entrance and exit between qualified spaces (walking area near one's home) to quantified spaces (involving different time-place constraints of travel) (Mayol 1998: 10). Mayol defines cultural practice as follows: "it is the more or less coherent and fluid assemblage of elements that are concrete and everyday (a gourmet menu) or ideological (religious, political), at once coming from a tradition (that of family or social group) and reactualized from day to day across behaviors translating fragments of this cultural device into social visibility, in the same way that the utterance translates fragments of discourse in speech. A "practice" is what is decisive for the identity of a dweller or a group insofar as this identity allows him or her to take up a position in the network of social relations inscribed in the environment." (Mayol 1998: 9). *From point of view of location based art practices, this notion of how cultural practices, even if in fragments, lead into social visibility can be used to address its connectedness with every day lives in a location.*