Peripato Telematikos

Abstract. This paper describes my current project "Peripato Telematikos", an experiment in social cartography and public authoring, drawing influences from performance studies and art. As this is intended for an audience interested in technology and its use in education, I will focus on these aspects, but will nevertheless give an overview to put these aspects in context. The project relies on public participation to 'map' a locale or neighbourhood. The mapping process requires participants to undertake guided walks and use a mobile phone to send images of interest during the walk. The images are sent to a custom hardware and software system, composing a gsm/gprs modem, sms/mms gateway software, php scripts and a mysql database. All entries are stored in the database and await approval. Once approved the images are immediately available for viewing and manipulation through an applet at the website http://www.peripato.net. The applet implements an experimental interface developed by the Human-Computer Interaction Lab (HCIL) at the University of Maryland that allows 'zooming' of all content. This allows the content to be manipulated by visitors to the site, allowing for an emergent montage of media elements. Zooming was unique to interfaces until OS X, where it has been adopted in a minimal way for the Dock and Dashboard and Expose GUI elements. Aside from the technical aspects, the project's relevance to education as discovered during the course of this research will also be discussed.

Keywords: social cartography, public authoring, performance art, media art, zooming interface.

1 Introduction

This paper describes my current project "Peripato Telematikos", an experiment in social cartography and public authoring, drawing influences from performance studies and art.

[T]here is a cresting wave, and it awaits skilled surfers (Cosgrove, 2006)

This is a quote from a 2006 special issues of Cartographic Perspectives (the journal of the North American Cartographic Information Society) on art and maps. The special issue gives a good summary of the current intersections of art and maps and notes its prevalence but also signifies the importance of the work being conducted in these intersecting fields. It also asks why this might be happening.

2 Concept

Map making has a long and complex political, social and cultural history. Maps have long been used by controlling powers as a means of consolidating their power. The mapmaker controls the territory that is being mapped, and attempts to represent with a "totalising eye" as de Certeau (1984) asserts in "The Practice of Everyday Life". But maps can no longer satisfy the needs of representation in an increasingly complex and ever-changing world. Representations of the world rapidly become obsolete and inaccurate. But what is needed? Can a map incorporate time? How do we avoid creating representations that encompass all that is problematic with traditional map making?

What is emerging is that maps are not being used to represent reality but to construct reality through the interventions of people.

As Deleuze (1988) says, a map is "an abstract machine. It is a machine that is almost blind and mute, even though it makes others see and speak" (34). The map is a machine oriented towards experimentation with the real. It is "abstract" because the map in no way represents what is actual and determined, but instead offers a field of potential space, an array of potential uses of the actual. It is a "machine" because of its ability to bring heterogenous elements of a system into connection with one another.

The map is software in this sense. (Kanarinka, 2006) p25

There are many projects where the intent is to imbue maps with personal, subjective information or content to convey more than the official and trumpeted objective representation of place. Many of these representations solicit public participation for their creation and hence are authored by the public. The research has revealed the activity by media

artists, many drawing influences from the Situationist Internationale, an influential collective that explored and critiqued the urban environment of Paris, creating experiential maps from their experiences or 'derives' and coining such terms as 'psychogeography'. Assisted by the emergence of wireless technologies and cheaper and more accessible gps capabilities, and open source online tools (eg. google maps) many projects seek to create these representations assisted by the technologies available.

> Cartography is the study and practice of making maps ... Maps are inherently problematic. First of all, they assume an "objective" reality: a version of the world that can be inscribed, framed, and trusted. .... The second fatal flaw of maps is that they have been used, throughout political history, as weapons in political power struggles. When the British army occupied Ireland, one of its first military initiatives was a re-mapping of the entire country. Why bother, when maps of Ireland already existed and were serving their navigational purpose? Because Britain wanted to be the author of the Irish map. Britain knew it: the hand that draws the map rules the world. America knew it too: the vast and total overwriting of aboriginal maps by invading "pioneers" was a clear and legible testament to their imperial victory. Maps are drawn by the dominant power, and that is why they're such powerful documents. It's also why they're so dangerous, and it's why the recent movement by artists to reclaim cartography is of such enormous importance.
>
> …
>
> When we look at an institutional map of a place, we are seeing an abstraction of the facts and qualities that the state thinks we need to know. However, what are often abstracted out of these "official" photos and maps of places are those everyday elements that make these places what they are, and that make them recognizable and navigable. The layout of these places might be passed along, but the feel is left out. The emotional effect that places have on human beings is lost in the official document. (TPW Gallery, 2007)

The project relies on public participation to 'map' a locale or neighbourhood.

The use of participants to create a work is by no means a new idea and has many precedents in art. From the early surrealist experiments in collaborative authoring to more recent phenomena such as the plethora of what are called web 2.0 applications, which mostly rely on public contributions. But what is to be gained from allowing the public to author these maps? As the places being explored and documented are the spaces that the participants frequent, it is their perception and concerns of their locale that is important. Those that frequent these places have a greater intimacy and prior knowledge than any outsider could ever have. Furthermore, as Kanarinka states:

> The collective can be thought of as an explicit act of cultural resistance in that the group functions as a refusal of an increasingly engineered individual subjectivity. (Kanarinka, 2006, p28)

The mapping process requires participants to undertake guided walks and use a mobile phone to send images of interest during the walk. A few images per participant can be sufficient but this is dependant upon the number of people involved and the area covered. For example, in the work "One Block Radius", a single city block in New York is 'mapped'.

> A project of Brooklyn artists Christina Ray and Dave Mandl (known collaboratively as Glowlab), is an extensive psychogeographic survey of the block where New York's New Museum of Contemporary Art will build a new facility in late 2004. Engaging a variety of tools and media such as blogs, video documentation, maps, field recordings & interviews, Glowlab creates a multi-layered portrait of the block as it has never been seen before [and will never be seen again]. (Glowlab, 2004)

The picture taking is not meant to encumber the walk so it can be kept to a minimum. The mode of walking is informed by walking practices from art. This is not enforced (and could not be in a work that is open to anonymous participation) but is drawn upon where the walks are conducted in a more controlled situation, such as personal walks, workshops or other focus groups.

The images all contribute to the overall montage or map. See figure 1.

Figure 1

They are collected using a mobile phone with a camera and MMS capabilities. Usability has become an issue, as the experience of walking should not be frequently interrupted by the need to fiddle with the mobile phone to take and send the image. This need has been addressed by:

1. Making use of mobile phones' MMS capabilities. Other dedicated applications that would serve a similar function are problematic. The multitude of mobile phone platforms represents a significant barrier to creating a single mobile phone application to facilitate the sending of images to a server. In order to maximise potential participation, a standard facility (i.e. MMS) is used. Furthermore, despite the rapid and widespread uptake of mobile phones, the public's lack of familiarity with some of the less used functions represents another potential barrier to participation.

2. Despite this, a suitable application is in development and will allow for the uploading of an image from the phone to a server. There are a number of reasons as to why this is being pursued. Firstly, in many instances, the project will be run in more controlled environments, where customised mobile phones will be provided for the participants. These focus groups will be trained in the use of the application, circumventing the problems mentioned previously. Secondly, in terms of usability, the application will allow the uploading of images, with less user intervention than is possible using MMS, simplifying the overall process. Thirdly, a custom application can be considerably cheaper to use than standard MMS. MMS costs are fixed regardless of the content being sent and the size of an MMS is restricted in most cases to 100KB. In Australia, the cost is 50 cents for the sending of an MMS. The custom application will circumvent this system and make use of the phone's gprs capabilities to upload an image to a server using the http protocol. The cost is determined by the amount of data transmitted. Given that many phones have the capability to capture images of low resolution and hence small file size, sending images using the custom application can be considerably cheaper.

I have chosen walking as the prime means of exploring place and space. This draws on my research of art practices that somehow incorporate walking as a means of expression.

Why walking? In order to gain some knowledge of our places, there is simply no other mode of locomotion that allows for an intimate experience with our surrounds. Other forms allow us to move from one place to another rapidly, but at the price of no real interaction with the spaces that are crossed, whereas walking, at the least, allows for many more opportunities for engagement and observation. Attempt to walk a route that you commonly traverse with an automobile. It is often a surprising experience seeing these 'familiar' places from a very different perspective.

Walking in art can be traced back to include such luminaries as Baudelaire ("the botanist of the sidewalk") and Benjamin (Arcades Project). More recent examples include Richard Long and Hamish Fulton for whom walking is primary in their art, Sophie Calle, whose "Suite Vientiene" is a well-known work where she stalked a stranger to another city and Marina Abramovich and Ulay (The Lovers), who walked from opposite ends of the Great Wall of China as a parting gesture to mark the end of their relationship and collaborations.
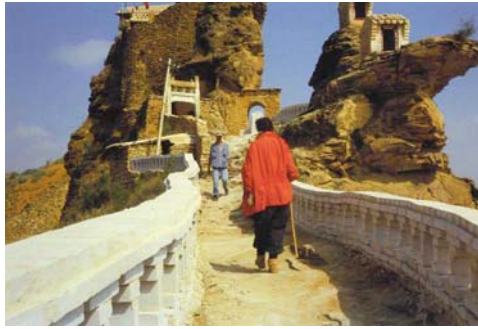
Figure 2: The Lovers (photo: Da Hai Han and He Xinmao)

In more recent times, the prevalence of art incorporating walking in some form can be ascertained by the number of conferences and exhibitions being held worldwide. For example:

1. Walking as knowing as making // a peripatetic investigation of place spring 2005 // university of illinois
2. Conflux is the annual New York festival for contemporary psychogeography.
3. Walk Ways brings together a selection of works by a diverse group of artists who explore the theme of walking as an action and/or as a metaphor.

3 Technology

The images taken by participants are sent immediately via MMS or the custom application, to a custom hardware and software system, comprising a gsm/gprs modem, sms/mms gateway software, php scripts and a mysql database.

MMS is an acronym for Multimedia Messaging System. Similar to the more commonly used SMS or text message, but with the added capability of incorporating images, audio and video content in a single message. As an integrated service it offers some advantages over the custom application. The project requires that a participant 'mark' the message so it can be identified by the server. This requires that the message uses the postcode of the place being 'mapped' as its subject line. This is more of an issue when several projects are being run concurrently and the system needs a means by which it can differentiate between entries from different 'mappings'.

All entries are stored in a mySQL database and await approval. Approval of images before they are released into public realm is a major consideration during these times of heightened anxiety about the use of mobile phones for capturing unsolicited images.

> Photographers' blogs are tangled with long threads of discussions about what may or may not be allowed, and are bulging with stories of police, security and members of the public stopping them from taking photographs. (Giles, 2007, p23)

The images need to be vetted for appropriateness and suitability. A secure web page is provided for administrators of the project that displays the image as it is received in real time, and provides a simple mechanism for approving the image. Once approved, the main viewing page loads the image from the database. The main viewing page will load the image as it polls the database at regular intervals to check for newly approved images.

Once approved the images are immediately available for viewing and manipulation through an applet at the website http://www.peripato.net

The applet allows for the participants to return to the site and view their submitted images, and manipulate this content in relation to other content, closing the loop by giving control of look of the 'map' or montage to the participants. The content can also be manipulated in further ways:

1. Text annotations can be added to existing content, with the option of leaving this text visible or available on demand.
2. Links can be created, associating content with other content. The links can be made visible if a visitor wishes to see the associations created.

3. The spatial layout can be saved. This is a privilege given to project administrators, only.

In a nutshell, this scheme allows the content to be manipulated by visitors to the site, allowing for an emergent montage of media elements.

The applet implements an experimental interface developed by the Human-Computer Interaction Lab (HCIL) at the University of Maryland that allows spatial manipulation and 'zooming' of all content. (Human-Computer Interaction Lab)

Zooming is an interface paradigm I encountered during my Masters candidature. In terms of navigability, it has the greatest efficiency in comparison to other interface schemes. Essentially, this means that the interface allows for the navigation of a large data set in a more efficient manner than any other option. It is also referred to as a 2-½ dimension interface as the zooming gives the illusion of a 3rd dimension, but a restricted one at that.

Zooming was unique to interfaces until OS X, where it has been adopted in a minimal way for the Dock and Dashboard and Expose GUI elements. It is with the implementation of Expose that this feature is most apparent. Moving the mouse to the designated corner of the OS X desktop will cause all open windows to reduce in size and appear as a cluster of smaller windows on the desktop. This is very similar to the way the zooming interface works, but with a greater degree of control over the level of zooming.

Thus far I have discussed the most visible aspects of the technology enabling the project. Other components that play a crucial role include:

the gsm/gprs modem.

The modem performs the function of a mobile phone, enabling communications over the mobile network and the handling of MMS messages in MM1 mode (essentially duplicating the functionality of a mobile phone). Other modes are available, such as MM7, which delivers the message directly over the internet, rather than over the air, but this requires a contract with a telecommunications carrier. I have had no success whatsoever exploring this option, and my one major gripe throughout this whole project has been with the providers, who are impossible to contact, take forever to answer a question and seem to have very little time for smaller projects. The computer that the modem is attached to initiates the sending of messages and other telephony functions, and is also responsible for the reception of incoming messages.

sms/mms gateway software.

The modem alone has very limited functionality. It comes with simple software to send and receive an SMS, and make a voice call. In order to implement the sending and receiving of MMS messages, dedicated software is required as handling MMS messages is not as straight forward as an SMS message.

The software being used is the commercial product "nowSMS". It provides all the functionality that is needed to implement the sending and receiving of MMS messages and more. Open source gateways are also available but the effort and time required to establish a system must be weighed against the cost of a commercial off-the-shelf product.

php scripts.

The gateway provides some simple mechanisms for the handling of messages. Ultimately, the specific application will need to implement its own handling. The php scripts are executed whenever a new message arrives at the gateway. Its prime purpose is to record the new message's details into the database, and if necessary alert the project administrator who needs to approve the image sent. This can be done in many ways, from emailing the administrator to sending the MMS to the administrator for remote approval.

a mysql database.

The database contains many interrelated tables to facilitate the smooth implementation of the project.

4 Education

The project has received a great deal of interest from the education sector. Primarily from primary and secondary teachers, cluster educators and other Special interest groups, such as VITTA (Victorian IT Teachers Association) and VATE (The Victorian Association for the Teaching of English). This interest has manifested for a number of reasons.

Educators are battling with the inclusion of ICT into their classrooms and curricula. They are being given many incentives and professional development opportunities but many lack a basic familiarity with the technologies that they are trying to make use of in their teaching. Even where this is not an obstacle, there is still the issue of how to use the technology in interesting and more importantly, engaging ways. As a result, the teaching community has some serious issues to resolve.

> Today's students have not just changed incrementally from those of the past, nor simply changed their slang, clothes, body adornments, or styles, as has happened between generations previously. A really big discontinuity has taken place. One might even call it a "singularity" – an event which changes things so fundamentally that there is absolutely no going back. This so-called "singularity" is the arrival and rapid dissemination of digital technology in the last decades of the 20th century.

> …What should we call these "new" students of today? … But the most useful designation I have found for them is Digital Natives. Our students today are all "native speakers" of the digital language of computers, video games and the Internet. (Prensky, 2001)

This project has appealed to the educators because it provides a complete package for their use. It involves the use of a technology that is very familiar to their students, i.e. the mobile phone and the internet. The uptake of the mobile phone has been most prevalent amongst teens, where the device is very much an accessory to their daily lives. Sites such as myspace and youtube are testament to this fact. The project is also designed in such a way to enable self-administration, allowing the project stake holders to have total control over their iteration of the project, a very important consideration in all public participation projects where a small existing community of participants is engaged.

Another important consideration is that the project gives the students the opportunity to get away from the computer screen, where most ICT related instruction actually takes place and to be physically moving about! A common complaint of the "digital natives" generation.

5 References

Certeau, M. D. (1984) *the practice of everyday life,* berkeley, university of california press.
Cosgrove, D. (2006) Art and Mapping: an introduction. *cartographic perspectives,* 53**,** 1.
Giles, J. A. (2007) Panic and Paranoia: the law and photography in australia. *photofile,* 80**,** 80.
Glowlab (2004) one block radius: a psychogeographic documentary.
Human-computer interaction lab, u. o. m. piccolo.
Kanarinka (2006) art-machines, body-ovens and map-recipes: entries for a psychgeographic dictionary. *cartographic perspectives,* 53**,** 24-40.
Prensky, M. (2001) Digital Natives, Digital Immigrants . *on the horizon,* 9.
TPW Gallery. (2007) Subversive Cartography: challenging the accuracy of the official map. *dubious views: questioning institutional representations in tourism and cartography. http://www.virtualmuseum.ca/Exhibitions/Photos/html/en/sm-essay.html*