

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Lenara Verle

.chance)

(CHALLENGING NETWORKED COMMUNITIES)



MOBILE DEVICES

> phones, cameras, laptops, tablets...

LOCATION-AWARE NETWORKS

> GPS, Cellular, Wi-Fi...

TOPOGRAPHY OF SPACES

> physical & virtual

Being In Two Places At Once

> ALVA NOË - www.npr.org

Japanese Teenagers Teach Us Something About Being In Two Places At Once

by ALVA NOË



Owenstache/via Flickr

When teacher calls attendance, you answer “here!” In this way, you let her know you’re there. But notice, you don’t *tell* her that you’re there. You show it, or signal it. You might have raised your hand in response to her query. By raising your hand, or saying “here!,” you make your presence felt.

Being In Two Places At Once

Tokyo is a huge city. Kids commute great distances on the way to and from school, sometimes traveling as much as an hour in each direction. In the context of such a spatially distributed social reality, there is a need to find new modalities of presence. And this is what cell phone technology, in the hands of the teenagers, is able to do.

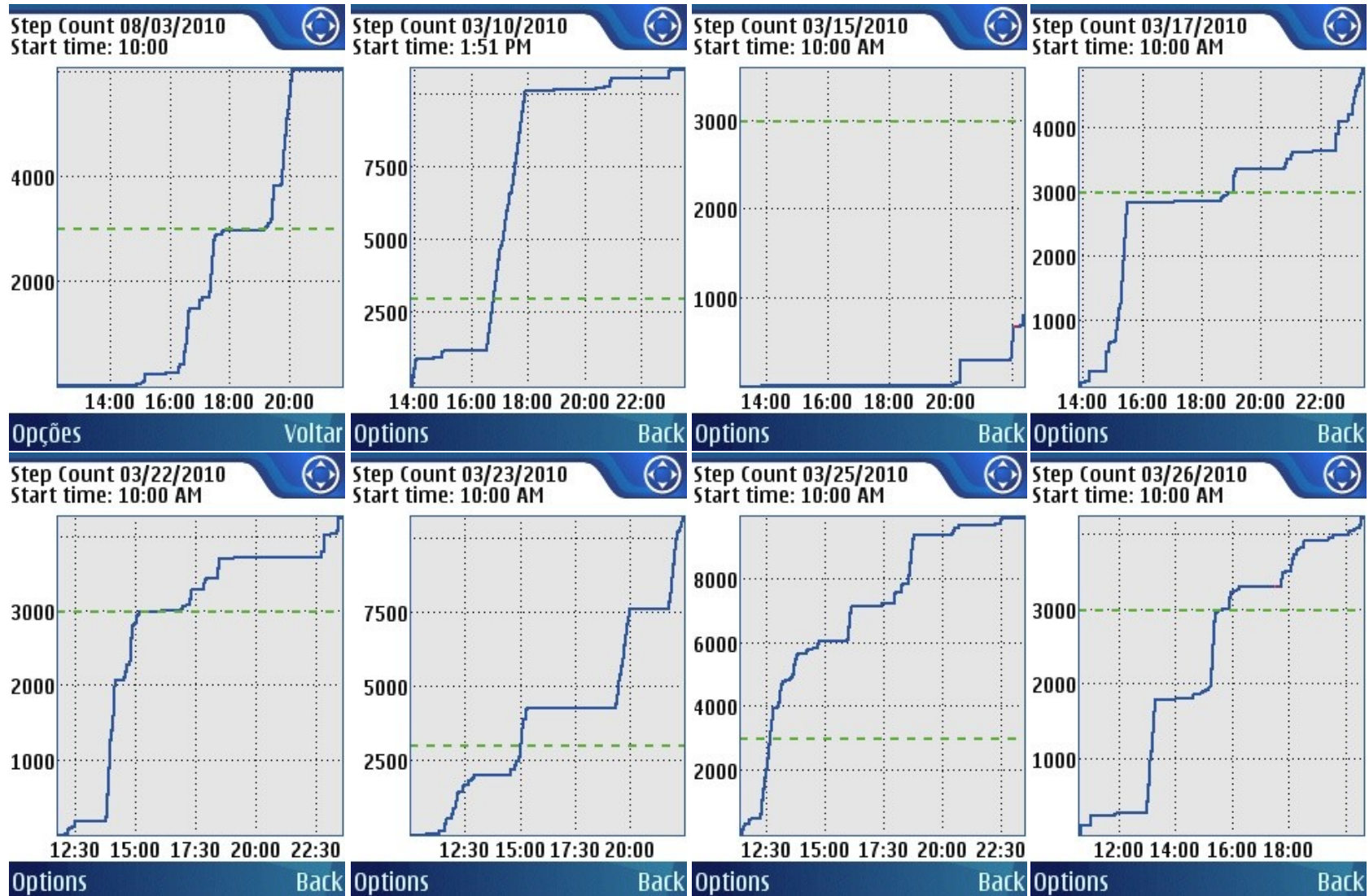
It makes what is far, near, not by changing physical distances, but by, so to speak, demoting the importance of physical relationships in place of a whole new set of relationships. The children remain far from each other in the physical space in which the commute takes place; but they achieve a closeness, even an intimacy, in a different, virtual space.

www.npr.org/blogs/13.7/2010/10/21/130723964/near-but-oh-so-far

MOBILITY <<>> IMMOBILITY

> does technology facilitate or discourage mobility?

MOBILITY <<>> IMMOBILITY




MOBILITY <<>> IMMOBILITY



HELLO THERE I'M HERE

> Foursquare, Facebook Places....


HELLO THERE I'M HERE





Lenara in Aix-en-Provence, Provence-Alpes-Côte | [Apps](#) | [Help](#) | [Settings](#) | [Log Out](#)

[Me](#) | [History](#) | [Badges](#) | [Stats](#) | [Friends](#)

Search places, people and tips

 **La Rotonde**





[+ ADD TO MY TO-DO LIST](#)

[Do you manage this venue? Claim here](#)

YOUR CHECK-INS	TOTAL PEOPLE	TOTAL CHECK-INS
1	45	74

Mayor *Last 60 Days*

 **Pierre E.**
2 checkins



Categories: French
Tags: *untagged*

[edit](#)

HELLO THERE I'M HERE



Places

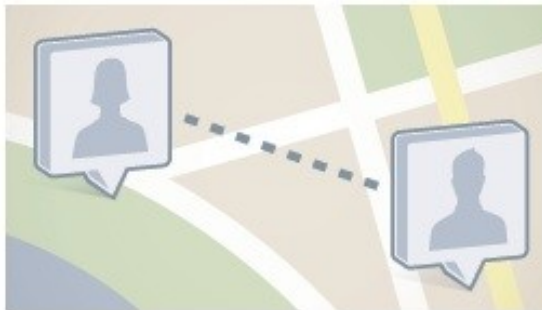
Who. What. When. And now **Where.**

Share Where You Are



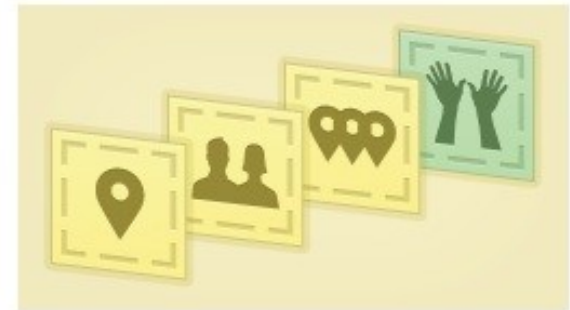
"Best. Concert. Ever."

Connect With Friends Nearby



"I'm just down the street!"

New: Find Local Deals



"I'm getting \$20 off new jeans."

GEOTAGGED PHOTOS



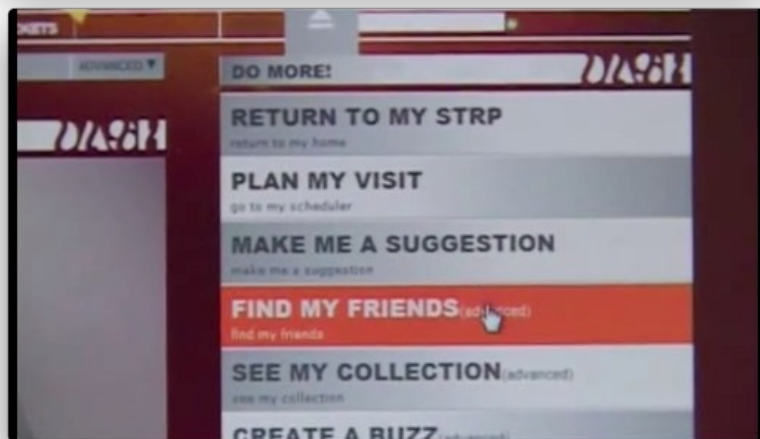
ADDING A VIRTUAL LAYER

> STRP Festival's Esphere



ADDING A VIRTUAL LAYER

> STRP Festival's Esphere



ART COLLABORATION & MOBILE DEVICES

> mapping the invisible

EMOTION MAP

GREENWICH EMOTION MAP - CHRISTIAN NOLD, 2005-6

[VIEW MAP](#) | [DOWNLOAD MAP](#) | [BUY PRINTED MAP](#) | [PROJECT BACKGROUND](#)

GREENWICH EMOTION MAP by Christian Nold October 2005 - March 2006

Key

Participants

How was the Greenwich Emotion Map created?

What is the relationship between emotions and physical space?

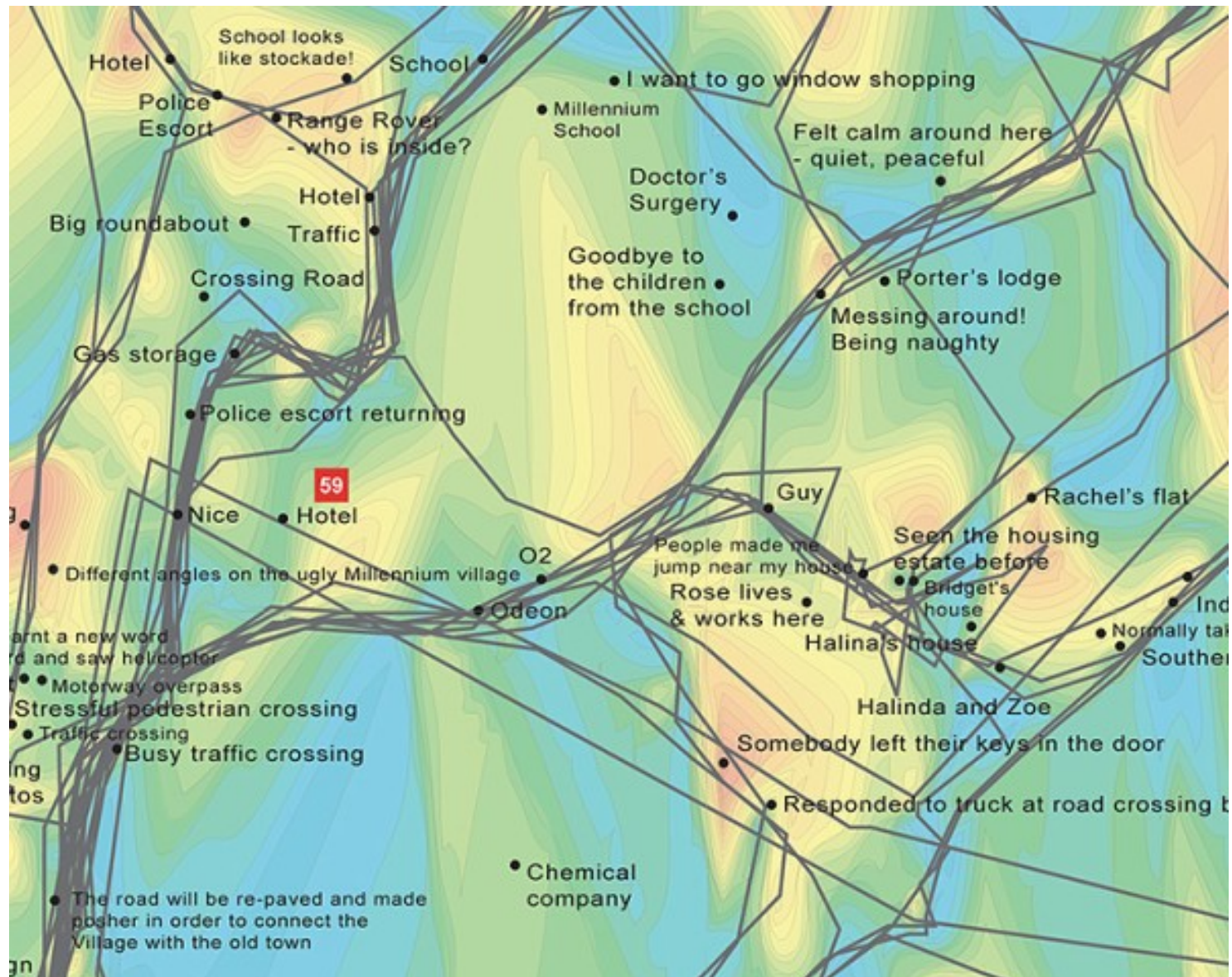
How can you use this map?

www.emotionmap.net

SAN FRAN | GREENWICH | STOCKPORT | NEWHAM | WESTMINSTER | SILVERTOWN | BRENTFORD | PARIS | RIO ||| CHRISTIAN NOLD |||

www.emotionmap.net

EMOTION MAP



EMOTION MAP

GREENWICH EMOTION MAP - CHRISTIAN NOLD, 2005-6

[VIEW MAP](#) | [DOWNLOAD MAP](#) | [BUY PRINTED MAP](#) | [PROJECT BACKGROUND](#)

PROJECT BACKGROUND

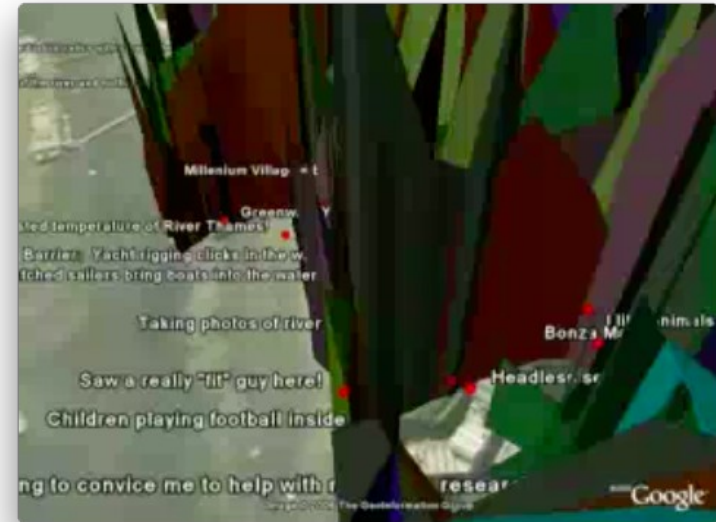
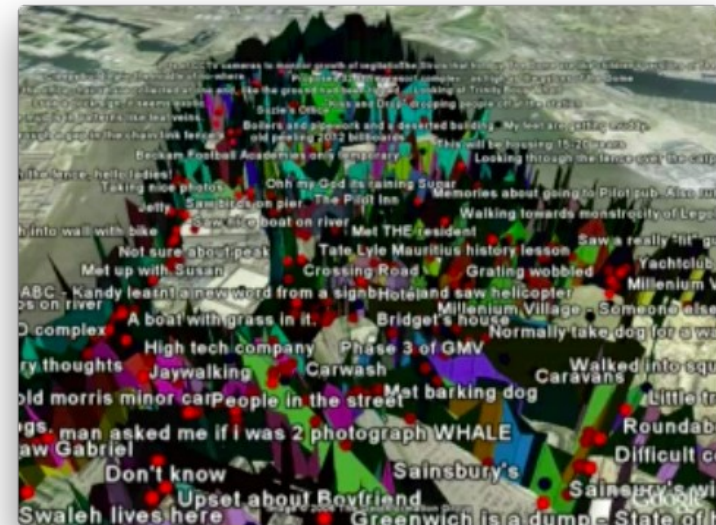
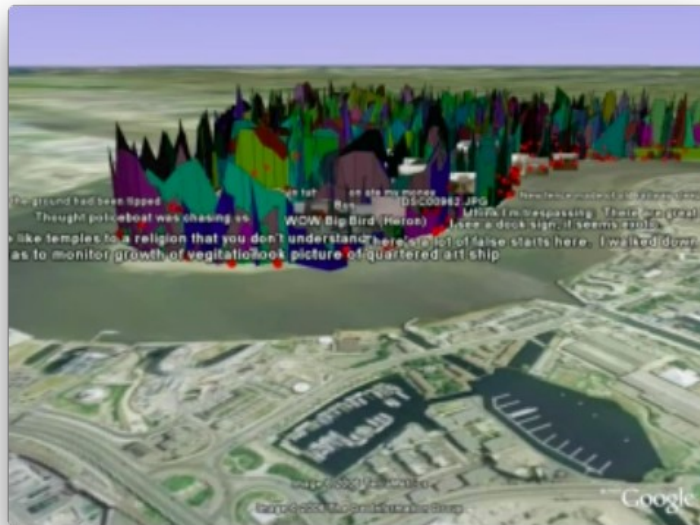
Greenwich Emotion Map by Christian Nold - Oct 2005 - March 06

6 month artist commission hosted by Independent Photography as part of 'Peninsula'.

The project involved weekly workshops with 80 local Greenwich Peninsula residents with the aim of re-exploring the area afresh with the help of a Bio Mapping device. The device invented by the artist measures the wearer's Galvanic Skin Response (GSR), which is an indicator of emotional arousal in conjunction with the wearer's geographical location. The resulting 'Emotion Maps' encourage personal reflection on the complex relationship between oneself, the environment and ones fellow citizens. In a group, people then commented about their experiences and left annotations on the map.

To create the communal Greenwich Emotion Map all the individual walks were aggregated to visualise a shared landscape of emotion. The map contains particular arousal hotspots reflecting many of the local discussions about regeneration of the Peninsula. As part of the commission we printed 1000 Greenwich Emotion Maps which have turned out to be a great success communicating the project locally as well as nationally and internationally. Locally every participant received a map and a number are available at the tourism office but the map was also distributed through arts venues such as the ICA and Tate Modern bookshops.

EMOTION MAP



EMOTION MAP

WESTMINSTER SENSORY DEPRIVATION MAP - CHRISTIAN NOLD, 2008

[VIEW MAP](#) | [DOWNLOAD MAP](#) | [BUY PRINTED MAP](#) | [PROJECT BACKGROUND](#)



TACTICAL SOUND GARDEN



Tactical Sound Garden [TSG] Toolkit

Given the ubiquity of mobile devices and wireless networks, and their proliferation throughout increasingly diverse and sometimes unexpected urban sites, what opportunities - and dilemmas - emerge for the design of public space in contemporary cities?

The Tactical Sound Garden [TSG] Toolkit is an open source software platform for cultivating public "sound gardens" within contemporary cities. It draws on the culture of urban community gardening to posit a participatory environment where new spatial practices for social interaction within technologically mediated environments can be explored and evaluated. Addressing the impact of mobile audio devices like the iPod, the project examines gradations of privacy and publicity within contemporary public space.

The Toolkit enables anyone living within dense 802.11 wireless (WIFI) "hot zones" to install a "sound garden" for public use. Using a WIFI enabled mobile device (PDA, laptop, mobile phone), participants "plant" sounds within a positional audio environment. These plantings are mapped onto the coordinates of a physical location by a 3D audio engine common to gaming environments - overlaying a publicly constructed soundscape onto a specific urban space. Wearing headphones connected to a WIFI enabled device, participants drift through virtual sound gardens as they move throughout the city.

GARDENS

TSG | Arte.Mov 2007, Belo Horizonte, Brazil. November 15-18, 2007

TSG | SIGGRAPH 2007, San Diego, CA. August 5-9, 2007

www.tacticalsoundgarden.net

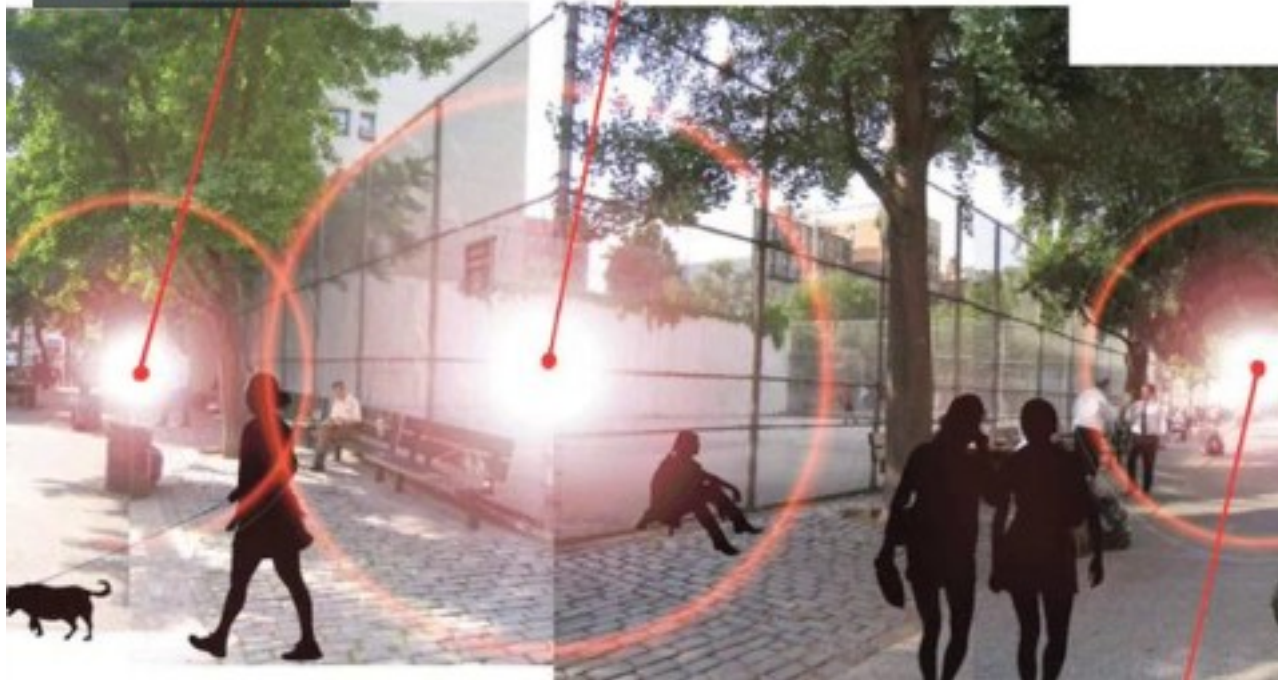
TACTICAL SOUND GARDEN

rhinoceros.mp3 | very loud | once a day | lat: 40.70851135 | lon: -73.99899292

Tactical Sound Garden [TSG]

gBrook.mp3 | soft | once a minute | lat: 40.708513

from mark shepard



TACTICAL SOUND GARDEN



INVISIBLES



geral.etc.br/invisibles

INVISIBLES

Every human being, in his passage through the earth, leaves his mark. Some build palaces, buildings; some write books read by thousands of readers; some leave a lineage, inheritances, or plant trees that will keep on growing for many years after. Other, though, stand out for the invisibility. These are the ones that one can only notice for a light displacement of the air around, or by a shade, that when we turn to look at, has no owner.

This project proposes a visit to these invisible people.

Invisibles reflects about the history and usages of Belo Horizonte municipal park, using its most anonymous visitors as the main focus. The project takes the concepts of localization and augmented reality to offer an exploratory tour of the park, an expedition looking for fictional or real characters closely related to that space.

Visitors receive orientation from the monitors and mobile phones specially prepared with an application that filters the live video feed from the phone camera, overlapping pictures previously taken of park users., taken by the participants of festival workshops. A video tracking algorithm makes the images float on fixed positions over the park background, giving the illusion of a virtual presence. As the visitors walk through the park, a geotagging feature identifies their position and inserts different characters. By centering the character on the screen, users can read his or her name and history.

Invisibles was commissioned by the [Arte.mov](#) festival in November 2007.

The application was developed by the own artist in Mobile Python. The source code and a location independent version is available here.



AUGMENTED REALITY

> superposition of physical and virtual layers

THANK YOU!

> www.lenara.com

> lenara@verle.com

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Lenara Verle



<http://www.chance-project.eu/speakers/lenara-verle/>

MOBILE DEVICES

> phones, cameras, laptops, tablets...

Today we have very small gadgets that we carry with us most of the time. And they are smart enough to know where we are.

LOCATION-AWARE NETWORKS

> GPS, Cellular, Wi-Fi...

.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

When we say geolocation we immediately think of GPS but wi-fi can often pinpoint a location pretty accurately if we're in an area with many networks, like a big city.

The population of the Earth is becoming more concentrated into urban spaces, which have a high density of networks. (if we move away from the centers we can still get some cellular networks, and further yet just GPS.)

TOPOGRAPHY OF SPACES

> physical & virtual

.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

While we go on with our lives, we move around the physical space. But we also move in a virtual space, which could be imagined like a layer above the physical one, with its own unique topography.

Being In Two Places At Once

> ALVA NOE - www.npr.org

Japanese Teenagers Teach Us Something
About Being In Two Places At Once

by ALVA NOE



Owenstache/via Flickr

When teacher calls attendance, you answer "here!" In this way, you let her know you're there. But notice, you don't *tell* her that you're there. You show it, or signal it. You might have raised your hand in response to her query. By raising your hand, or saying "here!," you make your presence felt.

.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Alva Noe has a very interesting article about this topic at the National Public Radio website. He is a neurologist and a researcher in the field of consciousness studies.

According to him, Japanese teenagers exchange a high number of sms messages but they have no real content, their purpose is just to affirm the kids presence in the shared virtual layer.

He also has a theory about why we talk so loud on cellphones. He suggests that happens because the audio quality is very good and our perception moves to the shared virtual layer, thus becoming disconnected from the physical layer and oblivious to the proper sound levels there.

Being In Two Places At Once

Tokyo is a huge city. Kids commute great distances on the way to and from school, sometimes traveling as much as an hour in each direction. In the context of such a spatially distributed social reality, there is a need to find new modalities of presence. And this is what cell phone technology, in the hands of the teenagers, is able to do.

It makes what is far, near, not by changing physical distances, but by, so to speak, demoting the importance of physical relationships in place of a whole new set of relationships. The children remain far from each other in the physical space in which the commute takes place; but they achieve a closeness, even an intimacy, in a different, virtual space.

www.npr.org/blogs/13.7/2010/10/21/130723964/near-but-oh-so-far

.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

ALVA NOE - University of Berkeley, California

<http://socrates.berkeley.edu/~noe/>

Japanese Teenagers Teach Us Something About
Being In Two Places At Once

<http://www.npr.org/blogs/13.7/2010/10/21/130723964/near-but-oh-so-far>

MOBILITY <<>> IMMOBILITY

> does technology facilitate or discourage mobility?

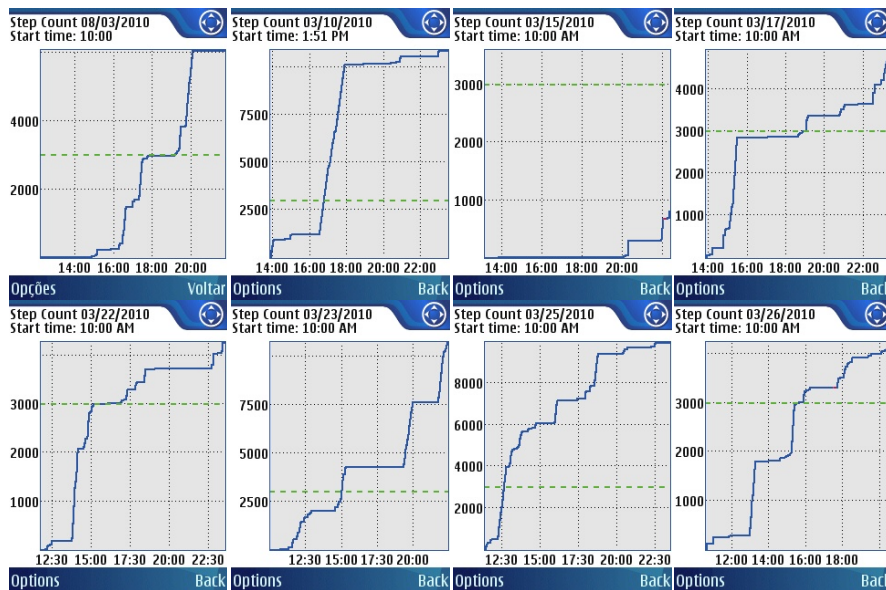
.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Last month I was giving a talk at the ARTe.MOV mobile arts festival in Brazil and the theme for our roundtable was "Mobilities and Imobilities". It was about the idea that technology could make us more mobile but also sometimes would change our habits towards more still and sedentary. I shared with them a story about how I went to my doctor for a check-up about a year ago and I was a bit ashamed to admit I have been quite sedentary in the past few years, so when he asked if I did any exercise, I said that I walked. But when he asked how much I walked I had no idea because this "walking" was not the one hour everyday type of brisk walking, but just walking from place to place as a means of transportation. So I decided to install a pedometer software on my phone which measured all my walking during the whole day.

MOBILITY <<>> IMMOBILITY



.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Bottom line: I found out I walk around seven thousands steps everyday, which is not quite the recommended walking for an "active lifestyle" (10k steps/day), but far more than the typical "sedentary" person (less than 3k/day).

Besides the relief of finding out I was NOT a hopeless couch potato, the best part of my pedometer experience turned out to be the little graphs the software generated during the day.

MOBILITY <<>> IMMOBILITY



.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

For me, the graphs served as a diary of my day. You can see that my days were not typical at all, each one tended to have a quite different graph. In this day for example, I could divide my activities between bursts of physical mobility and immobility. (Basically the more horizontal the line, the stiller I was, and the more vertical, the faster I was walking)

I could be going to the bakery, then leaving in a hurry to take the subway. And the irony is that because I was not using my own legs the subway ride shows as immobility. And the subjective feeling for me is immobility as well. Of course I could be online answering emails. So my path in the physical and the virtual world could be very divergent. And then I can come out of the subway, arrive at a cafe, and broadcast my location to my social network.

HELLO THERE I'M HERE

> Foursquare, Facebook Places....

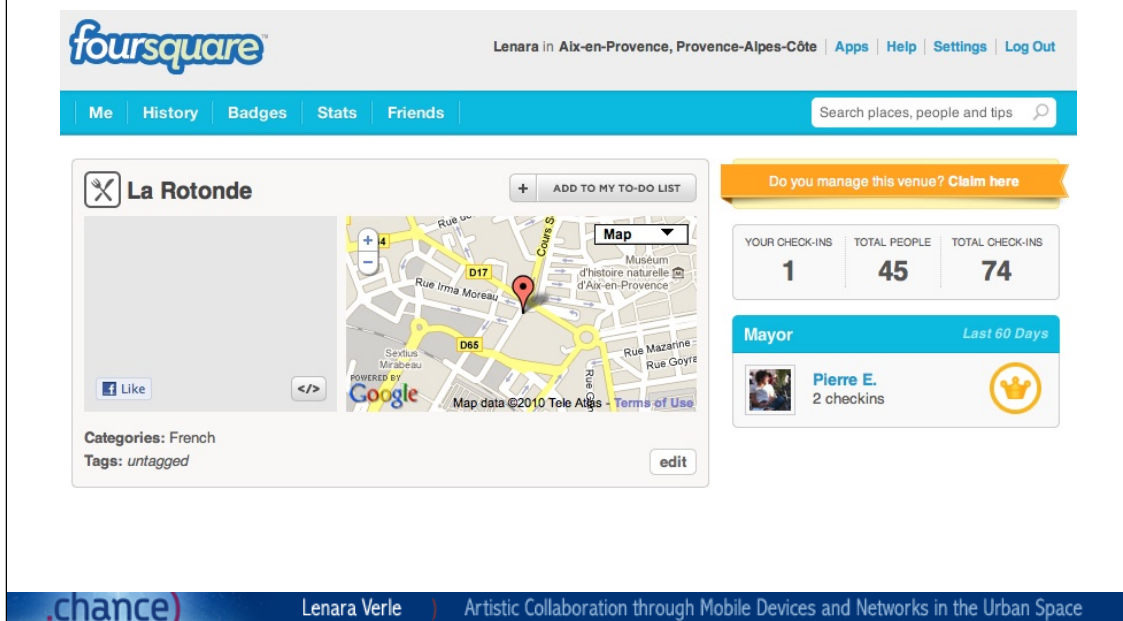
.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

A short while ago the (current) big giant in social networking, Facebook, added a functionality to its service called "Places". It was launched after another independent service called Foursquare has reached more than 5 million users.

HELLO THERE I'M HERE



Foursquare

The service is based on friends sharing their location. There is a sense of competition to “check-in” at more places than others, and also rewards in the form of points, badges, and actual promotions from locations, like discounts or free items when you check-in there a number of times.

HELLO THERE I'M HERE



Places

Who. What. When. And now **Where.**

Share Where You Are



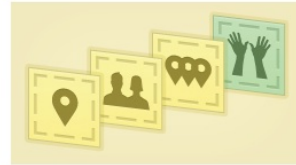
"Best. Concert. Ever."

Connect With Friends Nearby



"I'm just down the street!"

New: Find Local Deals



"I'm getting \$20 off new jeans."

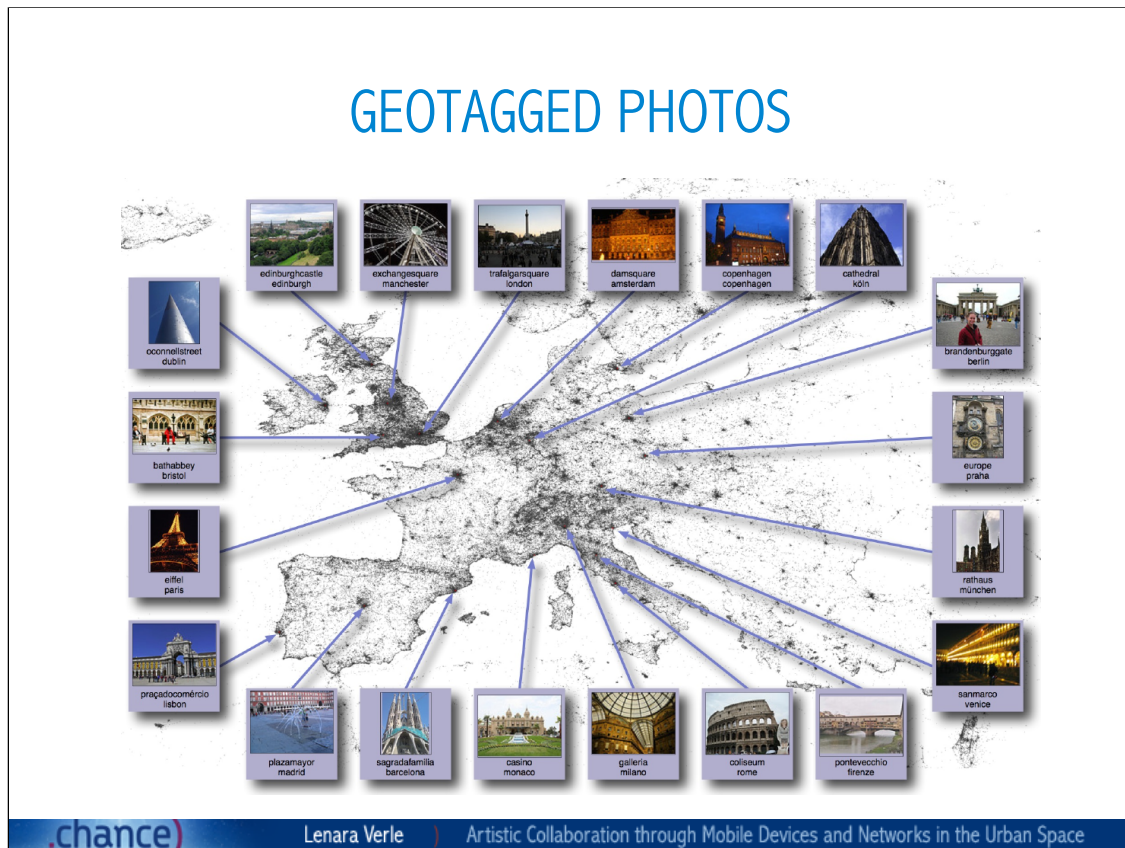
.chance)

Lenara Verle

) Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Facebook Places

A very similar idea, integrated into the Facebook platform.



Today a huge percentage of photos are being taken with location-aware devices, and most photo oriented websites like Flickr and Picasa can read and use this embedded geotagging.

It is even possible to find out who your friends are based on the probabilities of taking a picture at the same location at the same time. If two people take pictures only 80Km away from each other on 5 different occasions, there's more than 60% chance that they know each other.

<http://www.newscientist.com/article/dn19855-online-photo-coincidences-betray-your-friends.html>)

Picture: most photographed places in Europe.
by David J. Crandall

ADDING A VIRTUAL LAYER

> STRP Festival's Esphere

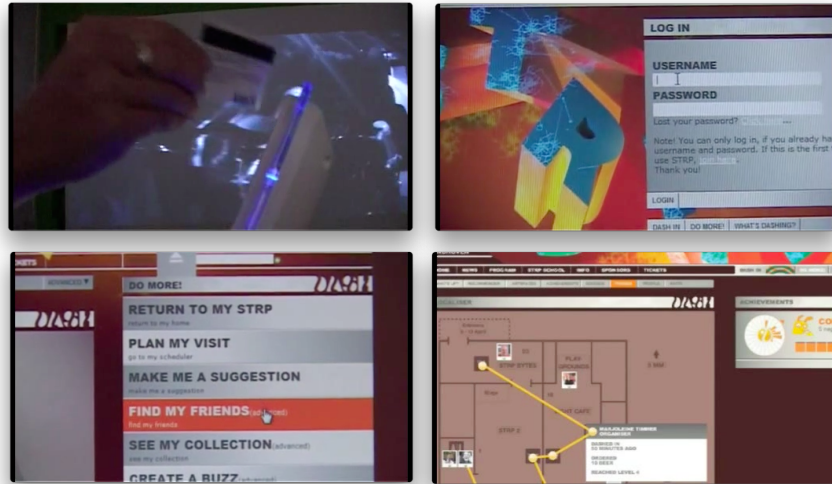


Festivals and conference can also integrate systems for social networking. With an RFID chip embedded in every participant's badge and readers at key points spread around the different participating venue, the system can help get public votes for an art exhibit, "rate" different activities, and of course help you connect with your new and old friends during the event. A system like this just was used in Eindhoven, Netherlands for the STRP Festival.

<http://www.e-sphere.nl/>

ADDING A VIRTUAL LAYER

> STRP Festival's Esphere



.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Video with documentation:

<http://vimeo.com/15875338>

ART COLLABORATION & MOBILE DEVICES

> mapping the invisible

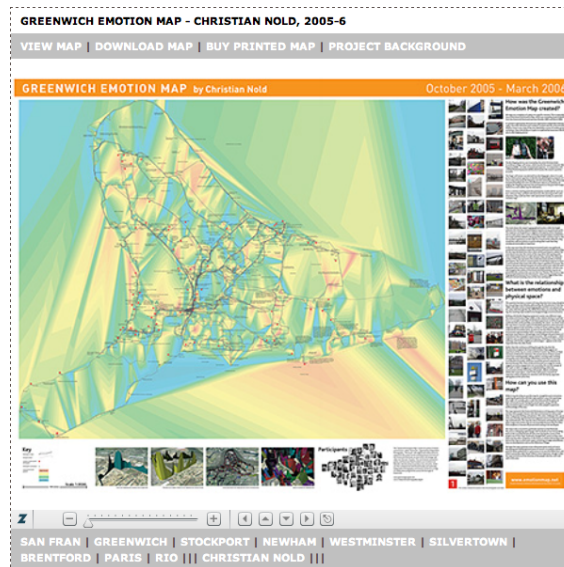
.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

I've brought some examples of collaborative mobile art projects based on a common theme: mapping the invisible

EMOTION MAP



www.emotionmap.net

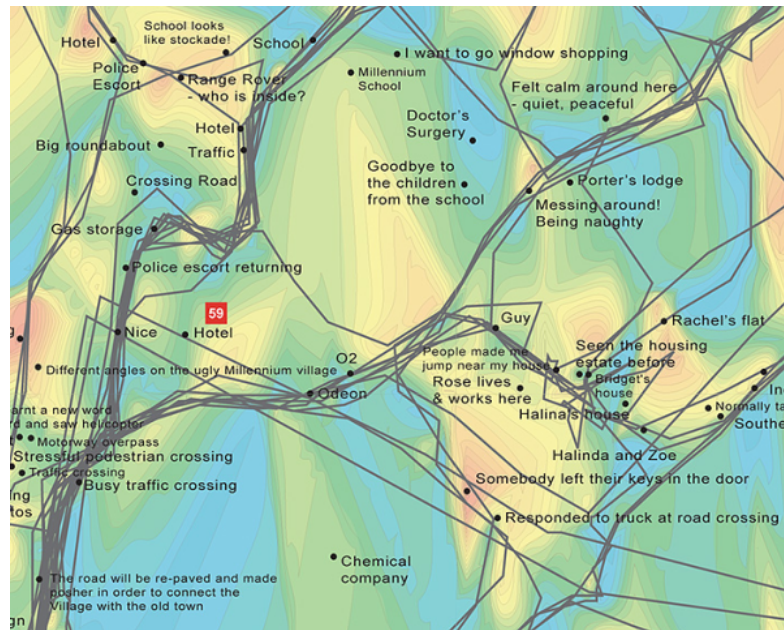
.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Emotion Maps - www.emotionmap.net

EMOTION MAP



.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

The emotion map of Greenwich, London was created by asking residents to walk around the neighborhood wearing a GPS and a galvanic skin response sensor that measured biological signals of emotional arousal. Later the individual maps were joined to create a group map with annotations.

EMOTION MAP

GREENWICH EMOTION MAP - CHRISTIAN NOLD, 2005-6

[VIEW MAP](#) | [DOWNLOAD MAP](#) | [BUY PRINTED MAP](#) | [PROJECT BACKGROUND](#)

PROJECT BACKGROUND

Greenwich Emotion Map by Christian Nold - Oct 2005 - March 06

6 month artist commission hosted by Independent Photography as part of 'Peninsula'.

The project involved weekly workshops with 80 local Greenwich Peninsula residents with the aim of re-exploring the area afresh with the help of a Bio Mapping device. The device invented by the artist measures the wearer's Galvanic Skin Response (GSR), which is an indicator of emotional arousal in conjunction with the wearer's geographical location. The resulting 'Emotion Maps' encourage personal reflection on the complex relationship between oneself, the environment and ones fellow citizens. In a group, people then commented about their experiences and left annotations on the map.

To create the communal Greenwich Emotion Map all the individual walks were aggregated to visualise a shared landscape of emotion. The map contains particular arousal hotspots reflecting many of the local discussions about regeneration of the Peninsula. As part of the commission we printed 1000 Greenwich Emotion Maps which have turned out to be a great success communicating the project locally as well as nationally and internationally. Locally every participant received a map and a number are available at the tourism office but the map was also distributed through arts venues such as the ICA and Tate Modern bookshops.

.chance)

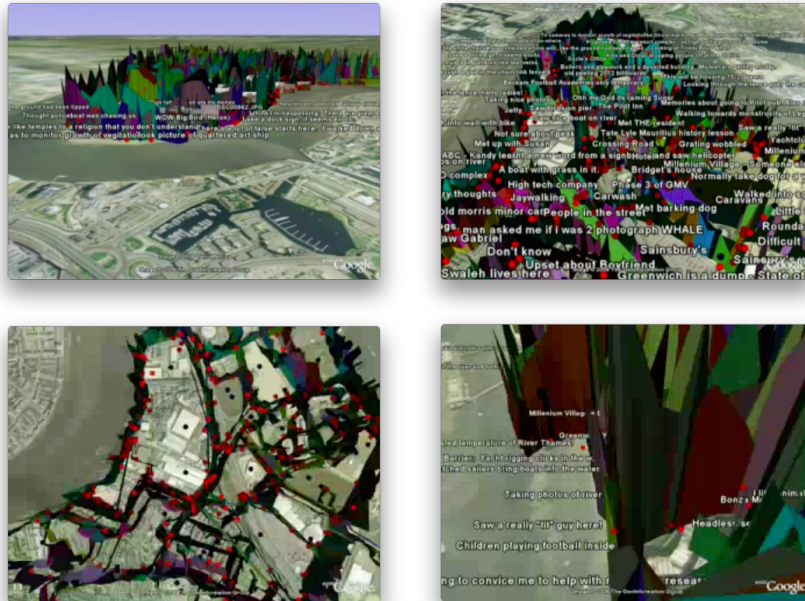
Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Project background

<http://emotionmap.net/background.htm>

EMOTION MAP



.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Google Earth animation showing the process of building the map.

<http://www.archive.org/details/GreenwichEmotionMap>

EMOTION MAP

WESTMINSTER SENSORY DEPRIVATION MAP - CHRISTIAN NOLD, 2008

[VIEW MAP](#) | [DOWNLOAD MAP](#) | [BUY PRINTED MAP](#) | [PROJECT BACKGROUND](#)



.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

A further development of the project was the Newham Sensory Deprivation Map. This map was based on explorations of the surroundings without the main senses of sight and sound, relying only on smell, touch and taste.

<http://www.newham.emotionmap.net/background.htm>

TACTICAL SOUND GARDEN



www.tacticalsoundgarden.net

.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Tactical Sound Garden creates collaborative “sound gardens” in city areas covered by wi-fi networks. The auditory space is mapped in 3D and superposed to the urban space.

TACTICAL SOUND GARDEN



.chance)

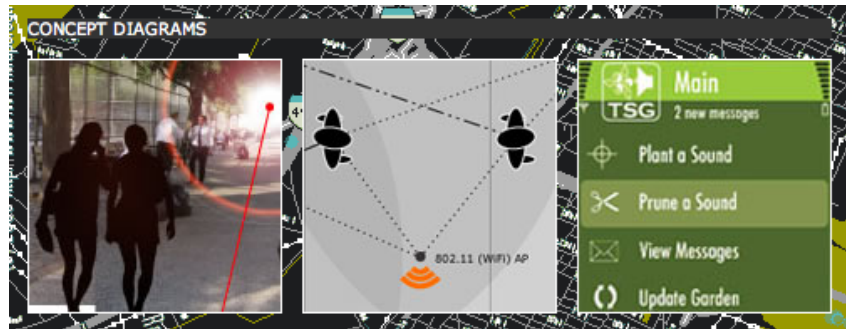
Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Video with project documentation:

<http://vimeo.com/15875884>

TACTICAL SOUND GARDEN



<http://www.tacticalsoundgarden.net/>

INVISIBLES



geral.etc.br/invisibles

.chance)

Lenara Verle

Artistic Collaboration through Mobile Devices and Networks in the Urban Space

Invisibles is an augmented reality project developed as an open source software for mobile platforms.

Characters connected to a specific place tell their tales through audio and “ghost” images, which are superimposed to the video captured by the mobile device.

<http://geral.etc.br/invisibles/>

INVISIBLES

Every human being, in his passage through the earth, leaves his mark. Some build palaces, buildings; some write books read by thousands of readers; some leave a lineage, inheritances, or plant trees that will keep on growing for many years after. Other, though, stand out for the invisibility. These are the ones that one can only notice for a light displacement of the air around, or by a shade, that when we turn to look at, has no owner.

This project proposes a visit to these invisible people.

Invisibles reflects about the history and usages of Belo Horizonte municipal park, using its most anonymous visitors as the main focus. The project takes the concepts of localization and augmented reality to offer an exploratory tour of the park, an expedition looking for fictional or real characters closely related to that space.

Visitors receive orientation from the monitors and mobile phones specially prepared with an application that filters the live video feed from the phone camera, overlapping pictures previously taken of park users., taken by the participants of festival workshops. A video tracking algorithm makes the images float on fixed positions over the park background, giving the illusion of a virtual presence. As the visitors walk through the park, a geotagging feature identifies their position and inserts different characters. By centering the character on the screen, users can read his or her name and history.

Invisibles was commissioned by the [Arte.mov](#) festival in November 2007.

The application was developed by the own artist in Mobile Python. The source code and a location independent version is available [here](#).



Video with documentation:

<http://geral.etc.br/invisibles/video-en.html>

AUGMENTED REALITY

> superposition of physical and virtual layers

One of the goals of augmented reality is to join the virtual and the physical layers in the same sensorial experience. These two layers are not always connected but they have points of intersection, either occurring naturally or being deliberately build, based on different needs and ideas.

THANK YOU!

> www.lenara.com

> lenara@verle.com