

## **Syncopated space – wireless media shaping human movement and social interaction**

Teri Rueb

As a digital artist, Teri Rueb explores the relationship between sound, space and human movement in location-aware installations and large-scale responsive spaces. She lectures widely on media and interactive art in various international venues and also as an Associate Professor of Visual Art at the University of Maryland, Baltimore County. In her essay "Syncopated space", she enquires into the ability of wireless technologies to expand the context of human communications.

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With the advancement and proliferation of tracking technology and wireless media, the study of human movement has emerged as a popular area of enquiry for contemporary artists and designers. This recent trend follows a long history of insights and innovations on the subject from a wide range of disciplines including philosophy, dance, music, art and architecture to computer science, human geography, psychology, neuroscience, biology, epidemiology, marketing and military research.

Mobile communications technologies in particular, including cellular, Wi-Fi, GPS and Bluetooth, have made us increasingly aware of our movement and the context-sensitive nature of our communications. As our movement becomes mediated by such technologies it is also made visible and apparent to us in new and unprecedented ways. Like all technologies and systems of representation, wireless media have shifted our perceptions and reshaped our sense of cultural identity.

As wireless technologies permeate our daily lives more and more, merging data space and real space, important questions are raised about privacy, representation, and the design and use of public space. It is now more important than ever to maintain a watchful eye on these developments as they continue to shape our daily experience in evermore ubiquitous and powerful ways. Policy must respond in the interest of protecting human rights and freedoms and the socially responsible design of public space.

The ability of wireless technologies to engage the body and expand the context of our communications lies at the heart of our ready embrace of them as an integral part of our daily lives. The integration of data space and

real space through mobile media and location-based systems brings back into circulation a whole host of communication rituals and interaction styles that engage the body, movement and context-sensitive exchanges. With the increasing ubiquity of wireless and mobile media, space is imagined as a Hertzian soup – a space of flows that defies the clear and fast boundaries of visual space and concrete form, instead emphasizing our connectedness in and through the social body. The potential of this image to reconfigure our sense of the social has the power to engage us in renewed dialogue and participation in promoting models of urban design and communication that support human movement and interaction across cultural boundaries and divisions.

As an artist, I seek to engage people in experiences that open new ways of thinking about and reflecting on the role of technology in our lives. Since 1996 I have created works that explore the relationship between sound, space and human movement to investigate issues of architecture and urbanism, landscape and the body, sonic and acoustic space. These works are primarily created with wireless and wearable technologies including GPS, laptops, pocket PCs, and cellular phones and modems.

### **Exploratory Movements**

A wonderful thing happens when it snows – a lot. The spaces of the city are temporarily transformed and the humble pedestrian reigns supreme once again. The steady, silent accumulation of snow, weightless and ephemeral, stills the echoing canyons of endless traffic and tumult. A hush covers the land that waits now, like a blank slate, to be written upon by so many footfalls and improvised architectures. The cluttered visual space of the city, now unified by an expanse of white evenness, invites us to cross lines, improvise, detour and play in places forbidden or ignored in our everyday lives. We traipse across manicured lawns, walk straight down the middle of streets and invent lanes on the snow-covered freeways. For the brief period before the snowmelt we have an opportunity to rewrite the physical and social landscape of the city according to a different logic of movement and interaction.

Hertzian space, like snow, alters our conventional perceptions of space, movement and interaction. A fluid space of overlapping fields and frequencies, Hertzian space is characterized by connectedness as opposed to the discrete boundaries and territories suggested by physical architecture and visually based constructions of space.

In my work, Hertzian space becomes both a medium and a metaphor for alternative constructions of space, movement and interaction. Like snow, my work seeks to offer a temporary transformation of the physical and social landscape. Through it, I aim to engage people in an alternate reality where exploratory movements lead to surprise and accidental discovery. Leaving the gallery behind, the stationary viewer becomes a mobile listener whose movement through space literally brings the work into existence.

*Trace* (1996–1999) was the first work I made using wireless media. The project was an interactive sound installation along a network of trails in the Canadian Rockies. Visitors would hike with specially equipped knapsacks that contained a laptop and GPS. As they hiked, sound recordings would play back automatically in response to their movement through specific locations along the trail. Sounds were made as memorials and contributed to this sonic cemetery where, instead of visible monuments, visitors would weave their way through a series of sounds that punctuated the landscape, itself a memorial record of natural history.

With *Trace* I was interested in exploring ways in which the computer, typically associated with the rhetoric of disembodiment, could be used to foreground a corporeal experience of memory. The design brought participants out into the landscape where the physical labour, pleasure and risk involved in experiencing the work heightened the emotive power of the sounds. Physical movement became a life-affirming act that supported the contemplation of mortality.

After *Trace*, I became especially intrigued by the possibility of using wireless media to explore spatialized narrative and the interaction of movement, sound and space. I pursued this interest in two projects, *Limn: The Driving Diaries* and *Open City* (1999), both of which reflected on movement and interaction in urban settings, especially as mediated by the car and cell phone.

These works led to a larger work called *The Choreography of Everyday Movement* (2001). Here I collaborated with dancers in reflecting on the ways in which political and technological control systems shape the built environment and influence our everyday movement through it. Dancers were provided with GPS units that they used to record their everyday travels. These journeys were recorded and presented as layered transparent drawings that revealed the pattern of each dancer's movement over time.

The archived drawings were presented alongside a live performance in which dancers moved through the city by car with a laptop computer, GPS and cellular modem connection. Their movements were tracked and translated in real time as a dynamic drawing that appeared in a java applet inside an Internet browser window. With this work I became interested in using wireless media to track and visualize in new ways the culturally inscribed nature of our movement.

The act of observation and documentation in *The Choreography of Everyday Movement* had the interesting result of illustrating the concept of reflexivity. It became clear that the mere presence of the tracking system and Internet spectators had a profound influence on the traveller's movements. The politically charged nature of this relationship between observer and observed became the central issue in my next work, *Invisible Cities*, a work-in-progress begun in 2001. Here, instead of representing the movement of travellers simply as an abstract line, I am now interacting directly with a diverse population of Baltimore residents whose travels will be presented as interactive audio recordings of our conversations while walking and driving. The intent is to reveal the different ways in which diverse populations write the city through their daily movement.

This work has required a long, slow development process, partly because of the time it takes to establish connections with new communities and partly because of the sensitivity of the issues involved, which include issues of race, class, gender and the politics of urban planning and land use in an economically divided city. These issues make it a particularly important project, however, as it engages the challenges that occur when data space merges with real space in location-based information delivery systems. Questions of privacy, representation and access are paramount and urgent, especially as corporate interests are moving quickly to augment the spaces of our daily lives with media overlays delivered via wireless technologies. This is the "land rush" moment in location-based content delivery, analogous to the Internet in the mid to late 1990s. The socially responsible design and use of public space is a critical issue in this process.

Finally, my most recent work, *Drift*, was shown in Cuxhaven, Germany, in April as part of the exhibition *Ohne Schnur*, curated by Katja Kwastek at the Cuxhavener Kunstverein. This work seeks to create a space of flows that allows for aimless wandering, drifting and being lost. An interactive sound installation set on the tidal flats of the Watten Sea, the project seeks to offer relief from the goal-oriented and highly linear nature of our everyday

movement, especially as it is increasingly mediated and represented by precision location sensing technologies including GPS. The work, delivered via GPS and pocket PC, draws people into a tangle of sounds that move inland and out to sea with the extreme tidal currents that extend over 11 kilometres from low tide to high tide. The sounds include fragments of literary passages and poetry on the theme of wandering, being lost and drifting. The sound content, organized as objects or regions of varying sizes, moves freely along simulated currents, as untethered as the participants who explore it and the wireless technology through which it is delivered. Text elements are translated into different languages as they appear in different cultural contexts, underscoring the drift of meaning inherent in translation. The project is built on custom software created by UMBC computer science and engineering students and will also be presented in Helsinki at ISEA in summer 2004.

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