

## Mapping New Media to Physical Urban Space: Strategies and Challenges for Everyday Creativity

Lalya Gaye, BSc, MSc, PhD student  
Future Applications Lab, Viktoria Institute  
Hörselgången 4, 417 56 Göteborg, Sweden  
lalya@viktoria.se, +46-(0)703800134  
www.viktoria.se/~lalya, www.viktoria.se/fal

When new technologies emerge and infiltrate society, they enable new forms of aesthetic practices for artists and everyday people. Pervasive and locative technologies situate computing into the physical and social world. What kind of new forms of expression does the intersection of these technologies open up for? What challenges have to be dealt with and what strategies can be taken in order to design a mapping of new media to physical urban space that supports emergent forms of aesthetic practices?

In the scale of a city, pervasive and locative technologies can open up for new ways of engaging with everyday urban environments by turning existing urban features and infrastructures into physical resources for interaction: the very physicality of the everyday world around us can be exploited as an interface and be filled with new social meaning and aesthetic values. People should thus be able to express themselves and create in new ways, by interacting with their everyday settings and social contexts on the spot, not only through the interface of a PDA screen but even in a more direct and embodied way, via their own body and senses. How will the opportunities opened up by pervasive and locative technologies be reflected in the emerging aesthetic practices that they enable? How can we support this emergence?

I have been working within projects that try to answer these questions: In Sonic City [1], a wearable enables its user to create live electronic music by walking through and interacting with urban environments; in Context Photography [2] a still camera captures the invisible context of a scene (e.g. noise) and translates it visually into the picture, as you are taking it; in Tejp [3], audio tags fixed on walls whisper sounds to by-passers leaning towards them. In each project, immediate surroundings and user actions become resources for the user to be creative with on the spot. The technology in itself serves as entry points to these resources. This happens inevitably through the filter of how the system is designed and of how interaction spaces are mapped. Mapping is therefore of central importance: the way it is designed affects how the users experience the media by influencing their engagement with physical space, their sense of control, and other crucial aspects of interaction. Within the field of interactive music, supporting expression requires a mapping between control parameters and sound output that balances

transparency with complexity and effort [4]. In the case of pervasive and locative media, how should one connect the media to the physical space in order to support everyday creativity?

In Sonic City, criteria for the mapping were: to reflect scales of time and distances covered while walking in the city, into the structure and dynamics of the music; to allow both micro and macro control of the music; and to balance user and environmental control. General urban context and user actions were therefore mapped to musical structure, and ad hoc local interactions set to articulate details of the music. However, transient environmental input ended up being much more dynamic than input from the users: they felt that the city was more in control of the music than they were, and tried to regain this control by actively seeking appropriate urban contexts, or by modulating city input with their body posture. This at first frustrating unbalance involuntarily created a tension leading to new kinds of improvised behaviours and creative use of physical space. Based on such observations and considerations, I suggest that one good mapping strategy for supporting everyday creativity within pervasive and locative arts could be to stimulate user effort by creating a tension not only between the media's format, the urban space's geography and the user's mobility, but also between their dynamics, physical properties, and production of space. A major challenge however is to create this tension without influencing the user's experience too much, getting in the way of what she wants to do or even working against it.

### Biography

I am an engineer and PhD student working in multidisciplinary projects within HCI, ubicomp, mobile media, and music technology. My research explores new territories of personal expression and everyday creativity enabled by ubiquitous computing, and focuses in particular on mobile media for urban space and on computational repurposing of everyday objects. I have a BSc in physics from the University of Geneva, Switzerland, an MScEng in electroacoustics from KTH in Stockholm, Sweden, and I am a PhD candidate in informatics at the University of Göteborg, Sweden. I currently work at the Future Applications Lab, Viktoria Institute. I am also a member of the new media network [fringe] and of the sound-art collective Goutte d'Or.

### Acknowledgments

Sonic City project team also includes: Margot Jacobs (PLAY, Interactive Institute), Ramia Mazé (PLAY), Daniel Skoglund (8Tunnel2); Context Photography: Maria Håkansson (FAL, Viktoria Institute), Sara Ljungblad (FAL) and Panajotis Mihalatos (IT-University of Göteborg); Tejp: Margot Jacobs (PLAY).

### Links

1. [www.viktoria.se/fal/projects/soniccity](http://www.viktoria.se/fal/projects/soniccity)
2. [www.viktoria.se/fal/projects/photo](http://www.viktoria.se/fal/projects/photo)
3. [www.play.tii.se/projects/pps/tejp](http://www.play.tii.se/projects/pps/tejp)
4. [hct.ece.ubc.ca/nime/2004/NIME02/hunt.pdf](http://hct.ece.ubc.ca/nime/2004/NIME02/hunt.pdf)