

## ***MindTouch* - embodied ephemeral transference: mobile participatory performance research**

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### **Abstract**

If you could share and exchange your embodied dream experience, imagery, emotions and sensations with your friends and loved ones, how would you do it? If you could not only share and exchange, but remix and collage them, what would they look like or feel like? How would this work?

The aim of my PhD art-research is, at a meta-conceptual level, to uncover new understandings of the sensations of 'liveness' (Auslander, 1999) and 'presence', which may emerge from the use of mobile technologies and wearable devices within performance contexts. To explore these concepts, I chose to create a practical project to investigate them through and within several participatory performances, including live visual explorations meant to simulate dream and embodied VJing (video jockeying). The project *MindTouch*, discussed here, is a mobile performance project that uses biofeedback sensors and mobile media phones in live, staged, streaming, performance video events, to simulate dream embodiment and telepathic exchange. The aim of this paper is to discuss the project and research conducted at the SMARTlab Digital Media Institute at the University of East London, under the direction of Professor Lizbeth Goodman, in terms of technical and aesthetic developments from 2008 to present, as well as the final phase of staging the performance events, beginning July 2009.

### **Introduction**

*MindTouch* explores ideas of non-verbal transference, telepathic collaboration, and participant as performer, using biofeedback and mobile phone technology to explore

aspects of 'liveness' within mobile/locative performance environments. The *MindTouch* project explores how the mobile video can become a new way to communicate non-verbally and sensually, in real time, person-to-person and person-to-remote environments or physical locations, using a collaborative method of mobile 'VJing'. This VJing uses body data in a dialogue with other mobile users, to create a participatory visual conversation. The goal is also to expand and explore more embodied and meaningful exchanges between remote groups of people.

The *MindTouch* project initially set out to explore the 'body as interface', extending to also consider visual communication between people who cannot speak, or who choose not to speak. Thus, the project explores new ways to simulate, emulate, and facilitate a non-verbal or telepathic connection. It also explores the sense of feltness, presence or liveness, co-presence and collaboration within a mobile performance, through the use of the biofeedback sensors to increase the embodied interaction. Critical to this exploration is to enable the perception and embodied physical sense of liveness and presence within the virtual, non-space of mobile networks. Thus, cultivating the sense of presence as a means to tap into bodily expressions that may surface during various body practices as a primary source of non-verbal, pre-conscious communication is crucial to the project. Physical sensations and perceptions are captured and transformed or transduced into a digital form, then used to 'touch' and 'play' with others, remotely or non-locally through the mobile media devices to represent bodily presences within a live, networked context.

The *MindTouch* project brings together diverging areas of media art research and media art/performance practices, through its unique approach of using biofeedback sensors to interface with mobile phone technologies. With this project, I am exploring corporeal, non-verbal communication and visual interaction when using such devices within participatory performance events. I am also studying the effectiveness of the facilitation or the enabling of participants audiences in sensing liveness and presence within these contexts.

For this study, my intention has been to understand and identify the affect, reception, and experience(s) of liveness, and presence of the audience as performer, to reveal their intrinsic, phenomenological embodied elements within the mobile network and within the context of the events and activities. Thus, only by engaging with audiences as participant performers, can I learn of their first-person impressions and then analyse their experiences to determine if they have felt or experienced the events differently

from traditional performances. Performance in this project adopts a form of public participatory, performance art or like a street theatre or locative media game, whereby the performance is more a structured improvisation. This performance involves available, untrained participants, who are guided by trained performers in semi-structured activities, intended as a way to explore the mobile media format as a means to re-engage the public in performance practice and media art. The practical project processes and development include techniques to encourage people to connect remotely to each other, to re-engage with each other and with the world affectively, using the mobile phone.

### **Project background**

The phases of this practical PhD project are the following:

Phase one has involved collecting the video clips within performative visualisation workshops;

Phase two has involved the development and adaptation of custom software for receiving and visualising the biofeedback data on mobile phones, as well as creating the mobile phone VJing/ video mixing software - more recently this phase of the project has included creating customised, wearable biofeedback sensor systems for the performances, which include embedding them into suitable custom garments for the project;

Phase three is the staging of the performance events. Participants in the first phase, video collection workshops, have been asked to explore and visually represent their internal images, feelings, thoughts and impressions, in non-verbal, visual ways with the mobile video recording phones and to then share these with others. This collection of personal expressions are then to be used in a collective collage/performance premiered July 2009.

In workshops, participants have been invited to explore their own consciousness, emotional, affective senses and dream states, embodiment, and non-verbal communication using mobile video tools to express themselves. During staged events, participants are the performers and collaborators in creating the visual material for the live, interactive, generative performances, streaming directly live from their phones

(using Livecast or quik) or from the media archive, to facilitate a type of 'collective consciousness'. Some participants also use their bodies in a range of expressive, creative, non-verbal/non-textual ways to communicate only through video. These mobile media performance events include guided improvisation techniques, devised to motivate participants to explore creatively.

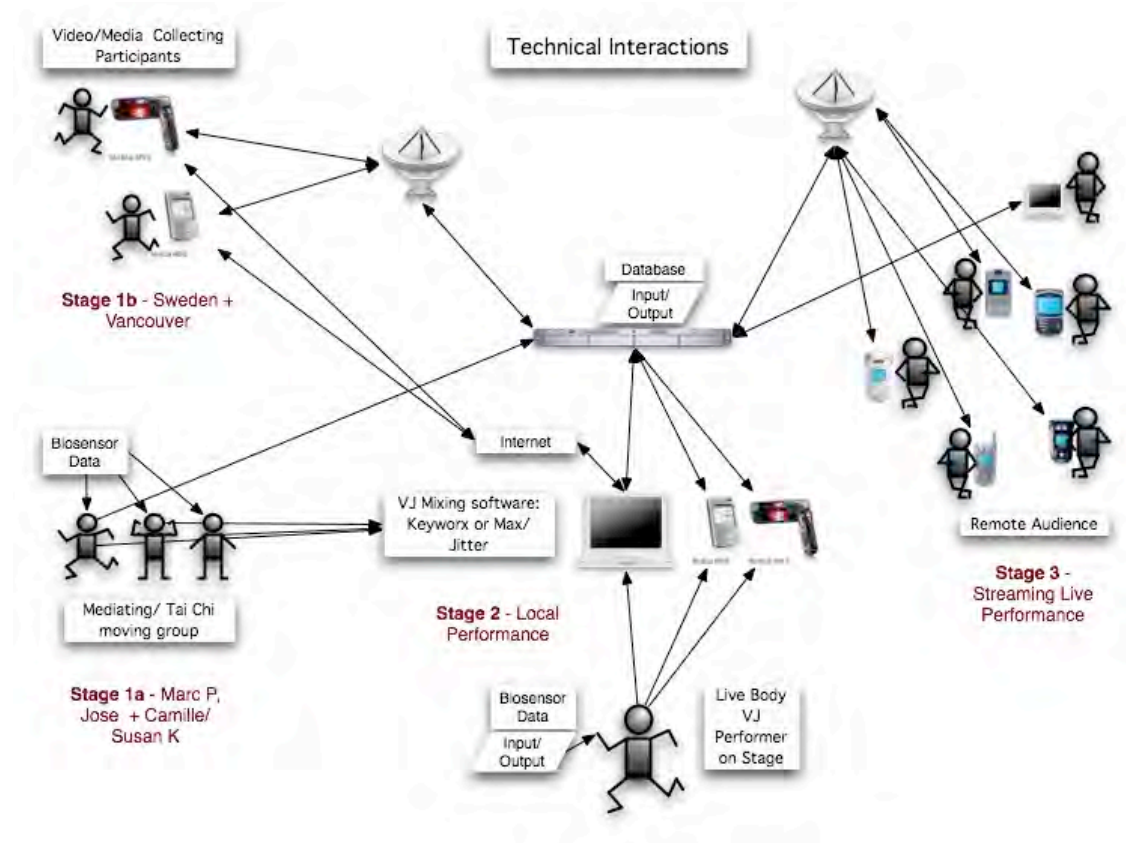


Figure 1 Early technical diagram of the networked performance project. © 2006 C. Baker.

## Video collecting workshops

I initially used the first phase of the workshops as a means toward making the performative video events and collaborative artifact. Other intentions for the workshops were: to help people explore the sensations of their bodies, their internal perceptions and sensations; as a means to facilitate mental visualisations of these internal perceptions and sensations, and; as a means to assist them explore the act of externalising and representing these mental images. The workshops were also an experiment in facilitating non-verbal, gestural and telepathic communication. In addition, I intended participants to create the media for the end performative video collage.

Briefly, each workshop has involved meeting the participants, having them fill out consent forms (to use their video clips), explanation of the research, followed by mind-quieting activities and body-tuning visualisations, followed by four video capturing activities; individually and in pairs. The participants were then shown how to upload the videos online, to share with myself and others in the group, followed by an exit questionnaire and finally by an on-videophone interview.

During the video collection process, participants in the workshops have been asked to explore their: internal images, non-verbal, emotional and affective senses and states, internal physical sensations; impressions of their immediate surroundings and body surfaces; inner thoughts, consciousness, pondering, internal conversations; reflections and impressions in non-verbal, visual ways, using the video capabilities of their phone. Then they have been encouraged to share these sensation explorations with others and myself. These are then used in the generative, collective collage during the VJ performances.

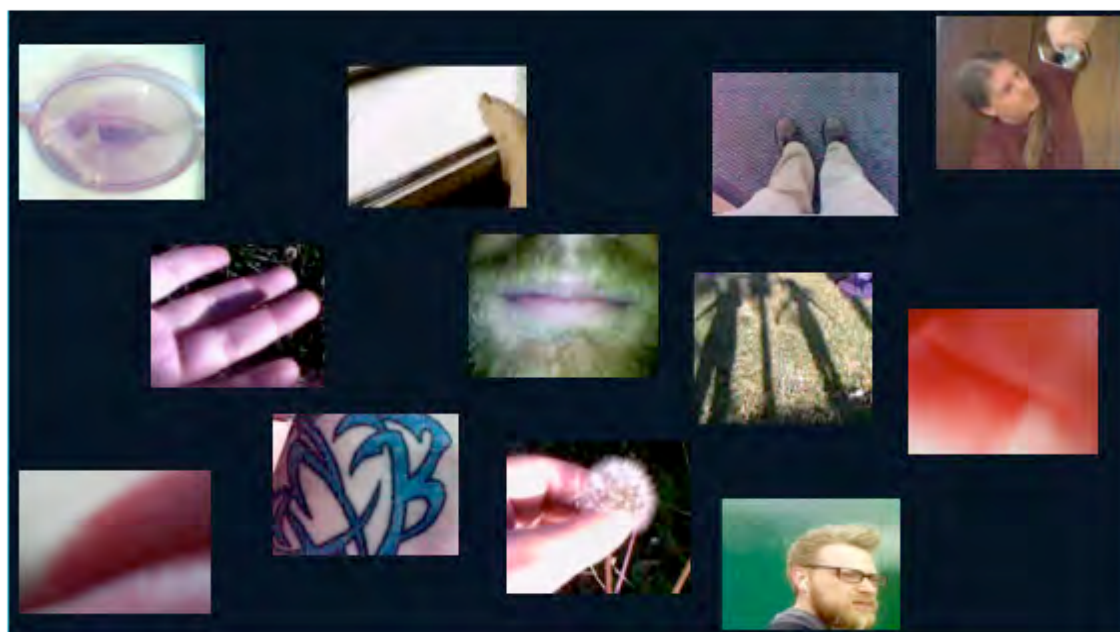


Image 1. Still images by participants in video collection workshops. © 2007 C. Baker

Five of these mobile video collection workshops have been conducted from June 2007 to January 2008, each consisting of four to eight participants<sup>1</sup>, in Vancouver, Canada (twice), Dublin, Ireland, (twice) and London (once). Participants of the workshops were asked to use the video recording feature of the mobile phones, either using their own

<sup>1</sup> The gap in the timeframe for doing the workshops is due to development on new biosensing electronics and wearable devices and garments.

videophones or ones supplied. Each workshop has differed due to the number of participants, the available space and date to conduct them, as well as the environment each has offered - in terms of different visual fodder in the surrounding environment for participants to work with.

In these workshops, some people have reported it was a new experience: creating with a common communication device, but using it in a completely different way, as an end in and unto itself. Thus, while the role of the workshops was meant to be for raw material gathering, in part, they became a means to facilitate people, with little or no artistic, performative or video experience to engage in an inner visual exploration to create abstract external representations, using devices with foreign capabilities, to see what might happen. Thus, it was primarily an exploratory artistic process for them and myself. What has transpired is that participants focused on themselves, each other, their surroundings, and embarked on a journey of intense concentration or inner presence, becoming a critical development for the project.

### **System design and software development**

The system research commenced in November 2006, with acquisition and work with the biofeedback hardware, software and the mobile phones as appropriate for the research. The biofeedback sensors acquired for use in the research were EMG (electromagnetic), GSR (galvanic skin response), respiration and BVP (blood volume or pressure), being the most responsive, easiest to work with in generating usable data, and not uncomfortable to the person wearing them. Electromyogram measures muscle electricity to determine muscle tension of any larger muscle, like arms and legs. Galvanic skin response is work on the fingers and measures the electrical conductance or resistance of the skin that can change when people change their stress levels. Respiration sensors are worn around the ribcage and monitor the inhalation and exhalation depth and frequency based on the abdominal or chest expansion or contraction. Blood volume monitors the relative blood flow in the fingertips, using near infrared light, and from the pulse or blood pressure the heart rate can be determined. Wireless sensors are desirable in order allow for ease of movement.

Initially, I used more expensive medical grade sensors with their heavier and more restrictive cabling on the body. However, I then abandoned these last year in favour

of creating cheaper and more customizable sensors. German electronic musician/creative electronics/java programmer Michael Markert joined me as a collaborator in Spring 2008, assembling and creating biofeedback sensors with a Bluetooth Arduino system, to be embedded within customised clothing, to provide more flexible, unencumbered movement, more aesthetics, as well as ubiquity, unseen on the body, as a hidden 'body area network' sensing system for performance contexts.



Image 2. Custom biofeedback visualisation software. © 2008 C. Baker.

More recently, with my new collaborator Manjit Bedi, we have been creating a mobile live VJ software system using Apple's Quartz Composer programming environment for using the body data to mix video. The software accesses the database of clips and live streamed video, to add visual effects in real time, and then streams mixes back to the phones to allow audience members to share and interact with the generative collage using these visuals as a communication exploration. Fashion designers Tara Mooney and Rachel Lasebikan have been working with me to embed the sensors into lightweight, flexible and fun garments.

## Performance events

The *MindTouch* phase three performance involves creating a mobile networked performance that utilises the database of live, streamed and/or archived video clips, from the mobile phones, then retrieved, remixed and streamed back during a live visuals performance(s). The event(s) seek to create a performative, collaborative, non-linear narrative montage or 'remix', streamed back to anyone's phone and the internet, and archived. The *MindTouch* performance attempts real time video mixing and streaming to phones, although there may be some lag or delay given inherent network and security issues with such a project.

Three different groups enter the 'party-like' environment/performance space, where they meet the three hosts to guide each group of participants through the activities:

Group 1 wears the biofeedback sensor garments and is guided through various movement and sensory perception activities, in order to activate the sensors in various ways, and add effects to the trigger live and archived video from the database, with affected video displayed on screens around the room. Participatory activities involve a) movement activities and b) theatre games;

Group 2 will be guided in capturing video on their mobile phones – like the workshops above only with fewer activities: body visualisations (simplified ways of speaking, of visualising internal sensations) and uploading them to the database;

Group 3 'mixes' the video from the database via software on their phone (downloaded as part of the activity) then they interact with the first bio sensor group, but they choose which live or archived video created by group 2's is mixed and effected by group 1's body data. This activity is also guided so participants can easily use the videophone software and interact quickly and decisively, making a body narrative in their own way.

This is a two-hour event with each group having a chance to experience each activity. The focus is on ways to focus the performance not on the technology in and of itself but as an experience enabler, the event being mainly about exchange, non-verbal visual play, collaboration, participation and interaction, exploring movement



and spontaneity.

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