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position paper for the workshop on:

“Sexual Interactions: why we should talk about sex in HCI?”

There can be no question of allowing sexuality to be lost in existence, as if it were no more than an epiphenomenon.” (Merleau-Ponty, Phenomenology of Perception)

We would like to base our contribution to this panel on the **whisper[s] wearables research project** (<http://whisper.iat.sfu.ca>). The name of this project has been loosely drawn from the following descriptors: **wearable**, **handheld**, **intimate**, **sensory**, **personal**, **expressive**, **responsive**, **system**. Our research has at its very core the communication of physical, non-verbal, sensory and sensual body states through small wireless networked devices. This workshop will allow us to upgrade ‘*expressive*’ in our acronym with ‘*erotic*’ and let us finally consider, with a group of peers, the sexual interaction already existing within our current design, and to brainstorm the further potential for this project and for the field of HCI.

a brief description of the whisper project >>

whisper[s] (2002-2006) is an ambitious ongoing research project into HCI and wearable computing involving artists (dance, sculpture, music), designers (of visuals, objects & textiles), computer scientists and hardware/software engineers. We are developing technology and communications metaphors that enable networked wearable devices to communicate affective states in a continuous manner. Various iterations of **whisper[s]** have shown at several art & technology research and exhibition contexts including

exhale for SIGGRAPH 2005 Emerging Technologies, *between bodies* for [Ciber@rts](#) Festival in Bilbao, Spain (2004), and *whisper* for the UK Future Physical Festival (2003) and the Dutch Electronic Arts Festival (DEAF 2003).

Relating specifically to this Sexual Interaction Workshop's Call for Proposals, we fall into the 'intimate interfaces' category. Our wireless networked devices which poetically and playfully communicate physiological data and sensual states can be called 'a novel technology, interface or system supportive of sexual interactions.'

The various iterations of the ***whisper[s]*** project reveal relationships between people. The installation format of these pieces did not rely on performers, but invited members of the public to don garments embedded with small wireless computers and enter a space defined by light, sound and movement. With the first version of the garments in 2003, people accessed their own breath and heart data through simple gestures and sent this data out into the space as mathematical visualizations, or 'gave' this data to another person, by placing their hands on other bodies to close electrical circuits. The 2004 & 2005 versions of the garments were skirts with vibrators embedded in their lining, responding either to muscle contraction sensors embedded in garter belts or to respiration bands worn around the chest. The whisper installations are unusual because they immerse people in environments where they can choose to externalize and communicate their internal flows and rhythms – something normally done in private or without this degree of conscious awareness.

Thus far in the development of this project we have emphasized its position in the field of affective computing, but in the end, are we not playing a semantic game? If vibrators in one person's skirt respond to the depth of breath captured by a sensor-band embracing another person's chest, calling the interaction sexual, affective or expressive is largely related to context, user-intent or simply to where the vibrators are placed at any given moment.

even more specifically why this workshop is appealing to us right now >>

Sexual interaction has remained a latent but important part of the ***whisper[s]*** project. We are ready to come out of the closet. It is not just as conceptual directors of the project that we make these decisions but in the light of feedback, both encouraging and censorial, from the wider world. The open and encouraging responses come from participants in our participatory design workshops and from audience members, the censorious feedback, ironically, comes from isolated sectors of the profession.

* a participant in a recent PD workshop expressed a genuine interest in knowing when his partner was aroused and hoped our wearables could provide this

* a transsexual individual nearing the final stages of gender reassignment therapy suggested that she would be most interested in communicating her hormonal state to others, and encouraged us to design sensors that do not exist yet so that this might be able to be conveyed and received by our devices.

* we very recently had an amusing but revealing exchange with an editor of a professional engineering journal who informed us that our description of the whisper[s] project was too sexual – “we can’t print this” he said, and rejected a chunk of text and also an image that simply showed a leg under a skirt.

The design and HCI professions run the risk of condoning a burgeoning cultural conservatism and of being extraordinarily out of touch with social computing needs and human sexual behaviour. Addressing explicitly the sexual interaction inherent in physical interfaces or wearables projects at this time can be seen as a political as well as a design imperative.

what we can contribute to the workshop >>

It is clear that sex can inform design, but in order to do so methods, processes and practices need to be developed. Ones that are sensitive to the intimate and physical nature of the interaction. We can contribute to the workshop discussion some of our specific experience in this area, such as:

- * a role for kinesiology, somatic and performance methodologies as foundational to the design of systems and garments
- * successful models for participatory design workshops that fostered safe and highly creative spaces wherein participants used placebo or beta versions of our systems to explore their own sensory and imaginative communication with strangers, friends and partners.

The convergence of designing for sexual interaction with system design of wireless, networked peer to peer platforms could invite a next generation expansion on cyber or virtual sex. Our evolving platform continues to afford configurability of inputs and outputs, recognising that human sexual interaction has enfolded within it emotional, affective, sensory, sensual, sexual, expressive states, not to mention play and humour. Additionally, we can discuss:

- * specifics relating to our *whisper[s]* hardware/software design, use of existing physiological sensors and actuators, and the development of peer to peer bodily networks,
- * ideas relating to new sensors and actuators that are yet to be built.

The **ethical difficulties or challenges** provoked by systems affording sexual interaction also need to be considered.

One question that comes to mind relating to the *whisper* project is that of whether we are giving or receiving sexual data: does the system afford the ability to send and receive? If so which is the initiating act? We have occasionally disagreed amongst ourselves over whether the system should permit only giving or only receiving - the act of offering can be seen as thrusting something upon an unwilling individual, just as the act of receiving can be seen to be taking something from someone against their will. Both can be acts of generosity or violation. As designers how do we address this conundrum?

Another problem relates to the transmission and possible archiving of biological or sexual data – in the era of increasing infringement of civil liberties how can we ensure that our systems, devices or art events do not amount to collaborating with those who secretly accumulate information on us, be they ‘terrorists’ or the FBI?

The whisper project has been discussed through various cultural, aesthetic, software, engineering, and interaction frameworks. We have emphasized the sensual, playful, flirtatious and erotic potential of the project, and would welcome discussing openly the existing sexual scope and potential for further development of the sexual interaction.

But in the end, it is not just about research, it is about people. We would simply like to be able to participate in this workshop to be able to, as you so effectively said, create a community which can ‘brainstorm novel technologies, interactions, and research methods inspired by human sexuality,’ beginning at CHI in Montreal in 2006 and carrying on into the future.

Susan Kozel is a dancer, choreographer and writer creating at the interface between live performance and digital technologies. Working mainly in England, Europe and Canada, she collaborates with digital artists, software engineers, architects and composers to create performances and installations. Using a wide range of sensing and interactive technologies (including motion capture, computer vision, wearable computers and telematics) she preserves a distinctly body-centered approach to the use of technologies. She has a PhD in philosophy from the University of Essex (UK) and integrates philosophical questioning with the process of creation across technologies and bodies. She is the director of Mesh Performance Practices (1998-present) and is currently an Associate Professor at the School of Interactive Arts and Technology (SIAT) at Simon Fraser University in Vancouver, Canada.

Major projects include:

- co-director with Gretchen Schiller of **'trajets'** (2000-present), an interactive installation originally commissioned by the Banff Centre and currently being expanded for a major tour of Spain beginning in 2006.
- performance design and conceptual development for **'whisper[s]'** with Thecla Schiphorst, a collaborative project into wearable computing (2003-present);
- director and choreographer of **'immanence'**, a live performance using 3 real time tracking systems and dancers commissioned for the 2005 HTMLles festival by Studio XX in Montreal,
- director of **'animating alterity'** a performance project around live motion capture and otherness aiming to create a framework for ethics as well as an understanding of human engagement with themselves and others through digital technologies (2005-2007).

She presents widely at international conferences and festivals and contributes to a broad range of international journals. She is currently completing a book for MIT Press called "Closer: performance, technologies, philosophy." More information on projects can be found at the following sites:

<http://www.meshperformance.org>

<http://www.trajets.net>

<http://whisper.surrey.sfu.ca>