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2006

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Jefferies, Janis, "Text & Textiles: New Writings from Spam Tales" (2006). *Textile Society of America Symposium Proceedings*. 335.

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Text & Textiles: New Writings from Spam Tales

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Collaborations

In many essays and texts on the subject of art and science, the questions of collaboration and the points of discontinuity in disciplinary practice habitually surface. For example, C.P. Snow's commentary on the 'two cultures' (as popularized in the Rede lectures in Cambridge in 1959) is frequently cited as a challenge to establishing a meeting place for artists and scientists where stereotypical expectations might be broken down. More weight, however, can be credited to Einstein's acts of expansive thought, and the potential of what is yet to may come into existence through the open-ended processes of investigation, experimentation, and of collaboration and creative chances.

Textile Translation and Transmissions: Electronic Cloth

The project Electronic Cloth refers the ability of fabric to impart meaning through the narrative of as a form of communication. The integration of animated surface displays provides an opportunity for complex and changing layers of meaning as the audience, in an exhibition environment, interacts with the cloth, in this case a woven structure.

The project, "Electronic Cloth," is in its early stages as is part of a wider one entitled, "The Narrative Cloth: Textiles, Translations and Transmissions." It is directed by Professor Barbara Layne. The projects include an interdisciplinary team of artists and scientists investigating the production of expressive, intelligent fabrics through the introduction of electronic devices. Barbara's current research involves the creation of dynamic textiles by integrating Light Emitting Diodes (LEDs) and electronic circuitry into the structure of hand woven fabrics. My own involvement is at level of advising on material production and establishing a conceptual framework for the overall project. Barbara Layne and I have an established record of collaboration, as we have both been concerned with issues of identity and the translation of textiles within and across cultures.

Patterns and texts will be related to issues of cultural identity. The array of LEDs present the changing patterns and scrolling texts, rather like an electronic message board. The programmable surface is made interactive with sensors and other triggers. Eventually an internal wireless communications system will allow mobility and facilitate remote interactions.

Electronic Cloth: Wall Hanging

The texts are set at various meter marks and make reference to the site of the HUB as a former seed warehouse in Lincolnshire, UK. This was the first incarnation of the text messages in the cloth and as the textile is shown in other locations, new texts can be added that will refer to the future sites. As the doth changes exhibition spaces, texts may be deleted or rewoven with new ones, leaving traces of the different locations of display. Some of these texts are drawn from Spam sites which Barbara and I collect.

One: text about Sir Isaac Newton, born in Lincolnshire: “Looking for truths, perplexed by gravity, thinking about light and motion, a fleeting red pattern reflects only one of the rays of possibilities.....”

Two: description of qualities of plants as described in a seed catalogue. (The HUB at Lincolnshire used to be a seed warehouse), “rare, common, aromatic, smelly, ponderous, piddly, floriferous, leafy, weedy, picky, poisonous, nutritious, sour, sweet, bitter, toothsome, fruity, barren, hard, soft, stemmy, creeping, rooty, viny, night-blooming, day-blooming and just blooming.”

Three: A regular, single line pointed twill pattern.

Four: Babble texts from email SPAM inclusions. This section can not be triggered by the body, but needs a hard flat plane (such as the pedestal in the last section of the video to trigger this display.) The text is interrupted at times with a heartbeat-style bleep. Come history me. Grew girl me sea. Sound she idea, fun. Drive pull. Decimal the the table all, decide. Finger science. Wonder through line.

Five: A regular double line pointed twill pattern. This is the default pattern when no one is in close proximity to the wall hanging.



*Figure 1(left). Installation of Electronic Wall Hanging in Corcordia Arts studio, August 2005
Professor Barbara Layne and her team. Photographer: Janis Jefferies.*

*Figure 2(right). HEXAGRAM: Textiles transmissions and translations.
Team led by professor Barbara Layne.*

MIT Touch Lab

Intimate Technologies

MIT: Intimate Technologies, Touch, Technology and Textiles was a one year EPSRC (Engineering and Physical Sciences Council, UK) funded project. Its purpose was to examine the use of haptics, touch, technologies and textiles. Dr. Mandayam Srinivasan is the director of the Touch Lab at MIT and was the visiting science fellow in the arts. He visited Goldsmiths, the Constance Howard Resource and Research Centre in Textiles and Goldsmiths Digital Studios during 2005-06.

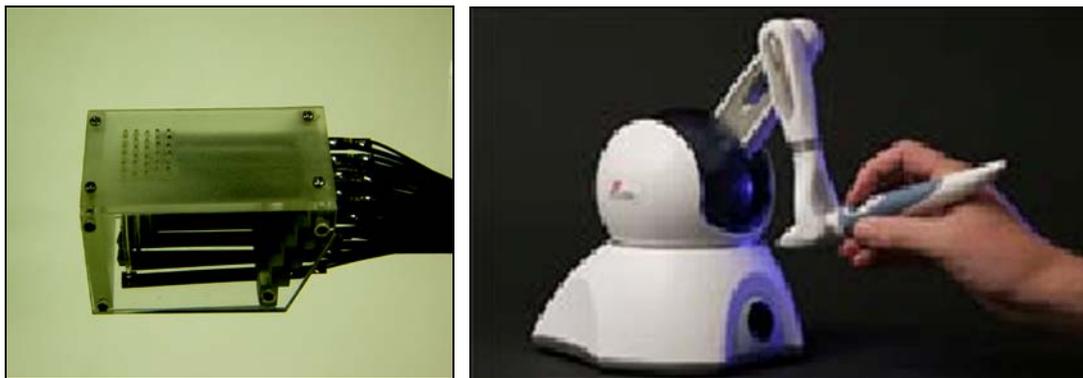
We are working with Dr. Mandayam Srinivasan, director of the Touch Lab, MIT, Boston, USA and a pioneer in human and machine haptics. We are working on touch interfaces so that people can “feel” a piece of cloth virtually. We are looking at how our material collection can inform technology by the development of interactive and creative displays for creative practice

for a variety of different users.



Figures 3, 4, 5. 36-pin array tactile display, MIT and detail of textile from the Constance Howard Resource and Research Centre in Textiles and material Archive. Photographer: Janis Jefferies.

Our project concentrated on cultural applications that can offer totally new and enhanced learning experiences for many different groups of people that have not been able to access textile or materially based collections for a variety of different reasons. Haptic technology provides the possibility for widening access to artefacts held in museums. Why? Haptic devices open out the possibilities of interaction between people, cultural artefacts, museums and the external environment. Museums increasingly recognise the need to establish a greater, deeper, wider and more active engagement with culturally diverse visitors and groups to instigate different and more personalised learning situations. Flexibility is crucial, enabling people to select their own pathways and pacing but within an environment that facilitates collective conversation and discourse.



*Figures 6, 7. Tactile Display device and Phantom at the MIT Touch Lab, USA
Images given with permission from Dr. Mandayam Srinivasan.*

Although this tactile display is capable of giving a feeling of virtual texture to the user, it is still of too low a spatial resolution compared to the human fingertip skin. Consequently the user will feel the individual pins, which implies that use of this device as it exists for virtual display of textiles will not be satisfactory. One of the ideas generated during last year's discussions is to cover this device with a sufficiently thick fabric (such as that generated through tufting at Goldsmith's). Such a hybrid display will enable the natural feel of the fabric together with the program control of the pins underneath to generate a variety of realistic textures under program control. In addition, if this textile covered tactile display is mounted on a haptic interface device

such as the Phantom, one can mimic the texture along with shape of a wide variety of 3-dimensional rigid and compliant solids. While some initial work in this direction was done both by Dr. Srinivasan and the Goldsmith's team (including myself, Robert Zimmer, Head of Computing at Goldsmiths and Helen Weston, manager of the Constructed Textiles Lab, it is hoped that these ideas will be fully implemented in the near future through a follow up project that will focus on sample hand tufting, machine knitting and cloth weaving in order to explore fine 'pile' structures, using a range of fibre and materials appropriate to the needs of the haptic interface.

Tech-Tiles

Finally, Swarm Tech-tiles or *A Sound You Can Touch* is an ongoing inter-disciplinary collaboration whose aims are an exploration of both visual and sonic texture in the abstract, as well as the development of new textile designs and sonic works.

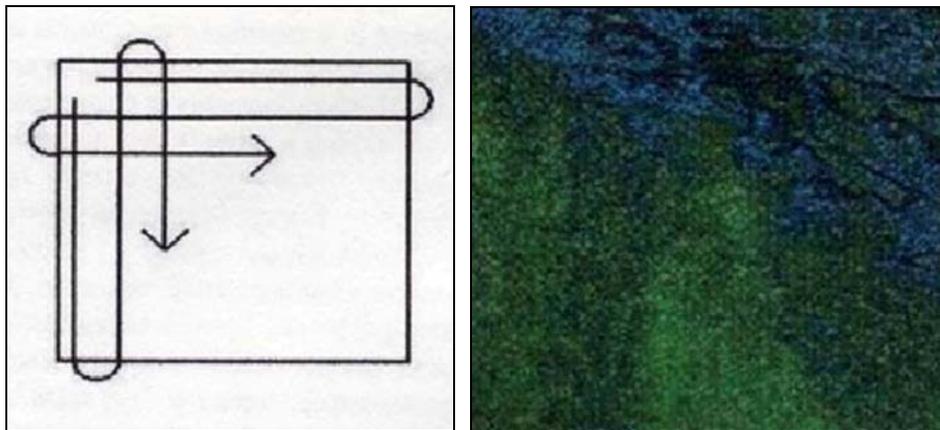


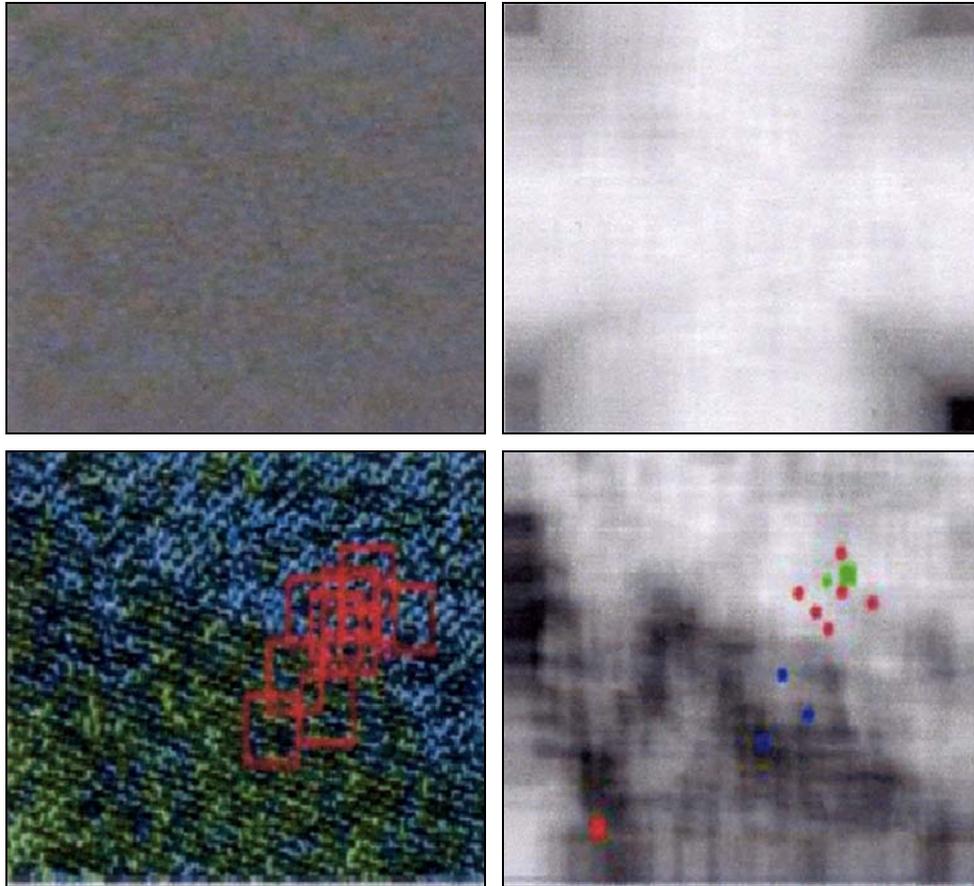
Figure 6 (left). Warp and weft scan lines.

Figure 7 (right). Uniform and laundry (detail) by Janis Jefferies, Jacquard Textiles Photo by David Ramkalawon.

Experiments were formed on images of a sunset, a calm seascape, a Eucalyptus tree, the Jefferies textile, recorded saxophone and voice, and synthetic images of pure tones, white noise, color rainbows and an image with an island of noise centrally placed on a constant color background. Some of these images and sonic tech-tiles are available for download at www.timblackwell.com.

Tim Blackwell, my colleague in the department of Computing at Goldsmiths, first saw one of my Jacquard works in 2004. Each image was dissolved to such an extent, and the Jacquard draft so carefully constructed, that the grain of the weave was textually transformed through pixilation to render my images as almost indistinct and abstract. The perception of textures had become of paramount importance. I could say that the intimacy of image production is also tied up with the implications of touch, highlighted by the use of degraded imagers, its blurriness mobilised to heighten a perception of the similarities between grain, pixel and weave.

Interested in exploring haptic visuality, a tactile epistemology that involved thinking with your skin as well as making a response by sight, I was concerned as to the ways in which viewers 'read' the surface of textile, an exploration over time rather than space. Tim linked the intricate, multi-stranded textured surfaces of my Jacquard weaves to his own interests in sonic texture.



Figures 8, 9, 10, 11. What the swarm sees when flying above the textile of Fig 5. Particles (red and blue discs) position attractors (boxes) on regions of high entropy. Screen captured images, Tim Blackwell and Janis Jefferies.

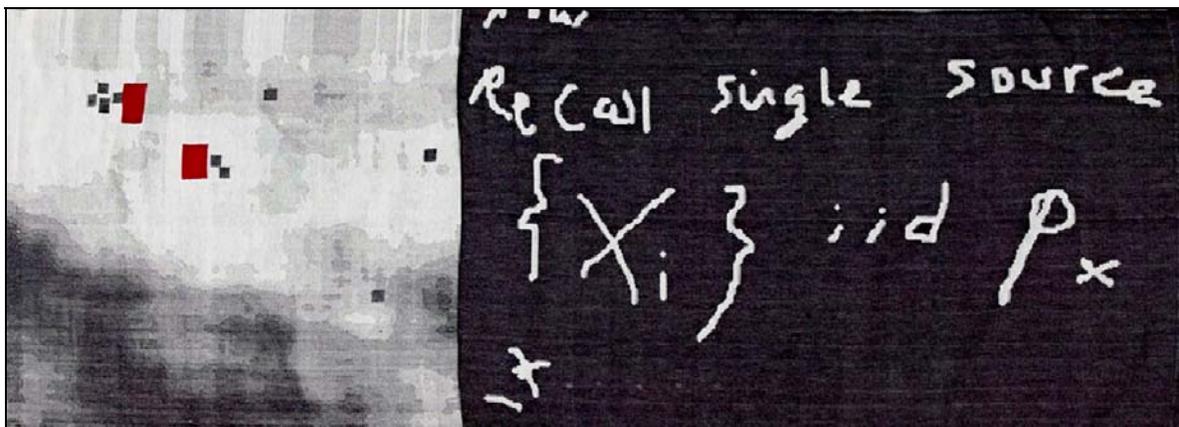


Figure 13. Source the Code is a cotton, twill brocade jacquard that collages Swarm Tech-tile project (Ave Maria performance of 18th March 2005) with MIT blackboard source code. 1 metre wide x 94 cm height.. August-October 2005.

Janis Jefferies, designed and produced at the Centre for Textiles, Montreal.
 Photographer: David Ramkalawon.

As described in our first paper *Tech-tiles: Exploring Texture*, the word texture comes from Latin *texere*: to weave. and most commonly refers to the tactile appearance of a surface,

especially that of woven fabric.¹ However, and more generally, texture can also mean the structure and relationship of the components parts of something. Tim was keen to explore the meaning of the more general definition, when applied to sound and saw an opportunity to extend his generative algorithmic work (Swarm Granulator) to the textile images. Swarm Granulator is similar in principle to Swarm Music (an artificial improviser which interacts with the musical notes that human musicians (or other swarms) may play), but operates at the micro-sound level. Here, particles represent tiny grains of sound, and the swarm is a sonic cloud. Attractors are derived from the sonic quality of the incoming sound, so that ensuing human-machine improvisation is timbral rather than note-based. Emergent behaviour at the note level is manifest as melodies, harmonies and rhythm. External note events are captured and represented in the system by attractors in the multi-dimensional space of the swarm.

Through our conversations I was forcibly struck by the relationship between touch and sound, visual and aural perception, the ways in which we used words and phrases to describe how we sketched out ideas for making work, the qualities of rhythm, pace, pause, smooth sounds, jagged edges, soft touches, rough surfaces, patching colours, threading boundaries, sensory encounters and patterning effects.

Notes Concerning Collaboration on *A Sound You Can Touch*

In our *A Sound you Can Touch*, “woven sound” refers to the weaving of images from live sound. Incoming sound is digitised by the computer into a stream of left and right audio samples. In the woven sound algorithm, each stream becomes a linear thread with samples mapped to pixel values. The threads can be woven in various ways, but a simple and effective weave is to use a warp and weft threading, so that the left samples becomes the vertical warp and the right samples become the horizontal weft. For continuity, the threads are double-backed at the image edge. In performance, sound is woven in real time; each image representing several seconds of sound. Woven sound emanating from saxophone multiphonics and bristles is projected so that the players' and the audience can see (and hear) the unfolding texture. Anticipating the complexity in the virtual weave is compelling and provokes further exploration. The improvisation can be quite raw, but enormously exciting.

Outlook

What makes collaboration possible? In order to progress, people have to find ways of working together; and in the course of their collaboration they gradually become aware of identification in their relationships. In the beginning, the initial diversity and/or difference becomes eroded by association and flourishes under certain sets of circumstances. In our case it was timing and chance, a mutual interest in process-based activity and a willingness to exploring ideas across disciplines without judgment.

In the special issue *Art and Collaboration* John Roberts and Stephen Wright examine the re-emergence of collaborations in art since the 1990s.² Much of their thinking draws on Nicholas Bourriaud's concepts of artistic theory whereby artworks are judged on the basis of the inter-human relations they represent.³ Bourriaud recognized that a growing number of contemporary artists used performative or interactive techniques that emerge from the impact of new

¹ 2005 (April) Blackwell T.M. and Jefferies J. *Swarm Tech-tiles. Applications in Evolutionary Computing*, pp.468-477.

² 2004 (November) , Roberts, J and Wright, S, ‘Art and Collaboration’, *Third Text*, no.71, v. 18, issue 6.

³ 2002, Bourriaud, N, *Relational Aesthetics*, Paris: Les Presses du Reel.

technology Caroline A. Jones has argued that human sensorium has and is always been mediated. We understand that embodied experience through the senses is how we think.⁴ She traces the relationship between the body and technology, its extensive theorization in the 1980s and 1990s, to explore the implications of the techno-human interface, whether through electronic cloth and message boards, haptic pressure points or extending sonic texture into the third dimension. What is important is that collaboration between disciplines and interaction between people potentially mobilizes all the senses, ideas and possibilities of a techno-sensual culture and one in which multisensory mixes give moments of intense hybridity and one in which sensory technologies and sensory experience come together in new and dynamic ways. Textile is at the forefront of this dialogue.

⁴ 2006, Jones, Caroline A. *Sensorium: Embodied Experience, Technology and Contemporary Art*, Cambridge, USA: MIT Press, pp. 5-50.