Wearable biosensors: expertise, sensor data and interfaces with data

Commissioned by Caroline Bassett . This workshop is part of a commissioned project probing some of the questions raised in the Expertise and Knowledge strand of the CCN+ Digital Economy Initiative.

Practice-based research workshop, UCSC January 2016 , Organised by: Dr Emile Devereaux and Dr Kate O'Riordan, University of Sussex, Working with Prof Jennifer Parker and David Harris at UCSC

The workshop follows on from the internationalization activity in CCN+, specifically an exploratory trip to UCSC by the CNN+ leaders, and activity at the University of Sussex fostering a Sussex-UCSC digital media exchange programme.

Programme of work:

We took two forms of contemporary mediation: the measuring of the self - together with the sensing of environmental and non-human animal factors - and brought them into conversational modes. The aims of this kind of engagement was:

1- for people to learn about sensing technologies in a hands-on maker format;
2- for individual subjective knowledge to be extended into a relationship with environmental and inter-species interaction;
4 - to expand the role of HE in opening up the politics of knowledge production across art and science

Participants:

Kate O'Riordan , Tim Jordan, Mary Agnes Krell, Emile Devereaux, David Harris, Joan Haran, Joseph Klett, Kat Braybrooke, Stephen Fortune , Susanna Ruiz, Jennifer Parker, Irene Fubera Manuel, Sharon Daniels, Finley Coyl, Darrell Mckelvie Ruppel, Marguerite Kalhor

Project Brief by Emile Devereaux and David Harris (this was disseminated at the start of the workshop)

'To creatively articulate and imaginatively present the social imaginary as mediated by environmental and/or biosensors. "

The demo is a test, a prototype —neither a representation of the real world, nor a finalized reality in itself. It hangs in an anticipatory, or preemptive, expectation of the next technical development." – Orit Halpern, "Inhuman Vision"

The practice-based research workshop engages humanistic and philosophical concerns in relation to maker technologies and critical, interaction design methods.

Learning Outcomes

1. To critically engineer wearable or portable sensing devices
2. To bring into conversation environmental and bio-feedback data
3. To utilize participatory methods in order to link individual experiences of data with understandings of collectivity
4. To articulate notions of the social imaginary within interdisciplinary, theoretical and "real world" frameworks and to creatively engage with participants, external audiences and other stakeholders"

What happened:

The morning was given over to brainstorming and forming teams. The afternoon and early second morning were given over to working up a prototype with the sensors kits. The last part of the workshop was a summary presentation of the projects followed by judging the prototypes.

The project teams and the prototypes developed included:

a) openhearted communication monitor: this was a blinking badge expressing heart rate – measured by pulse (see YouTube link)

b) AEEP: Actor Emissions and Environmental Probabilistics – this enabled measurements of perspiration and looked at how agents (humans in this case) are vectors for emitting chemicals into the environment and that this has a relationship to consumer practices, or conditions of environment (see attached PDF of presentation)

c) A project to detect the relative reaction of trees and people to chilies – this created a sensor for heart rate after eating chilies – the tree part remained unresolved -

Chili Team

d) A manifesto – one group eschewed the sensor prototype and put together a critical design manifesto which riffed off the Critical Engineering Manifesto written by Julian Oliver.

Manifesto team:

e) A series of experiments in detecting fear and anxiety about social encounters – this compared reactions to fear of imaginings of fearful encounters

Team – fear of shaking hands

The CCN+ funded workshop is linked to two other workshops for which the CNN+ is a pilot. Two later workshops will build on this, funded through University of Sussex Partnership/British Academy and the CHASE consortium. The kit purchased for this workshop will be used in future workshops and allow staff and students to play around with and experiment with this kind of kit.

Further dissemination will be conducted through the SHOT panel in Singapore in June 2016, dissemination of the project report, and a journal article.