This book is a collection of essays from artists, designers, psychogeographers, cultural researchers, futurologists and neuroscientists brought together by Christian Nold to explore the political, social and cultural implications of visualising people’s intimate biometric data and emotions using technology.

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INTRODUCTION: EMOTIONAL CARTOGRAPHY TECHNOLOGIES OF THE SELF CHRISTIAN NOLD

MACHINES MADE TO MEASURE: ON THE TECHNOLOGY OF IDENTITY AND THE MANUFACTURE OF DIFFERENCE RAQS MEDIA COLLECTIVE

A FUTURE LOVE STORY MARCEL VAN DER DRIFT

SAN FRANCISCO EMOTION MAP

CHRISTIAN NOLD

MAPPING THE UNSEEN: MAKING SENSE OF THE SUBJECTIVE IMAGE DR. STEPHEN BOYD DAVIS

STOCKPORT EMOTION MAP

CHRISTIAN NOLD

BLANQUI’S PARADE ROB VAN KRANENBURG

GREENWICH EMOTION MAP

CHRISTIAN NOLD

SOCIALLY ENGAGED ART: THE CONSCIENCE OF URBAN DEVELOPMENT SOPHIE HOPE

BRENTFORD BIOPSY

CHRISTIAN NOLD

 HACKING OUR TOOLS FOR THOUGHT DR. TOM STAFFORD

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This book is a collection of essays from artists, psychogeographers, designers, cultural researchers, futurologists and neuroscientists, brought together to explore the political, social and cultural implications of visualising people’s intimate biometric data and emotions using technology. The book is the outcome of a research process which aimed to reach a deeper understanding of a project called ‘Bio Mapping’, which since 2004, has involved thousands of participants in over 16 different countries. Bio Mapping emerged as a critical reaction towards the currently dominant concept of pervasive technology, which aims for computer ‘intelligence’ to be integrated everywhere, including our everyday lives and even bodies. The Bio Mapping project investigates the implications of creating technologies that can record, visualise and share with each other our intimate body-states.

To practically explore this subject, I invented and built the Bio Mapping device, which is a portable and wearable tool recording data from two technologies: a simple biometric sensor measuring Galvanic Skin Response and a Global Positioning System (GPS). The bio-sensor, which is based on a lie-detector, measures changes in the sweat level of the wearers’ fingers. The assumption is that these changes are an indication of ‘emotional’ intensity. The GPS part of the device also allows us to record the geographical location of the wearer anywhere in the world and pinpoint
where that person is when these ‘emotional’ changes occur. This data can then be visualised in geographical mapping software such as Google Earth. The result is that the wearer’s journey becomes viewable as a visual track on a map, whose height indicates the level of physiological arousal at that particular moment. The Bio Mapping tool is therefore a unique device linking together the personal and intimate with the outer space of satellites orbiting around the Earth. The device appears to offer the colossal possibility of being able to record a person’s emotional state anywhere in the world, in the form of an ‘Emotional Map’.

People who actually wore the device and tried it out while going for a walk and then saw their own personal emotion map visualised afterwards, were baffled and amazed. But their positive reactions hardly compared to the huge global newspaper and TV network attention that followed the launch of the project. People approached me with a bewildering array of commercial applications: estate agents in California wanting an insight into the geographical distribution of desire; car companies wanting to look at drivers’ stress, doctors trying to re-design their medical offices, as well as advertising agencies wanting to emotionally re-brand whole cities. Other emails arrived from academic sociologists, geographers, futurologists, economists, artists, architects and many urban planners, trying to get new mental insights into their own disciplines. Surprisingly, there were also intensely personal emails from people who wanted to understand their own body and mind in more detail, asking for a therapeutic device to monitor their daily anxiety levels.

I was shocked: my device, or more correctly, the idea or fantasy of my device had struck a particular 21st century zeitgeist. A huge range of people had imagined ways of applying the concept, some of which I felt uncomfortable about. I realised that ‘Mapping Emotions’ had become a meme that was not mine anymore, but one that I had merely borrowed temporarily from the global unconscious. Faced with some dramatic choices, I decided to try to establish and document my own vision of emotion mapping as a reflexive and participatory methodology.

From talking with people who tried out the device, I was struck by their detailed and personal interpretations of their bio-data. Often we would sit next to each other and look at their track together. While I would see just a fairly random spiky trail, they saw an intimate document of their journey, and recounted events which encompassed the full breadth of life: precarious traffic crossings, encounters with friends, meeting people they fancied, or the nervousness of walking past the house of an ex-partner. Sometimes people who walked along the same path would have spikes at different points, with one commenting on the smells of rotting ships, while another being distracted by the CCTV cameras. People were using the Emotion Map as an embodied memory–trigger for recounting events that were personally significant for them. Sometimes these descriptions overlapped, while at other times they were unique. For them, the spikes were documenting not what we would commonly call ‘emotion’, but actually a variety of different sensations in relation to the external environment such as awareness, sensory perception and surprise.

I suddenly saw the importance of people interpreting their own raw bio-data for themselves.

Bio Mapping functions as a total inversion of the lie–detector, which supposes that the body tells the truth, while we lie with our spoken words. With Bio Mapping, people’s interpretation and public discussion of their own data becomes the true and meaningful record of their experience. Talking about their body data in this way, they are generating a new type of knowledge combining ‘objective’ biometric data and geographical position, with the ‘subjective story’ as a new kind of psychogeography.

Participants often describe the sensation of using the Bio Mapping tool as a kind of Reality TV show, where they can see their own life documented in front of them. Such a description suggests something similar to Berthold Brecht’s notion of ‘Verfremdung’ (de–familiarisation). Brecht’s idea is that this performative distancing allows the viewer to take a critical
distance on viewed events. In the case of Bio Mapping, the participants are vocalising their intimate internal mental life as well as public behaviour to a communal group. In effect, the participants are carrying out a type of co-storytelling with the technology, that allows them to creatively disclose, or omit, as much as they like of what happened during their walks. The Bio Mapping tool therefore acts as ‘performative technology’ which shoulders the burden of having to hold the public’s attention, while offering a safe distance from public exposure to the ‘interpreter’. Used in this way, the tool allows people who have never met each other to tell elaborate descriptions of their own experiences, as well their opinions on the local neighbourhood, in a way that they would have never done otherwise.

This vision of Bio Mapping as a performative tool which mediates relationships is very different to the fantasy of Emotion Mapping that many people approached me about: such as marketeers’ intentions to metaphorically ‘slice people’s heads open to see their innermost feelings and desires’.

With the passing of the time, I started to realise that both the particular context and ways in which a biometric sensor is used dramatically affects the social relationships that are formed, as well as the types of observations that people make during the workshop.

The early Bio Mapping workshops had all taken place in art galleries in the centres of towns and cities. People often walked randomly for 30 minutes before returning to the exhibition to see their emotion maps. In such context, the kind of descriptions and annotations that people left were mainly anecdotal: drank a coke here, had an ice cream there, was spooked by pigeons etc.

Once I started to work with local community organisations for longer periods of time and in less central towns areas, where people lived in and cared about (and not just worked or shopped), the annotations changed dramatically. Instead of being just about their momentary sensations in the space, participants told stories that intermingled their lives with the place, local history and politics. The discussions often followed a trajectory of noticing the bodily effect of car traffic on one person’s emotion map, often leading to discussing the lack of public space and identifying its social and political causes. This process of scaling-up and seeking connections between issues encouraged people to talk both personally and politically in a way they had often not done before with other local people.

At the end of each Bio Mapping workshops project, all the information and data gathered were designed into a printed map, which was then distributed for free in the locality. For example, in the Greenwich Emotion Map, this meant using a GIS (Geographical Information Systems) software to create a communal arousal surface which blended together 80 people’s arousal data and annotations. The resulting communal ‘emotion surface’ is a conceptual challenge and question. Can we really blend together our emotions and experiences to construct a totally shared vision of place?

**INTRODUCTION TO THE ESSAYS**

The theme of this collection of essays is to investigate the apparent desire for technologies of Emotion Mapping, using a variety of different approaches. In addition to the essays, interspersed throughout the book, are the images of the printed Emotion Maps as well as photos of the participatory process. The aim being that this combination of practice and theory will allow us to imagine the social, economic, cultural and political implications of creating a public Emotional Cartography.

Looming heavily over the idea of being able to see what people think and feel, is the spectre of social and mind control. The text ‘Machines made to Measure’ by the Raqs Media Collective examines a history of biometric technologies as tools of state control, that rewrite our notions of self. For them, mapping the body is “the first step in its governance, and in the subjugation of its boundaries to regulation and control”. Their essay highlights an important duality in the way biometric technologies are used.
The first tends towards an aggregation of people’s bio-data and a search for communal averages and patterns as in anthropometrics or racial profiling. The second attempts to identify and track the unique individual via technologies such as fingerprinting. Raqs do suggest that people possess a natural ‘left-hand’ knowledge that allows them to structure new identities:

“\textit{What the technologies of identification do not take into account, however, is the ability of a person to enact different iterations of the self... a hyperlinking of aspects of being – an expanding and cross referencing matrix of acts, attributes and attitudes that constitute the database of a person’s ‘becoming’ over time}.”

This concept of a personal database of our own future possibilities is an alluring alternative vision for technology that resonates with Bio Mapping and runs counter to the way biometric technologies are currently being thought about.

Marcel van der Drift, in the text ‘A Future Love Story’ extends this vision towards a not too distant future, where mobile phones sense and log our emotional state, sending the information to other people’s phones. In this world, ‘self-reflection’ on one’s emotional behaviour is almost universally enforced by a mixture of technology, design and social peer pressure. The central question that emerges from the story is a question of choice. Who will interpret all these huge amounts of body/emotion data? Will it be interpretation software, other people’s reactions or our conscious mind? The chocolate box ending of the story suggests a willing rejection of technology in favour of pure and unmediated human experience. Nevertheless, in my mind, the uncomfortable suspicion arises that, once introduced, people may not be allowed to or actually want to live without these gadgets.

‘Mapping the Unseen’ by Dr. Stephen Boyd Davis examines a history of maps that emphasise the interpretative and subjective aspects of mapmaking. His approach suggests that while we may not be aware of it, we are already used to working with psychogeographical maps. Boyd Davis suggests that this drive towards the subjective image leads to interactive technical systems. His articulation of an ‘Egocentric Subjectivity’, where the individual user is in total charge of generating his own map of the surrounding world, is a succinct summary of the current paradigm of technology design. For Boyd Davis, rather than self-reflection, biometric data enables reflection-in-action, which suggest a human-machine feedback loop of people integrating with technical systems. In this technophilic vision of individualistic interactivity, how can we imagine shared social space emerging where people develop new social relations?

In ‘Blanqui’s Parade’, Rob van Kranenburg offers a complex allegory for the multiplicity of a social space where different groups of people can be simultaneously carrying out divergent agendas. His text suggests the importance and power of subtlety, ambiguity and subterfuge in communal social behaviour. For a keen observer, small perceptual shifts can suddenly and dramatically alter our experience of an event and our own role within that.

The essay ‘Socially Engaged Art’ by Sophie Hope moves the focus away from a purely theoretical speculation, to look at an applied example of the Bio Mapping project being used by a local community in Greenwich, London. To understand the project, Sophie unpacks the complicated political contexts that this participatory art project operates within. She analyses the project by establishing categories of participatory tactics that artists have evolved in order to try and break through paternalistic and top-down relationships with local audiences. Sophie identifies Bio Mapping as adopting a deliberately schizophrenic tactic of (F)utility, that tantalises with easy disclosure while offering dynamic complexity. Her articulation of (F)utility suggests a constructively agonistic tactic that challenges the full range of participants and stakeholders involved in socially engaged art project.

Tom Stafford’s concluding essay ‘Hacking Our Tools for Thought’ offers us a vision of the mind as flexible and naturally tool–using. Starting from the example of a patient who has lost his long–term memory, Stafford
articulates a perspective of the modular brain that can have parts removed and still manage to function, and an ‘extended mind’, which can have parts added integrate them into the flow of thought. Stafford proposes that the mind can have the Bio Mapping component added to enhance communal self reflection and turn us into social cyborgs. He rejects the egocentric individualistic notion of the mind and proposes Bio Mapping as a vision of future social tools that can empower us to move away from the individual brain towards communal mind hacks and a radical rethinking of ‘self’.

As a conclusion, it comes natural to ask and reflect on what will be the future of Emotional Cartography. Will it become mind control, mobile phones, interactive maps, revolution, public consultation or brain augmentation? But, perhaps, the most important aspect of Emotional Cartography is the way in which it creates a tangible vision of places as a dense multiplicity of personal sensations, which we are not normally aware of. The complexity and diversity of these experiences presents a fundamental challenge to all our formal notions of representational politics. Furthermore, the bottom-up process of identifying communal matters of concern, starting from personal sensations, suggests the possibility of an alternative body politic of place.

**ABOUT THE EDITOR**

Christian Nold is an artist, designer and educator who works with people to create new models for communal representation. In 2001 he wrote the book Mobile Vulgus, which examined the history of the political crowd and which set the direction for his research into participatory mapping. Since graduating from the Royal College of Art in 2004, he has taught and lectured extensively whilst running large scale research projects across the world.

Typical visualisation of Bio Mapping data shown in Google Earth. The height of the track indicates the physiological arousal at that point. The annotation was made by the participant.
“...We may classify human beings and human features but cannot bring about or find a precise agreement between any two; we have white men, red men and yellow men; we have well ascertained and defined types of humanity; we have in each type classifications of hair, eyes, noses, mouths and so on; but we have a large residue of difference between any two individuals and so on; but a large residue of difference between any two individuals remains as it were a recurring decimal which cannot be distinguished; the difference between each human face and every other of its species. Upon which evidence of identity has been always so firmly rested can be easily observed, but it cannot be specifically and completely isolated. We know that it is there, but we cannot in any case completely define the details. But in the case of finger impressions, there is no question of dealing with those evanescent expressions which so largely contribute towards recognition of the identity of the human face. The exact differences in such impressions may be pointed out with as much certainty as the differences between the maps of two countries...” [1].

A modern lie detector, combining sensors for breathing rate across the chest, blood pressure on the arm and galvanic skin response on the fingers.
Images of human beings construct a map of the world. Even the judgement in a criminal case has to rely on the metaphor of the difference between the maps of two countries when talking about the difference between two impressions of the ridges and whorls at the fingertips of two human beings. As if the body were a territory, and its features possible to render as lines, ridges and whorls on a map. As if the body were a territory, the mapping of which would be the first step in its governance, and in the subjugation of its boundaries to regulation and control. Images of human beings, like maps of the world, locate like and unlike, near and far, familiar and strange. These categories, which are premised in the sense of what we see as being similar or different to who we are, or where we stand – on our sense of orientation. It is through these that power creates the binaries needed to inscribe in our minds it’s map of the world.

When this happens, images of the body (or of clusters of bodies) can become weapons of offence, and the instruments of a siege. They can be used to maim or injure, or imprison. No war or skirmish (local or global) is fought without it’s own arsenal of images. Images are endowed with the ability to create proximities and distances that can impel or sanitize acts of violence. Consider the aerial photograph used to identify targets for bombardment in cities, or the identikit photograph of the ‘Wanted’ person that often sticks to the walls of cities. Both kinds of images carry with them the charge of an anticipated act of violence, a bombing, an imprisonment, perhaps an execution. Both act as indexes, as maps, as locators of targets, and as the means to zero in on them. They are both navigation aids for missiles in the mind, and the radar that locates the enemy for the eye.

Consider the image of the typical ‘other’, the one who renders a distance between anyone we say is like ‘us’ and anyone we are accustomed to thinking of as unlike us. At its barest, it is a measurement of the distance – between us, and those we are mobilized to think of as being different, or exotic, or banal, or inferior, or superior, subhuman, or superhuman in relation to us. At its barest, this is what the issue of identity and difference are about.

In a photograph taken in the year 1876, forty-six men, women and children, aboriginal inhabitants of the Andaman Islands (an archipelago off the south east coast of India), are portrayed arrayed about a single measuring rod. The rod, at the very centre of the image, stands in relation to the people about it as a scale would to features on a map, or a silhouetted, stylized human figure would to an architects drawing of a building. Perhaps, more crucially, the rod can be read as an indexical allegory, or as a barely concealed code inscribed into the image that ironically points to an imputed and immeasurable distance that separates the photographed from the photographer, or, man from his measure [2].

The photograph, titled simply and prosaically, as “Andamanese Group with Measuring Rod”, is one of a series of images taken by Ernest Horace Man, as part of his project to study Andamanese aboriginals, then considered to be a ‘pure’ primitive race in serious danger of extinction. E.H. Man’s copious photographic record paved the way for an intense process of the scrutiny of the bodies of living and dead Andamanese (which lasted through to the early years of the twentieth century, and which continues, somewhat erratically till today). They were photographed against anthropometric grids, clothed as well as naked, their skulls were measured with calipers, and their nostrils, ears, eye sockets, buttocks and hair were measured and tabulated on cross indexed tables. The photographs, which were circulated as ethnographic studies, images in travelogues, items in popular encyclopaedias and museum catalogues, illustrations in missionary literature and as pornographic curiosities, continued to have a career well into the late twentieth century.

The measurements and images harvested from the Andamanese
were worked on to compute statistical averages – means and medians that
could then express the idea of what an ‘average’ Andamanese might be.

This in turn could then be taken to express the ‘identity’ of the
Andamanese, a figure that could substitute a mathematical metaphor
for the inconvenient tendency of the individual human body to exhibit
variation. The figure of the measure of the ‘average’ Andamanese
(expressed through calculations, or through photographic composites)
was then something that could be compared to other ‘averages’ to
create clusters of information about niches within the social spectrum.
Photographic composites of Andamanese skulls, for instance, were mapped
on to composites consisting of the images of the skulls of Irish indigents,
prostitutes, convicts and the criminal insane. Finally, there were more
photographs and measurements than there were people. The Andamanese
became more data and less a living community of human beings. It could
be said that the technology that indexed their ‘identity’ and hence their
‘difference’ to those who did the indexing also measured out the terms of
their subtraction from life, until they remained only as the ghostly prisoners
of photographic negatives in the collections of anthropological museums
and archives. The measure of man in the end became a calculus of
cadavers – a detail in the arithmetic of violence of the nineteenth century.

THE SMEAR OF TRUTH

If Anthropometry sought to compute an average that flattened differences
in the name of a composite image of an identity, then Fingerprinting,
another way of reading the body for signs of identity, sought to locate and
fix the individual as a unique and unvarying entity [8]. Nineteenth century
India, which was one of the greatest anthropometric field laboratories in
the world, was also the prime experimental site for the development of
technologies for registering and interpreting fingerprints, and the rise of
fingerprinting as a precise forensic science. From the pioneering usage of
fingerprints as identity markers in land records in the village of Jangipur
in the Maldah district of Bengal by James William Herschel in 1858, to
Francis Galton’s enthusiastic ‘anthropometric’ endorsements of Herschel’s
experiments, to the systematization of forensic fingerprinting (along
with ‘Bertillonne’ or anthropometric measurements after the manner of
Alphonse Bertillon) by Sir Edward Henry, Azizul Haque and Hem Chandra
Bose of the Bengal Police in 1897, created a rich body of knowledge about
the principles that animated technologies of identification. In a sense,
the techniques of ruling through information that were perfected in the
colonies, were then exported to the metropoles, and thereafter became
generalized as the standard technologies for the affixture of identity and
the recognition of difference that we have come to know today on a global
scale. Had the early experiments with anthropometric image-making not
been undertaken in remote parts of the world, or the intense desire to
read the smears of fingertips as markers of truth not taken root in the
minds of colonial administrators in rural Bengal, the techniques of
biometric identification and surveillance that we have become familiar
with in recent years all over the world would not have had such a smooth
and untrammelled career as the necessary exigencies of power, articulated
as knowledge in and about bodies, read as maps, and subjugated as
conquered territories.

It is important to understand that this anxiety to produce certainties
about identity emerged from a deep cognitive gulf that separated power
from its objects in colonial Bengal. To the rulers of the day, the ‘natives’
they governed, were infamously disingenuous. Their ‘un–veracity’ and the
desire to confuse those who ruled them was a matter of great concern to
administrators, judges, prison authorities and even to those assigned with
the tasks of collecting taxes and revenue. Thomas Babington Macaulay
once famously remarked, with some exasperation and considerable
rhetorical flourish: “What horns are to the buffalo, what the paw is to
the tiger, what the sting is to the bee, what beauty, according to old Greek
song, is to woman, deceit is to the Bengalee. Large promises, smooth
excuses, elaborate tissues of circumstantial falsehood, chicanery, perjury, forgery, are the weapons, offensive and defensive, of the inhabitants of the lower Ganges...”.

It was against these weapons, this modest arsenal (deceit, circumstantial falsehood, chicanery, perjury, forgery) of everyday insurgencies in the offices, courts and corridors of power that the emergent colonial state invested into the development of an armoury for ascertaining identities and recognizing differences. That this project of ascertaining who was ‘what’ took place at the broadly anthropological level (as in the case of the Andamanese, and many other ethnic groups spread across the South Asian landmass) as well as the microscopically forensic level (as in the case of the Bengali peasant) tells us about the scope and pervasiveness of this anxiety.

It is difficult to imagine why or when and under which circumstances one would like to yield a complete transparency about oneself to the scrutinizing apparatus of power. However, the increasingly fraught operation of power in society requires the harnessing of exponentially amplified means of visualizing us as transparent vessels of bodies of data. This means that the slightest shadow, the smallest reticence or hesitation in yielding the substance of our selves, and the iteration of our selves through actions, encounters and interactions with others, is liable in many places today to be read as ‘deceit, circumstantial falsehood, chicanery, perjury and forgery’. This is the means by which the true test of citizenship is not a level of commitment to and participation in the polis, but the degree to which the subject is prepared to make him or herself known to the state. This votive offering of knowledge about ourselves to the guardians in power then guarantees us a place in the polis, and a certainty that we are what the state says we are, and distinct from those aliens that it seeks to protect us from.

In an early book of the Mahabharata, one of the great epics in the Indic tradition, Ekalavya, an aboriginal teenager, is found copying and practicing the education being imparted to the Aryan warrior princes, the Pandavas, the protagonists of the narrative. Their teacher and guardian, who is concerned that Ekalavya has greater mastery over the art of archery than his favourite pupil – the Pandava prince Arjun – demands of Ekalavya his right thumb as Guru Dakshina (a gift that every pupil must make to his teacher on the completion of his education).

Ekalavya, bound as he is by the protocols and codes that govern the transmission of knowledge in society, cuts off his thumb (the one with which he grips the bowstring) and offers it to the guardian. The subaltern exchanges his mastery of archery for the knowledge that the warriors will always be different from him, and that it is his identity as a lowborn aboriginal that will underwrite this difference. The difference will locate him, as well as them, in the places assigned to them by the guardians of social order, and his bloodied thumb seals the terms of this inexorable contract.

The subaltern Ekalavya’s bloodied thumb (the first demand for a digit as a mark of identity) remains with us as a resonant smear of the truth of power. Ekalavya’s thumb, which guided his grip over the bowstring, can be seen as symbolic place holder for the inextinguishable recurring decimal, which makes the low born aboriginal teenager similar to the warrior princes by the same logic that makes all human beings similar or different from other human beings – their individuality. It is that complex interplay between their genetic inheritance, their social experiences and environment and their specific desires. The rounding off of this digit, this inextinguishable recurring decimal to the nearest available whole integer, marks the ‘identity’ of the subaltern, and the clear ‘difference’ of the subaltern from the prince. The bloodied smear of the truth produced by the apparatus of identification tells Ekalavya, overriding all ambiguities, who he is, who he is not, and what he never can hope to be. A technology of location, registration and the production of knowledge, does successfully extinguish the obstinate
recurring decimal. The digit is cleaved from the body, and Ekalavya, like all of us when we give up all our digits to the state, loses the means and the skills acquired with effort to defend himself.

What the technologies of identification do not take into account, however, is the ability of a person to enact different iterations of the self. Crucially, this means that the story of personhood, and the narratives of identity that gather around a person, are material available for constant re-fashioning. It means that the question of identity can also give rise to a hyperlinking of aspects of being – an expanding and cross referencing matrix of acts, attributes and attitudes that constitute the database of a person’s ‘becoming’ over time. Thus, even if Ekalavya’s amputated right thumb is an emblem of the way in which a discourse of power wishes to reduce his identity, it cannot guarantee that Ekalavya, in some other narration of his story, may not decide to learn to use his left hand.

The identity of Ekalavya, then, is something that emerges from the relationship of two kinds or enactments of selfhood. It is something that bridges the person whose right thumb got cut off and the person who decided to learn to use his left hand, and cultivate a left-handed knowledge of the world. The inextinguishable recurring decimal by its very nature resists being rounded off to the nearest whole number, and continues its fractal dance on the adding machine.

Ekalavya’s effort with his left hand, may give rise to speculations in some quarters about the distance between the ‘original’ and the ‘counterfeit’ Ekalavya – the first, the devoted disciple willing to efface himself out of deference to the knowledgeable guardian, and the second, the one who goes against the ‘moral of the story’ and rises above or beyond his ‘station’ to be something or somebody he never should have been. This is not to say that the ‘fake’ Ekalavya, who keeps the label of his name but changes the content of his person, does not have an identity. However, this identity is something that he fashions, taking something from a story already told about him and something from a story yet to be told, in such a way that it is impossible to construct a hierarchy of veracity. What he is, what he is reduced to, what he desires and what he becomes, are impossible to place along a graduated scale of more and less truth. They tell different truths about the different acts of personhood that are possible to imagine on the ground of Ekalavya.

In these random reflections, we have tried to sketch an itinerary that moves from a set of fading photographs in the basements of archives, to the thumbprints on a ledger of landholdings, to a strange story about a bloodied thumb. These digressions have been a way for us to think about the present we find ourselves in. A climate of paranoia about national security has made it possible for key factions within the Indian state to argue for the creation of a nationwide citizens identification database tied to a system of smart cards containing biometric data about every ‘legal’ Indian citizen. This apparatus, which is being touted as the solution to all problems ranging from terrorism to the crisis of identities within contemporary India, is in our eyes the worthy inheritor of the legacy that produced Ekalavya’s thumb in mythic antiquity, the measuring rod amidst the Andamanese in 1862, the fingerprints of the peasants of Jangipur in Bengal in 1858, and the system devised by Henry, Haque and Bose of the Bengal Police in 1897. In a single digital move it is able to forge a solution to the problem of identity that bridges the realities of the twenty first century, the history of the colonial era, and an ancient fable.

A continuous state of emergency (what Agamben has characterized as the state of ‘exception’ peculiar to our contemporary reality) produces its own specific sense of fatigue – an exhaustion that comes from remaining alert to yielding oneself up to acts of random or routine scrutiny. This wakefulness and watchfulness, this baleful insomniac rendition of the self into units of meaningful information, is the unexamined personal collateral damage of the rise of a global apparatus of interlocking security and
surveillance systems.

For some time now, many parts of the world, particularly those that are governed by the imperatives of the global war against terrorism, have learnt to live with a state of emergency, a moderate intensity level of panic and anxiety that makes the predatory excesses of the scrutinizing eye seem banal by the mere fact of exhausting repetition. And so, we succumb. We do so not only at airports and border posts, but also at workplaces and public spaces in large cities the world over, to routine and random searches of our persons, to scans, registrations, surveillance and recordings of the traces of our actions, our encounters with others, our presences and transiences, our itineraries, purchases and decisions, our intimacies and our public acts, our utterances and our secrets, our habits and our desires – the minutaie of all our lives.

We see surveillance, particularly new technologies such as facial recognition, retinal tracing and biometric scanning, as performing a similar set of operations to those undertaken by early anthropometry and fingerprinting. The body as data is also put to analogous uses, especially for ‘racial profiling’ at airports and other transit points, just as anthropometric photographs were used to substantiate elaborate theories of racial typage. The intensive application of surveillance technologies at public places, work, and even in the home or in the private sphere leads to a monitoring of thought and affect to a degree that suggests that we can now begin to speak tentatively of an ‘anthropometry of the soul’.

NOTES


[2] For a detailed discussion of the history of Anthropometric Photography in the Andaman Islands, and in India in general,


ABOUT THE AUTHORS

Raqs is a collective of media practitioners that works in new media & digital art practice, documentary film–making, photography, media theory and research, writing, criticism and curation.
Twenty years from now, a cell phone gently sinks to the bottom of the river. It’s one of the latest models. The clever design, trendy colours and nifty features make our cell phones look ancient. Everything about it is new. Cell phone isn’t even the right name for it. It’s hard to describe exactly what it is. So I won’t.

Anyway, this phone, for lack of a better word, belongs to Steve, who is on the bridge, feeling generally depressed, but for the moment happy to be rid of his phone. It was a powerful gesture. Steve got wired up only half a year ago, after everyone else had been wired up for years.

People used to ask: “Are you wired up?” That question was soon followed by: “Why aren’t you wired up? Are you religious? Aren’t you curious?” They looked at him suspiciously and you could hear them think: “He must be suppressing something. Definitely some sort of denial.”

Getting wired up means having all sorts of sensors either implanted or attached to your clothes.

They’re connected to your cell phone to monitor heart rate, temperature, the sound of your voice, the position of shoulders, hands and feet, chemicals in the blood and what not. These sensors have been around for decades, even small portable ones. Their first use was medical:
monitoring health and medication, correcting bad posture and compensating all sorts of disabilities. They had also been used successfully in psychology: monitoring body language, metabolism and chemicals in the brain. Data was gathered from many patients over time, giving new insights into psychological disorders. But it only took off when some clever marketing guy, later to become yet another trillionaire, realized their combined potential for the consumer market. When people started using their game consoles to train their memories and concentration, he thought: “Maybe they’d like to know about their emotions”. By then, sensors and software could read people like a book. This marketing whiz quickly teamed up with academic researchers and major producers of sensors. And suddenly there was this huge company selling ‘insight, one-ness and emotional connectivity’. It started an industry of self-reflection, mood blogging, mood matching, real-time automated flirt coaching and some embarrassing employment relation strategies.

Steve, however, was reluctant. He didn’t need any software to tell him how he felt. He was depressed. Three years after losing his job as a garbage collector to some smart-ass system, he was definitely depressed. But he was determined to handle it on his own, as he always had. Then Steve got even more depressed. When he finally decided to get help, he skipped the on-line forums and arranged a face-to-face talk with an old fashioned trained expert: R.L. Steinberg, MD, psychiatrist. Doctor Steinberg’s first question to Steve was: “Are you wired up?”. “No, I’m not”, he sighed. “Is there any particular reason you’re not wired up?”. At this point he used to express his concern about privacy and security, but that argument didn’t seem to convince anyone anymore. “I don’t need it. I know how I feel”. “I see. Of course self-reflection is the best tool. And I’m sure we can understand your situation by discussing it here. But some data would be very useful. You see, the way we see ourselves is often different from the way we actually behave. When a child is frustrated, it doesn’t say ‘I’m frustrated.’ It just starts kicking things over. It needs to be taught then and there, by adults who understand this behavior, that what he is feeling is frustration and it can be expressed in different ways. Even adults have difficulty understanding their emotions at some point in their lives. They mostly need feedback from others, but they also gain insight into themselves from a higher perspective, so to say, from objective long-term observation of their behavior. It’s no magic, but a useful tool”. “I see”. “I suggest you get wired up without any interpretation software. You’ll just get the sensors and leave the rest to me. All that software just oversimplifies everything anyway. We can look at some of the data during our meetings, if need be”.

So Steve got wired up. He met doctor Steinberg every Tuesday and promised to follow his advice on exercise, sleep, diet, etc. But he couldn’t get himself to actually do all those things. The meetings with doctor Steinberg, who confronted him with data to prove his lack of motivation, got more and more embarrassing. Eventually he stopped seeing him. Instead, he downloaded the latest interpretation software. During the installation he opted for ‘brutally honest’ instead of ‘constructive’ or ‘positive’. Now he wasn’t depressed. He was ‘lethargic, unconcentrated and easily agitated’. “So be it”, he thought as he scrolled through the data on his cell phone. It also said “hungry”. “Am I hungry? Well, come to think of it, I am.” And he told his phone “I’d like to order a chicken curry, anywhere”. It replied “Chicken curry has been ordered at Phonsawan, located ten minutes from here”. His left shoe started vibrating, so he turned left. As he walked to Phonsawan for the first time in his life, he thought: “Funny how quickly you get used to this stuff. Three months ago, when my shoes first started vibrating, my first impulse was to kick them off. Now I’m not even aware of them. I just turn left or right because that’s where I need to go”. He read somewhere that shopping malls are installing vibrating floors just to lure customers into expensive
stores. He even checked to see if it was a hoax. One site strongly denied these claims, but it seemed to be sponsored by the same shopping mall. That didn’t have to mean anything though, because those ads are placed anywhere automatically, or so he thought. He didn’t feel like digging any deeper. True or not, he decided vibrating floors in shopping malls were very unlikely. Right then, both his shoes vibrated shortly, indicating he had arrived at the restaurant, just as planned. He wasn’t at some expensive store and this somehow proved his point.

The rest of the evening was spent eating curry, staring at the waitress, ordering beer, staring at the waitress and ordering one or two more beers while staring at the waitress. In the end Steve felt better than after any meeting with doctor Steinberg. As he walked out of the restaurant to cheerfully follow his “good vibrations” home, he felt the urge to check his mood on his cell phone. “Happy” it said. “That’s right”, he thought, “I know it. I feel it. Who needs these gadgets”. “More details” it said. “Ok then, get me the details”. A warning screen appeared. He clicked “ok” and read: “Happy, intoxicated, consumed too many saturated fats, sexually aroused”. “I beg your pardon ?”. Steve asked, clicking on. “Repeated sexual response when in contact with female x”. Up came a chart showing his hormones, blood pressure, some correction for the influence of alcohol and this “female x”. He clicked on, passed some warning screens about revealing his identity and requesting information from other people. Then it said: “Annoyed”. “I’m not annoyed, am I ? Just curious”. The next click made it all too clear. There was the picture of female x, the waitress from Phonsawan restaurant: “Tired, embarrassed and annoyed when in contact with Steve Smith”. Steve felt a dark, numbing heaviness come over him. “That’s how she saw me. And that’s what I am. Annoying”. He stood still, ignoring the vibrations in his feet. “That’s what I am”, he repeated, as he slowly fiddled with his cell phone. “Connection terminated”. He sank to the ground as he realized what had just happened. He had asked the waitress what she really felt for him. She must have read his request and thought “What a creep”. She had rejected him. Slumped on the pavement, he slowly clicked “Exit” until the main menu appeared. “Current mood: depressed”. Some time passed. Steve still felt depressed and rejected, as he suddenly stood up and told his phone “Take me to the highest public area nearby”. His right shoe vibrated and off he went. This was an old habit. At times when he was most down, he’d wander through the city, late at night, looking for certain places. Places he could jump from. Not that he ever actually did. He knew he never would. But just standing there, on the edge, feeling the wind, having the option to jump, somehow everything made sense to him. He was aware, awake, charged, relieved, comforted, everything. No software would make any sense of it, but that was how he was.

He felt determined as he walked toward the city centre, even though he didn’t know where he was going. Being guided by vibrations in his shoes was a little different from the old, long walks to nowhere, but he went with it. It was cold and windy at the bridge. Perfect. Walking toward the middle, he started wondering how he felt. Was he relieved? Comforted? That was when he decided to chuck his cell phone in the river. He swung his arm backward, which was interpreted as “Greatly surprised”, and he flung his cell phone as far as he could. It was a powerful gesture. The device made a disappointingly small splash, but Steve was relieved. “I am relieved”, he thought, “Definitely relieved”. His cell phone slowly sank deeper and deeper to the bottom, still giving off a blue glow. It silently landed right next to another cell phone, which also gave off a blue glow. This second cell phone belongs to Sandy, who is also on the bridge at this very moment, feeling both depressed and relieved. As she climbs the railing to look down at the water, she notices Steve, balancing on the railing, walking slowly towards her. Meanwhile, at the bottom of the river, their phones are frantically trying to interpret their increased heart rate and a sudden surge of dopamine.
Marcel van der Drift is an artist/programmer working on storytelling, co-creation and community sites.

The images on the next few pages are all from the San Francisco Emotion Map, 2007. The images show the final printed map as well as documentation from the process of working with people to gather the biodata.
It used to be thought that photography, as a kind of automatic mapping, could provide an objective view of the world. Now we are aware of the power of framing and other interventions between what is out there and what is captured in depiction. Perhaps even perception, let alone depiction, shares this subjectivity? The Sapir–Whorf hypothesis holds that different cultures actually see the world in different ways, as evidenced and influenced by concepts in their languages – though this idea has been derided, for example by Pinker (Sapir 1924, 1949; Whorf 1956; Pinker 1994:62). A key difficulty is that the word subjectivity is bandied about without care for its different meanings and without distinguishing the many forms it takes in the graphic image. If into this muddle we introduce the idea of interactivity, still greater confusion could follow. What follows is a way of bringing some order to different kinds and levels of subjectivity by documenting how they are reflected in forms of graphical mapping. In the process, it will become clear how significant is the change in media technologies from those bound by the conventional rectangles of the page and screen to media which are interactive, pervasive, multimodal, physical and social.
Geographic maps often appear to be among the more objective kinds of graphics. We think of them as representing in a rather direct way something in the world. However, as semioticians from Pierce and Saussure onwards have pointed out, words, maps or even pictures do not represent things, but shared ideas of things. Even so, the very form of a map, with its way of viewing the world from an equal distance above all places, seems to carry a sense of objectivity. Contrast this with the strongly located stance of a perspective view: in such a view it is obvious that we are looking at one viewpoint – literally and perhaps metaphorically – onto a scene. It is a place seen by an observer, while a map shows a place that seems to exist independently of being looked at.

Despite their apparent message of objectivity, maps select and even distort, because maps, like all images, are made for purposes, and those purposes influence the final form (Boyd Davis 2007). In some cases, the distortion might be for simple practical reasons: streets in an atlas may be made broader to accommodate street names at legible sizes. In most maps, significant features are picked out in darker tones or stronger colours depending on the intended uses of the map: this kind of graphical selectivity is one of the services we expect the mapmaker to provide. While aerial photography presents everything which the camera sees, prioritising nothing, a well–made map serves its purpose precisely through its selectivity. We can click back and forth between two representations in Google Maps to get the complementary benefits of either: the all–seeing, unknowing photographic image of the camera, or the intentional communication of the drawn map. There are cases, however, where the selective processes which a map represents are not so readily acceptable. Mark Monmonier has published a number of entertaining books, including the canonical ‘How to Lie with Maps’, on the distortions introduced, sometimes with malicious motives, in all kinds of geographic mapping (Monmonier 1996:186). Aside from these deliberate and conscious interventions, in some ways more profound distortions are those which pass unnoticed because they embody a shared cultural perspective which makes them transparent. Ted Nelson argued that a terrestrial globe (scale model of the earth), is a good example of directness, untrammeled by metaphor or other representational filtering: “A globe does not say “Good Morning”; it does not bother you with menus, icons or prompts. You turn it and move your head to the most useful position for overview or detail, that’s all ” (Nelson 1990).

Yet even a terrestrial globe does not have the purity that Nelson hopes. The northern hemisphere is conventionally at the top of these devices, placing the developed, map–making world on top, and the mapped, under–developed world beneath. It is hard to recall that there is no ‘right way up’ to the globe we live on. When the globe is projected onto a flat surface, distortion becomes inevitable and the merits of the different projections are hotly contested (Snyder 1993). A technical necessity as simple as framing can have unacknowledged consequences for how we see the world. So map–making, even when apparently most objective, is, like any representation, not the straightforward transferral of visual data to a surface that it might seem. Representation chooses what it measures and conveys. And already in this brief discussion, different forms of subjectivity have surfaced. The most basic is that subjectivity arising from who and what we are, and from the nature of representation, which prevents us from ever making maps or any other images which are exact equivalents of what they represent. Overlayed on this is the subjectivity created by the shared culture of large groups. Only encounters with other cultures, across space or through time, draw attention to its existence. Often, dominant groups assume that the shape of their world is the shape of the world. But there is increasing recognition that other groups live in other shaped worlds which can be mapped in different ways.
The shape of the world changes depending on who you are and what you do. A recurrent motif in industrial societies has been to see space as increasingly compressed by the new ease with which it is traversed, and this has often been described as though it were the same for all observers. Thrift (1996: 264-265) considers this compression concept to have been associated with stagecoaches, railways, bicycles, the post and the telegraph: certainly the railway age has many such references. For Heine, (quoted in Schivelbusch 1986: 37) "The elementary concepts of time and space have begun to vacillate. Space is killed by the railways. I feel as if the mountains and forests of all countries were advancing on Paris". For Williams (1852: 284-85) "The extremities of the island are now, to all intents and purposes, as near the metropolis as Sussex or Buckinghamshire were two centuries ago". And the hyperbole continues: "Lille and Brussels will be within striking distance for daily commuters" according to a 2007 newspaper article on the newly opened cross-Channel rail link at London's St. Pancras station. This is one kind of subjective mapping, where increased speed of access makes the world a different size and shape. However, this is more subjective even than it seems, since it is experienced differently by different people. Feminist geography has provided a valuable critique of the lazier generalisations concerning time-space compression. Massey (1993) was among the first to point out the unreasonableness of suggesting that spatial compression was the same for everyone at a given historical period, regardless of wealth, gender or other factors. She highlights how the degree to which we can move between countries, walk about the streets at night, take public transport, or venture out of hotels in foreign cities, is not influenced simply by universal changes such as the flow of capital or the availability of technology. In the same volume, Rose takes exception to just that kind of apparently objective mapping described above, arguing that "This transcendent, distanced gaze reinforces the dominant Western masculine subjectivity in all its fear of embodied attachment and in all its universal pretensions" (Rose 1993: 71). One alternative lies in the use of time-space mapping, a conscious attempt to reintegrate cultural subjectivity – in this case women's spatial mobility, their access to resources, and the power relations which constrain these into representation.

"Feminist geographers have used time–geography to detail these processes, because of its sensitivity to the routines of women’s domestic, everyday lives. Time–geography traces the routine paths of individuals in time–space and is especially interested in the physical, technological, economic and social constraints on such movement. It claims to demonstrate how society as a whole is constituted by the unintended consequences of the repetitive acts of individuals". (Rose 1993: 76)

Such work is continued by Mei-Po Kwan at Ohio State University, who has argued that Geographical Information System mapping – often regarded as anti-feminist because it appears to confirm an 'objective' map of the world while really being nothing of the sort – can in fact be harnessed to investigate the subjective world of minority groups. It should be noted that these are allocentric representations – ‘from the outside,’ looking on at the aggregated space–time paths of cultural clusters: they are not attempts to see the world from within as it may appear to the subjects themselves. The features of the landscape are still separated by their conventional Cartesian distances.

In other mappings, Cartesian distance is replaced by subjective measures representing other kinds of accessibility. For example in a map by Oskar Karlin, the lines of the familiar London Underground diagram are distorted to represent one additional dimension – the length of time it takes to reach each station from Elephant and Castle, an inner-London station south of the Thames. Karlin also alters the colours of the lines to represent each line’s average speed. Even the classic Beck London Underground map uses distortions, to serve practical purposes and incidentally to convey a message, and these start to embody a subjective point of view expressed through the geometry. The central area of the London Underground map is enlarged in relation to the periphery. While this is largely to solve a practical
problem of accommodating the greater density of stations in that area, it also has the effect of giving greater importance to the central region, rather as a fisheye lens does for a photograph. Physically peripheral areas become metaphorically peripheral too. This is an analogue of subjective vision, in which what we attend to is in the centre of the field of view where visual discrimination is finest, while things not currently of importance are confined to less well defined regions at the edge of sight. The subjectivity inherent in the idea that geography depends on where you start is dealt with by another method in space syntax diagrams (Hillier and Hanson 1984).

Two rooms of a building may adjoin in a plan view, but be far apart in a space syntax diagram if there is no direct connection between them. Markus among others has used this to show how buildings may offer very short routes to sites of power, such as the ready access to doctor’s rooms in a health centre for the doctors themselves, compared with long and complex routes for others – such as the patients (Markus 1993: 14). Like the work of the feminist geographers, these maps reclaim mapping for those whose view would be lost in those so-called objective mappings which are really mappings for the majority or those in power. Though space syntax diagrams augment traditional topography with a topological diagram, showing how the connections to adjacent spaces present themselves when approached from one particular starting point, they also take up a viewing position ‘outside’ the subjective, depicting that subjectivity from without rather than within.

Perspective itself, of course, even when not in the extreme form of a fisheye view, prioritises what is near over what is far, and does so through selection of view. In 2005, the BBC chose to replace its traditional weather map of the United Kingdom with a perspectival view onto a VR model. Since any such view must be seen from somewhere and, perhaps inevitably, the designers chose to view the nation from the south, the result was that Scotland, now furthest away, became little more than a distant blur. The BBC Trust criticised these forecasts for breaching the corporation’s duty of impartiality (BBC Trust 2007: 53). Such subjective tendencies in perspective were earlier used consciously and humorously by Saul Steinberg in a 1976 magazine cover mocking the typical New Yorker’s alleged view of the world. Ninth Avenue looms in the foreground with Tenth Avenue just behind; a short way further off is the Hudson river; beyond in rapidly decreasing scale and definition is all the remainder of the United States, equal to the size of just three New York city blocks; finally beyond the Pacific lie China, Japan and Russia, vague mountain ranges on the horizon (Steinberg 1976). The subjective view of the Londoner or the New Yorker is represented from within, by a point of view onto the world.

Interactivity allows the map-maker to drill down, beyond the subjective view of cultures and sub-cultural groups, to the view of the individual. The useful properties of visual distortion for this purpose were explored several years ago by emulating in software the subjectivity of attending to what is central. Within a hierarchical tree of information, as visualised by Lamping, Rao and Pirolli (1995), users could change their subject of attention either by clicking on any visible point to bring it to the centre or by dragging a distant part of the information landscape to the central position, most detail being allotted to the centre, least to the edges. In this way topics close to what interests me most at the moment are prioritised while others fall away towards the fringes. The topic map is visually sensitised, not only to the subjectivity of the individual, but to that of the moment, a kind of temporal subjectivity.

Inspired by Karlin’s Underground map described above, Tom Carden (2005) has produced a dynamic Travel Time Tube Map in which the geographic layout of the stations is distorted on demand to represent travel times from any station nominated by the user. Once more we are looking at subjectivity from the outside, but now designed, through interactivity,
for the individual’s momentary needs. In a sense, the ability to use the map to see the network from any station, rather than just one, re-introduces an element of objectivity, since now the map behaves appropriately when operated by any user for whatever location; but the most important feature for this discussion is the way in which responsive interactivity becomes the means for users to see their own map, configured to their interest. This is a crucial aspect of modern subjective mapping: instead of being locked to a single subjective interpretation, it is momentary, contingent on needs expressed through the medium of interaction. This does not lead to the ‘death of the map-maker,’ any more than the responsiveness of interactive digital texts led to the ‘death of the author’ as some at one time anticipated. However, it does alter the respective roles of map-maker and user. Interactivity means that authors are creating opportunities for the user’s action as much as they are communicating to the user. As in other areas, new map technologies have increasingly made it possible to deliver in practice the otherwise largely metaphorical ‘open work’ (Eco 1989) in which the work is a field for action as much as a form of presentation.

The increasing responsiveness of digital systems creates many possibilities for implementing temporal subjectivities. Like Carden’s Tube Map, some of these are based on an essentially conversational model of interaction in which each of the user’s successive ‘questions’ – expressed by interaction events – is answered in turn by a response from the system. Work at University of Maryland over many years has aimed, by providing a responsive interface, to enable users to explore complex data sets more rapidly and effectively than with static systems, and some of this work has dealt specifically with maps which change according to need. In some cases, discrete inquiries (such as by clicks of the mouse) are replaced by smooth, continuous change. Work of 1994 showed the use of on-screen sliders to move through a virtual additional dimension of colour in maps of the United States, allowing the user to not only see but in a sense ‘feel’ the patterns of health data and their correlation with income and other factors (Plaisant and Jain 1994). This has been characterised by Peuquet (2002: 157) as playing with maps to see what latent relationships emerge.

Of course now we have the ability in everyday SatNav systems to go even further beyond conversational models of interaction and get continuous feedback to the recurrent questions where am I? And what should I do now? The global positioning system calculates a position on the Earth’s surface in relation to the heavens. The method is analogous to navigating by the stars, though these stars have been installed by us in the form of satellites. When GPS is embedded in a personal portable device, it effectively positions an individual in relation to the cosmos. But while the technology itself is highly objective, applying the same rules to every GPS client, it is also intensely personal. This is my position, mapped for me on my device. It is also essentially based on the idea of now: like earlier navigation technologies, GPS is reliant on knowing the correct time. So the map is made not only for me, but for me now at this moment.

The availability of inexpensive, lightweight GPS devices has encouraged the development of innovative location-based projects. A small number of these add to location-sensitivity a responsiveness to other forms of dynamic personal data. Christian Nold’s Emotion Map investigations, described elsewhere in this volume, present the individual’s subjective state, measured using Galvanic Skin Response as an index of arousal, within the map of a district. Each map is therefore a personal record of an emotional as well as a physical journey. These subjective mappings are constructed retrospectively, allowing subjects to reflect on their experience – and those of others. In addition, the records of these personal journeys can be aggregated into a composite map which represents the emotional engagement of a group, showing where the community feels stressed or mapping becomes pervasive, multimodal, social and personal.
excited, so both personal and group subjectivities are depicted, and both incorporate transient temporal phenomena.

A parallel approach is taken in the project ‘Ere be Dragons (Boyd Davis et al 2007). The user wears a heart-rate monitor connected to a smartphone or PDA with GPS capabilities. Here the mapping takes place live, as a part of the experience of moving about in the world. During a walk, an on-screen landscape is built which corresponds spatially to the real one around the player. At each stage in a journey, the graphical presentation of the route reflects one of five states. Squares of flourishing landscape are displayed where the walker achieves their optimum heart-rate (previously calculated from their age or their resting heart-rate). Either side of the optimum, the squares will be desert-like if the rate is too low, or grimly forested if too high. Beyond these zones the whole behaviour of the landscape alters, darkening and eventually disappearing. A distinction made by Schön (1983) highlights an interesting difference between Emotion Map and ‘Ere be Dragons: that between reflection-on-action and reflection-in-action: in the latter, the ongoing experience is subject to constant feedback, rather as when a designer draws, and both observes and responds to the drawn marks in a continuous cyclic experience. Because action and reflection are almost simultaneous, users modify their behaviour in the light of the current state of the map. Such projects are special cases of external cognition (Scaife and Rogers 1996) where, rather than the output representing processes of the mind, it as much represents those of the body. By constructing cognitive artefacts for our own perception we became capable of processing the knowledge they represent in alternative ways which are not easily accessible while they remain internal. The territory as mapped is an externalisation of something which belongs to the user. When this is presented to the user on a device held in the hand while walking, as a kind of prosthetic extension, the element of personal, temporal subjectivity centred on the subject is brought to the fore.

These experimental projects take subjective mapping further than it has gone before. This discussion began by emphasising how all map-making, however apparently objective its motivations, is affected by considerations which give it characteristic forms. To represent is to select, interpret, translate, transform: this is the first level of subjectivity. Next, selections and distortions which belong to whole cultures and to groups and subgroups are evident – these are the cultural subjective and sub-cultural subjective. The latter may take on a conscious socio-political aspect, as in feminist geography, or may simply reflect in some way that the world is different depending on who you are and where you start from. Interactivity introduces the possibility of customisation to the individual and to the time: the individual subjective both spatial and temporal. With the advent of portable interactive technologies sensitive to multimodal inputs, what matters to me now at this moment in my current location and circumstances can become central. This introduces a form of subjectivity we could call the egocentric subjective, in which my location and other aspects of myself impact decisively on the representation. This is perhaps the furthest that subjectivity has ventured so far, but technological change continues its interplay with altered perceptions of geography to produce unanticipated forms of mapping.

Dr. Stephen Boyd Davis is the Reader in Interactive Media at Middlesex University.


The images on this and the next pages are all from the Stockport Emotion Map, 2007 which was commissioned as a public consultation project by the local council and an urban developer.
people can access without money and use as they like.

Stockport's green spaces in the centre of...r violence including alcohol consumption, stealing and knife crime.

Middle class youth activities and services to bring them to the pub. Most of these emphasise the y.

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**BLANQUI’S PARADE**

**ROB VAN KRANENBURG**

It was, as some Parisians later claimed, a perfect afternoon for a stroll in the Tuileries. Finally managing to escape the oppressive indoor drudgery to which they had been confined for so long, if not the whole of Paris, than certainly a specific political cross-section of the Parisians, welcomed this sunny January afternoon with a ferocity normally reserved for their traditional afternoon apéritif. The Jardin des Tuileries had always been, as it was to remain, a popular resort and few people could resist the temptation to walk past the Jeu de Paume towards the Place de la Concorde to go for a café at the Champs Elysées for although it was sunny, it was till bitterly cold. They could still gaze upon the Tuileries Palace, built by Catharina de Medici in the 16th century, it was not to survive the year 1871 when it was thoroughly plundered and destroyed by the Communards. But now it stood firm testimony to the power of Kings and Queens over their subjects. A monarchical power that was, in the shape of Napoleon III, making a desperate attempt to survive by transforming an authoritarian Empire into a liberal one, a tactical move, which, as we know, did not succeed and led to the proclamation of the Republic on September 4 1870. But to the people who strolled on the Champs-Elysées that fateful January afternoon this was still the Second Empire and they made no conscious connection between the amazing spectacle they were about to witness and the political earthquake that lay only a few months ahead.

A few weeks earlier, on January 10 1870, Victor Noire, a journalist from the extreme republican newspaper La Lanterne, was killed by Pierre Bonaparte, the Emperor’s cousin. This event profoundly disturbed the ‘eternal’ conspirator Blanqui whose revolutionary republican activism had earned him a wide range of dedicated followers. He suddenly realised that he only knew his lieutenants personally, and had never actually seen the men they commanded in his name. In effect, he did not even know their exact number. Desperately wanting to assess the strength of his troops personally, he contacted his aide-de-camp. The problem was obvious. They could not organise a parade of revolutionaries as if it were a regular military army. The solution, however, was equally obvious. You can hide a parade of revolutionaries in a parade of afternoon strollers. He said farewell to his sister, put a gun in his pocket and took up his post on the Champs-Elysées. There the parade of the troops of which he was the mysterious general would take place. He knew the officers, now he would see the men they led for the first time, marching past in proud display. Blanqui mustered his troops for inspection without anyone suspecting anything of what was actually happening. In the crowd that watched this curious display Blanqui stood leaning against a tree watching his friends silently approaching in columns. The promenade was momentarily transformed into a parade ground. In the very act of moving, walking men became marching soldiers. Marching soldiers only had to drop out of line back into the crowd to be transformed into walking men again and ultimately into afternoon strollers on a sunny January afternoon. The Blanqui parade dispersed as swiftly as it had emerged. The unsuspecting onlookers were left with their bewilderment, in doubt as to what they had actually seen. They had witnessed a powerful manifestation of the existence of another ‘society’ that had no institutional place in the political organisation of their time. The covert world represented by the Blanqui parade erupted for a brief moment in the overt world at a time and place when it was least expected. In that brief moment, its presence deliberately unmasked, the covert parade coexisted
alongside the overt promenade, and it is hard to tell which was the more real as the physical acts of strolling and marching seemed to blend into an harmonious simultaneity, thus revealing the frightening prospect that they might be interchangeable. In the blurring of the boundaries between marching and walking we are made aware of how we are positioned within a field of vision and that we might able to construct meaning through experiencing the transgression itself. At the same time, however, experiencing the transgression strengthens our notions of the very acts themselves, we translate the momentary – the simultaneous blending – into our everyday notions of walking and marching. In the very moment that we gain the opportunity to make sense, we lose the opportunity to integrate it fully into our own ways of seeing.

ABOUT THE AUTHOR

Rob van Kranenburg is an organiser, investigating the moments of emergence of new relationships between existing nodes.

The images on the next few pages are all from the Greenwich Emotion Map, 2005–2006. The images show multiple views of the final printed map.
What is the Greenwich Emotion Map created?

How was the Greenwich Emotion Map created?

Physical space

What is the relationship between emotions and physical space?

by Christian Nold

GREENWICH EMOTION MAP
I strap a small device onto two fingers of my right hand. It is a ‘Galvanic Skin Response sensor’ that measures my emotions and is connected to a Global Positioning System so that I can measure my physiological reactions to the environment I am walking through. The peaks and troughs, on a resulting map record my arousal levels, feelings of excitement and indifference.

The couple I am walking with live in the nearby Millennium Village. We are walking around East Greenwich, an area of London that has changed dramatically over the past 50 years and is due to morph again over the next twenty-five years into “A new 1.4 million square metre master-planned community.”

The Millennium Dome, now branded ‘the O2’, is being developed into an entertainment, music, sport and leisure attraction by the American company, Anschutz Entertainment Group. Just beyond the Dome, the old hospital in East Greenwich is being converted into housing by English Partnerships. It is a strange environment, a combination of desolate wasteland, manicured park lawns and regimented lines of perfectly pruned trees. I used to bus or walk through this dormant prime real estate on my way to the station everyday when I lived near here. Large white domed structures hide behind high blue fences where I used to imagine secret tests and inventions were taking place. Now, well-established trees and shrubs have grown through the old concrete of these abandoned car parks. As we walk around we discuss the changes in the area: the Beckham Football Academy; the active industrial buildings and factories; the first communications cable to be laid across the Atlantic and the progression of technologies since. Is this just like any other walk on a summer’s afternoon? What is the significance of us mapping this walk? Who will use the data we are producing?

The experience I am describing was part of the Greenwich Emotion Map, a project by Christian Nold and one element of his ongoing Bio Mapping project. The final printed map includes the emotion data as well as images of the places visited by people on their walk, annotated with descriptions of their experiences. Christian was commissioned by Independent Photography (an arts organisation based in East Greenwich) as part of their programme Peninsula.[1] While Peninsula did not receive funding directly from the regeneration funds in the area, it was seen as a valuable asset to its development, as a member of the Greenwich Peninsula Partnership points out: “The role of projects like Peninsula is to take the fear away from these changes by getting people involved in what’s going on locally ... People don’t like coming to meetings, it’s a way of breaking down those barriers and giving people a voice... Independent Photography are like the conscience of the area, (a constant reminder that) it’s not just about maximising profits – it’s a really good way of ensuring that that conscience is always there...”. I will use the Greenwich Emotion Map as an example of a publicly funded art project in order to sketch a wider context in which much art takes place in the UK today and explore the possible meaning of criticality for an art practice that is approved, supported and funded to aid social change.
Socially engaged art practices are influenced by histories of activist, community, performance and conceptual art, all of which have challenged (to varying degrees of success) the notion of an institution of art based on individual production that remains at a critical distance from daily life. There are legacies of artists opening up their work to involve participants throughout the 20th Century. Artists have used people in the making of their own work, for example, when communities in Pasadena and Los Angeles built walls of ice for Allan Kaprow’s Fluids happening (1967) or when 30 workers were hired by Santiago Serra who arranged them in a line according to their skin colour (2002). Artists have also tried to hand over authorship such as Yoko Ono in her instruction pieces (1961-2) or through the work of Tim Rollins and K.O.S. (1980’s-now). Many projects that are considered ‘socially engaged’ today embody a variety of types of participation and complex networks of ownership (the same project may be at times participant-led and at others artist led). Indeed, this is carried over into cultural policy in the UK, which could be seen to be reliant on the somewhat contradictory notion of art as being something for everyone as long as it is judged as the produce of individual artistic genius.

Increasingly in the UK, people working in diverse aspects of contemporary urban society, from property developers to park wardens are turning to the arts for new ideas, regeneration, problem solving and community bridge building. The employment of artists in these (traditionally non–art) fields, where there are other issues and agendas at stake, is becoming the norm. Alongside the high profile, large-scale capital projects that emerged from the Lottery Act of 1993, there has been a spate of commissioned, community-based arts projects promoted as the road to urban renewal. These projects derive from New Labour cultural policy that has understood art and culture as central to making society better. According to a recent report by Ixia [3], approximately 61% of Local Authorities in England have public art policies linked to the local planning system and increasingly other public sector and commercial organisations are commissioning public art, such as the commercial developers Land Securities. The evaluation of PROJECT [4] investigated the role of art in regeneration finding that: “Public art was seen ‘by some developers as bringing in to a scheme elements which give distinctiveness, character and identity, because these are indices of value and quality, and therefore add commercial value’. For others, public art was seen as a way of improving a development’s chance of receiving planning permission and as a means of engaging local communities within the process of developing a regeneration project” [5]. While the links between art and social inclusion remain, “Social inclusion and the arts work together. DCMS aims to extend access to high quality arts. To achieve this, issues of social inclusion are at the heart of much that DCMS does ” [6], the recent McMaster report highlighted a shift in policy towards ‘excellence’ and ‘judgement’ of art over ‘instrumentality’ and ‘monitoring’. The focus is back on the art rather than using art as a tool for social change: “The driver must be not the achievement of simplistic targets, but an appreciation of the profound value of art and culture”. Having said that, McMaster also asks that: “Artists, practitioners and cultural organisations need to explore ways of communicating more effectively with their audience” [7].

Despite this slight shift away from the instrumentalisation of culture, short-term arts programmes in deprived neighbourhoods continue to be endowed with the potential to reduce crime rates, build private/public sector partnerships, improve community relations and create new resources. These projects are based on the notion of the artist as an external agent, able to enter into a context with fresh eyes, offering ideas and solutions. When commissioned as part of regeneration schemes, a socially engaged art project can also become a lucrative marketing device to promote an area to potential businesses and buyers. Art is assumed to provide a positive transformation from bad to good, unbearable to bearable, socially excluded to included. This simplistic stance brushes over the complex, problematic relationships embedded in urban change in the
quest to create a glossy picture of participation and collaboration. Certain artists are now engaged in a serious and rigorous critique that reflexively approaches the role that cultural work has in creating the illusion of ‘social inclusion’ while actually increasing the division in wealth and poverty.

One of the loudest criticisms of this current situation (that shares some of the suggestions put forward by McMaster) lambastes the instrumentalisation of culture and calls for the reclamation and recognition of artistic autonomy. In their recent essay, Championing Artistic Autonomy, (2006) The Manifesto Club, for example, argue for artistic autonomy from “physical, political and financial restraints” (in order for the artist to) “realise a creative vision” [8]. The Manifesto Club was set up to “challenge growing policy regulations, instrumentalism and market-based thinking, all of which contribute to a culture of restraint”. My question is, how does this fight for autonomy relate to an art practice that disputes the status of singular authorship of the artist and seeks to go one step further than challenging this ‘culture of restraint’ by coming up with alternatives to effect change? Rather than react to the current climate in a way that reclaims artistic autonomy, I would argue there is a need to urgently review the politics of social engagement through art by re-examining the critical potential of a socially engaged art within this funded system of regeneration.

STRATEGIES OF CRITIQUE

In the next section of this essay I locate the critical aspects of the Greenwich Emotion Map along four co-ordinates of criticality. These four analyses are based on my interpretations of three descriptions of public art by Suzanne Lacy, Mark Hutchinson and Declan McGonagle (each of whom break down their descriptions into four positions, stages or dimensions) [9]. They are: anthropology, reciprocity, co-production and (f) utility. Rather than insist that one mode of working is better than any other, I conclude by insisting on a combined approach as demonstrated in the Greenwich Emotion Map.

ANTHROPOLOGY

This approach, takes as its model the anthropologist or ‘participant observer’. By entering a community to investigate it, the artist collects readings, recordings and evidence and turns this into their own artwork which does not filter back into the community. The work is about a certain community rather than made with or for a certain community. This approach can be seen in State Britain by Mark Wallinger (2006), for example, where the work directly references Brian Haw’s Parliament Square protest but did not involve him. This particular approach does not involve a critique of the anthropologist’s (artist’s) own position. The focus of attention is elsewhere, on the subject matter itself (for example, the issue of freedom of expression and civil liberties in the case of State Britain).

This approach prioritises a notion of artistic autonomy but does not focus on the artists own implicated role in both effecting and being effected by the community she/he enters. This way of working acknowledges the power relations between the professional, paid artist and unpaid subject and does not try to hide this fact. Indeed, this rejection and distancing from the everyday could be seen as a repost to the commonly adopted phrase
in current social and cultural plans and policies: the use of art. By extracting the issues away from the place they came from, the work is presented as having no direct use-value for those communities who supplied the source material. This is not necessarily a negative aspect and may indeed be a more honest approach than one that attempts co-production. We can see an element of anthropology in the Greenwich Emotion Map as Nold, coming from outside of that community, adopts the role of facilitator, providing the tools to gather information about a group of people that he then collates, designs and presents as an alternative map of the area. While the map is authored by Nold (his name appears on the front of the map), the numerous participants are acknowledged inside and indeed, the contents of the map is reliant upon them.

This stage builds on the anthropological approach in that an artist demonstrates some kind of responsibility towards the community they are working with/on whilst retaining authorial control. Martha Rosler points out how some people prefer to let communities or participants author and lead projects (removing the artist-as-author from the centre of things) while others present any interaction or community liaison as a fictionalised representation (re-establishing authorial control). Rosler finds it hard to agree with either of these stances, preferring a more complex dynamic between people [10]. This could also be the case with the Greenwich Emotion Map. Nold incorporates other people’s stories whilst mapping their emotions and creates a collective narrative of the area. During this stage, the artist becomes more self-critical of her/his own position but this ability or permission to be critical often remains limited information for the amusement of the artists only. This has been termed by Lefebvre as ‘critical knowledge’ [11] and refers to the idea that those with ‘critical knowledge’ are those who are ‘in on the act’. Are the participants of Emotion Map critically engaged with the tools and conceptual aims of the project or are they just using those tools without that bigger picture in mind?

‘Critical Knowledge’ that remains with the artist can sometimes be cringe-worthy to watch, for example in the film Czech Dream (2004), a series of posters advertised the opening of a new cheap hypermarket on the outskirts of Prague where, during the grand opening, the film makers Vít Klusák and Filip Remunda documented the disappointed faces of expectant shoppers as they ran towards its fake façade. In this instance, the film-makers have the upper hand and in the making of an interesting film, patronise the jubilant Czech shoppers looking for a bargain. The critical engagement remains the priviledge of the filmmakers and viewers of the film afterwards. It is hard to say who of those people who turned up to the staged opening had the ‘critical knowledge’ to reflect on how the project drew attention to the reactions to rapidly advancing capitalism in Eastern Europe, and how many were sucked into the prank and turned up to the opening of a new hypermarket they saw advertised to do their weekly shop. Maybe the ‘critical knowledge’ comes later, once you have calmed down and got over your embarrassment, shock or rage that comes with being fooled.

In a reciprocal arrangement, however, artists and participants are able to recognise (and exploit) the needs and expectations of each other. An artist may use people for the making of their own work while a participant may use the project for their own personal or financial gain. According to Nold, the Greenwich Emotion Map asks: “How will our perceptions of our community and environment change when we become aware of our own and each others intimate body states?” One of the participants in the project expressed how as an older person she had not had much contact with technology and that the project made her aware of how this technology in the hands of the wrong people has different connotations. She talked about how easy it is for the powers that be, to know who you are, where you are and how you feel. This reflects Nold’s intentions for the project in finding a new way of using this technology,
reclaiming it and devising alternative ways of mapping an area. According to another participant, however, the technology became redundant after their direct involvement in the initial mapping exercise and did not provide any ‘conclusions or directions’.

This leads us to deduce that participation in an art project does not automatically result in the politicisation and activation of the participant and could even lead to further de-politicisation if conceived as a mirage of social inclusion rather than the real thing. Walter Benjamin in his essay, ‘The Author as Producer’ of 1934 describes how production “is able first to induce other producers to produce, and second to put an improved apparatus at their disposal. And this apparatus is better the more consumers it is able to turn into producers, – that is, readers or spectators into collaborators” [12]. This statement would perhaps ring true to many practising artists today as something that inspires them to develop projects, create platforms and facilitate collective production. It could also refer to New Labour policies of social inclusion and the rising trend of corporate social responsibility through which much socially engaged art is funded to build bridges with local communities. This top-down process of empowerment, however, has been heavily criticised by the communities of ‘consumers’ themselves, as being patronising and vacuous. Through the veil of social inclusion (often delivered through community consultation and socially engaged or public art) ‘participants’ experience the realities of regeneration such as increased control, privatisation of public space and rising house prices. Recognising the reciprocal nature of engaged art opens up the possibility of understanding the work in different terms that leave the artist’s intentions and integrity intact and unchallenged (if this is what the artist wants to achieve), while others take from it what they want.

Moving on from recognising reciprocity, co-production involves participants becoming co-producers or co-authors, which further challenges the artist as sole author. In opening up the work to others for their input there is sometimes also a focus on an analysis and negotiation with the systems and structures that support the artistic process. This can be seen to some extent in the Battle of Orgreave (2001) for example, initiated by Jeremy Deller and filmed by Mike Figgis which was built on contributions and performances of those at the original battle on 18 June 1984 and re-enactors. The re-enactment and subsequent film screened on Channel 4 was a reminder of that day told predominantly by people who had lived it and for whom the repercussions are still being felt. A tactic used in the Greenwich Emotion Map, was to engage those involved directly in regeneration decision-making processes as participants in the work itself. The Greenwich Emotion Map and other Peninsula projects, for example, have involved both local residents, politicians and developers in joint workshops. This way it is possible to question the values placed on art with a wider community of people allowing these values to be disrupted and challenged not just by artists but also by those involved in its production.

Working in the context of a comparatively prosperous publicly funded cultural sector (in relation to other countries), has meant the critical aspect of socially engaged art practice has had to shift a gear from direct action (to activate and empower individuals) to question the very nature and meaning of a socially inclusive agenda being applied to art. Rather than becoming the vehicle through which urban developers can market their social responsibility, do such projects as Emotion Map have the potential to demand a more thorough, democratic involvement of different people in the inevitable development of the ‘master-planned community’? This marks a shift in the focus of the critique to a questioning of the means of production, thereby unravelling the reason why the money is there
for the socially engaged art project in the first instance. The critique now involves a probing of the motivations of corporations and governments to empower and make producers of us all and questions the artists’ role and position in carrying out these objectives.

The Greenwich Emotion Map does this by inviting people to question the nature of surveillance technologies by surveying and mapping their own movements through public spaces. It provides an alternative, multi-authored set of identities to the branded, slick and marketable identity of ‘The Greenwich Peninsula’ dreamt up by remote developers.

Equally, it could be seen to be paving the way for clever market research techniques to help companies decide which areas are ‘emotionally productive’ and therefore ideal advertising locations. To some participants the Greenwich Emotion Map is enticing people to take an active role in the changes in their area, to others it provides a diversion and illusion of participation. How does Emotion Map’s usefulness to the developers of the Greenwich Peninsula balance with a collectively produced critique of the development of the Peninsula and how is that critique taken on board (or ignored) by the developers?

This fourth approach incorporates elements of anthropology, reciprocity and co-production whilst becoming open for interpretation, redirection and transformation. The work takes off in all directions, each of which is equally significant. As we have seen, the Greenwich Emotion Map is schizophrenic in showing at times a useful community friendly face and at others a ruthless but all-important streak of irony (importantly – this latter aspect is developed by the ‘participants’ as well as the artist).

By proposing models for activism, this fourth stage is analogous with Benjamin’s apparatus for turning consumers into producers. The resulting Ordnance Survey-style Greenwich Emotion Map has the potential to become an apparatus/tool for those involved to consider the implications of such a device. The official style of the map invites serious interaction while yielding surprising findings that you would not usually associate with a formal navigational tool. The map also demonstrates how map-readers can become the cartographers of their own environments. The participants became ‘producers’ in a process they would usually be the unwitting consumers of. The Greenwich Emotion Map attempts to incorporate a complex unearthing of social relations that make up the meaning and transformation of a place.

How is the map, the walk and the technology of the Greenwich Emotion Map used, adopted and manipulated? There have been discussions locally about this technology being used to map the content of local meetings in order to adopt a visual mode of communicating key issues or concerns to other groups and decision-makers. The Senior Regeneration Manager at English Partnerships and one of the participants of Emotion Map project, thought the emotion topography was interesting and could see how this could translate back to a developer and to architects: “You could be mindful of this when designing… (it might) take a bit of a leap for some developers and planners in order to justify it as a meaningful consultation exercise … I came away thinking – that was a serious study in human behaviour.”

Returning to Walter Benjamin, the Greenwich Emotion Map has the potential to be understood as an ‘improved apparatus’ [13], or a tool for turning consumers into producers that has introduced a shared, ‘bottom–up’ notion of production that acts as an alternative to more dominant processes of change and regeneration happening in the area. The future use of the technology and the maps will determine to what extent the users turn themselves into producers. There is often value placed on the useful and useless aspects of art depending on the context in which it is produced or presented. For example, in an art context, one might claim the useless aspect is of utmost importance, adding to the ambivalence and ambiguity of the work. When at a meeting with a group
of planners one might stress the function of the work and its ability to add economic and cultural value to an area. Both aspects are important in that they hide the useless element to those who like to see only the functional side and the useful aspect of the project to those who deem such claims to be unworthy of art. In the case of the Greenwich Emotion Map, ‘uselessness’ in terms of not providing a clear outcome or conclusion, is not necessarily a negative aspect.

As in the anthropological approach, it was the artist’s intention to provide possibilities and questions rather than solutions and conclusions. Pointlessness and uselessness could be a valuable strategy of resistance in a society that demands productivity, outcomes and quantifiable results.

It could be argued that an art that ignores or hides its useful side is unable to be political and that an art that purely promotes its functionality looses out on being able to be critical. Do we then need to acknowledge and revel in both the useful and useless acts in order to claim the political and critical aspects of art? It is the element of ‘surprising functionality’ that is significant here, that is, being useful in an unexpected way, rather than providing a useful service or carrying out a set of instructions. How can the Greenwich Emotion Map be useful in an unexpected way?

Emotion Map is not an obvious consultation exercise; on the one hand it evolves into a useful study and on the other it remains abstract and useful only for those taking part. For Emotion Map then, it is both the potential ‘readability’ and ‘unreadability’ that is important. The use-value remains the primary ownership of those taking part (the map-writers and readers) and the project resists co-option (due to its illegibility as an obvious piece of consultation) by those who wish to use it as a box-ticking tokenistic consultation exercise.

Political action lies in the possibility of finding something pragmatic in what appears to be absurd and to discover the absurd in the everyday. The critical potential of projects such as Emotion Map lies in the different (conflicting) directions experiences take and the ability for the people involved to respond and adapt to these influences and triggers.

By acknowledging that at times work will be artist-led and at others by participants, new opportunities to represent, reciprocate and co-produce emerge. This combined model of a critical socially engaged art that is funded to ‘do a job’ owes it to all involved that these triggers are unexpected. By acknowledging and exploring these different uses, approaches and values, funding can be used to expose some of these contradictions in the process of regeneration. Furthermore, the Emotion Map demonstrates how such projects could reflect the conscience of regeneration and urban development back onto those who have outsourced it in the first place.

ABOUT THE AUTHOR

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Our Vision Greenwich Peninsula: Meridian Delta Limited.

Peninsula was a series of six artists’ commissions that involve local people in investigating the Greenwich Peninsula and its regeneration from 2005–7. The project received funding from Arts Council England, Heritage Lottery and City Parochial Foundation.


http://www.culture.gov.uk/what_we_do/Arts/arts_and_communities/


The four methods I explain here are interpretations of three other descriptions of socially engaged / new genre / public art by Suzanne Lacy.


Each of their descriptions are also broken down into four positions, stages or dimensions.


Walter Benjamin (1934) ‘The Author as Producer’.

The images on this and the next few pages are all from the Brentford Biopsy, 2008. The images show multiple views of the 10 meter long printed banner map which was designed with the local participants which included the mayor, priest, historians and landscape architects.
4 Animal Visions

Animal Visions is a project that brings a particular set of methods and instruments to our public and private spheres. It is an art piece which brings together a particular set of data that visualises the instruments and methods that we use to situate the content of this map that should also give us a sense of how to situate the content of this map that should also give us a sense of how to situate the content.

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1. Built Environment
History, Industry & Development

old historic traditional developing promising

Consortium
New

New Development
New people who care about heritage, have their own identity

old don’t interact
Hacking is what happens when you understand a system – you look for exploits, short-cuts and unintended uses. You subvert the design intention, reconfiguring things for your own purposes. Hacking is what a hacker does to understand a system. What does this do? What will happen if I do this? Hey, cool! Now what would happen if I do this?

Hacking is a DIY culture, a dissident, irreverent culture. Status is about kudos: what can you do? Come and show us. Share. Show off. The hacker of the mainstream press is destructive, but always young, cool, capable. An anti-hero, in fact. Lots of hackers see it that way too. Destructive? Well, maybe, but isn’t the mainstream always going to see disruption of their agenda in that way?

Your mind is your thoughts and experiences, all the things you experience like your memories, hopes and feelings as well as all the processes going on below the surface that make conscious thought possible. Add to this the idea of hacking and we get ‘mind hacking’. Mind hacking means looking beneath the user–illusion of consciousness and getting at the underlying workings [1].

That sounds great doesn’t it? What does it really mean? ‘Mind Hacks’ is a book I wrote with Matt Webb in 2004 for the technical publishers O’Reilly. Matt is into technology and ideas, I’m into cognitive neuroscience. We drank one too many cups of coffee and it seemed like a good idea at the time [2]. I think O’Reilly really had their eyes on something like ‘Mind Performance Hacks’ (actually released 2006, but not written by us). We were thinking about liberating all the cool science that has been done recently uncovering the workings of the brain and mind. Science started out as a kind of open source – ideas published in journals so anyone can question them, use them, change them. We wanted to take the tips, the tricks, the discoveries of the sciences of the mind and package them in little bundles which people could experience, play with and repurpose (like programming functions). It was great. I spent six months trying to see how many arbitrary words I could remember using ancient Greek memory tricks, or see if I could catch myself moving my eyes in a mirror. My flatmates came home one day and I was standing on my head in the hall trying to work out if the picture I’d drawn looked like it was curving in or out of the screen. Both Matt and I became hyper-sensitive to the running of our own minds, the glitches in what we noticed, remembered, felt. I found out that things I’d noticed before had been given names by psychologists. That feeling when you say the word banana fifty times and you lose the feeling for what it means: “semantic satiation”. I learnt concepts that made me notice things I’d never noticed before. Like the moment when the projector is off before a film comes on in the cinema, when the screen is dark, there’s an illusion where the screen appears to grow without changing size. Look out for it, it’s there I promise. So we wrote this book about moment–by–moment experience, about attention, awareness and memory. As well as liberating some scientific information into the mainstream, we also learnt a few things about our own minds along the way.

One thing the book relied on fairly explicitly was the idea of the mind as a bit of technology; a mechanism or set of mechanisms with

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“Hack: n. a clever solution to an interesting problem”. Motto of O’Reilly’s Hacks Series
predictable input-output relations. This predictability means that we can try and infer operating principles, and then experiment with them. You can only take this metaphor so far. It is fairly clear that the mind isn’t a mechanism in the old, hard, sense of machinery. If anything it is a mechanism in the software sense, something fluid and adaptive, dealing with the intangibility of information processing. Because mind is infoware, it becomes technology in the Arthur C Clarke sense – something that is sufficiently sophisticated to be indistinguishable from magic. Andy Clark has talked about how the mind is software for dealing with whatever the world throws at us [3]. By this I don’t just mean that our brains learn to do smart stuff, I mean that our brains learn to take anything we can control and make it part of our cognitive ecosystem. We use external objects as mental tools naturally and compulsively. Our minds are plastic and extensible, so fundamentally embodied that the barrier between world and mind is leaky like a sieve. Andy Clark says that we are ‘natural born cyborgs’, born to become fundamentally integrated with whatever technology is available in external world.

You probably have a feeling for what this means already. When you use a well-designed bit of technology it becomes invisible – for example, if you drive you’ll have noticed how the car becomes an extension of your thoughts; you forget about gears, pedals and the wheel in your hands and instead think of speed, acceleration and movement, just like you forget your muscles when you are running. If someone asks if you know the time you automatically say that you do, ignoring the fact that it is your watch that contains the information, not your memory. But you can access the information so easily that it feels like it is part of your mind. I bring up this idea of our extensible minds because I want to draw an analogy with Bio Mapping. The idea of mind hacking was based on the idea of our conscious experience being constructed by various component processes, but in our book we never really got to grips with the idea of extending the repertoire of components that construct our experience. Let me illustrate how important these components of mind can be by a story. Its not a story about an extraordinary augmented human consciousness, but about an unfortunate individual who lacked the ordinary augmentation of memory which we normally take for granted.

In the book ‘Broken Memories’ [4] Margaret O’Conner and colleagues tell the story of an amnesic patient they’ve studied for over two decades. The patient, who they refer to by his initials, SS, has a kind of brain damage which means that he can’t create new memories for things that happen to him, nor does he remember events in his personal history from before his accident (a viral infection that spread to the temporal lobe of his brain). Like other patients with this kind of amnesia, SS is stranded in the present. O’Conner describes how SS has kept the buoyant mood and outgoing personality that he had before his injury. He’s intelligent and able to carry on a normal conversation – just as long as you don’t expect him to remember anything beyond the sphere of the immediate conversation. He is completely dependent on his family and cannot work, and had been for two decades at the time of writing. When O’Conner and colleagues gave SS standard psychiatric tests for depression there was no evidence that he was unhappy [5]. When he was asked, for example, if he often felt miserable or hated himself or thought of suicide, SS consistently ticked the “No” boxes, reflecting his upbeat personality.

This isn’t the end of the story, however. A second batch of tests was administered, which tested mood indirectly [6]. These tests didn’t ask SS directly how he felt, but instead were designed to assess his personality traits and the themes which dominated his thoughts. These tests seemed to show that SS did have depressive feelings, even if he didn’t articulate them in the first set of tests. O’Conner interpreted from the second tests that SS had low self-esteem, along with accompanying depression and anxiety, as well as a preoccupation with ideas of loss and decay.

So is SS depressed or not? O’Conner and colleagues asked themselves the same question, and in answering they drew on the distinction between expressive and experiential aspects of mood. SS seems to experience depression to a far higher degree than he expresses...
it. But this isn’t a case of simple deception. What is happening is that his memory problems, combined with his upbeat personality, seem to prevent him accessing these feelings regularly or consistently. The standard tests for depression, which rely on his own recognition of his feelings, suggest that he isn’t depressed. Yet, the personality test which addresses mood indirectly allows SS’s depressive feelings to come through. SS does have unhappy feelings, which is not surprising for someone in his position, but his injury prevents him achieving a stable conscious awareness of this fact. If SS had an intact memory for life’s episodes it would become a tool for self-reflection, a repository for data about himself. He could use it to aggregate the fleeting evidence of his negative feelings. Instead, his upbeat personality dominates those nagging feelings, sweeping them away every time they occur – he is ignorant that each dismissal is not the first, but is in fact one of a countless succession of such sweepings-away.

For those of us lucky enough not to have amnesia, our episodic memories are a bit of mental technology which our consciousness can use; it’ll help us remember where the shops are, what happened earlier in a film, as well as augmenting our ability to self-reflect and self-understand. Amnesic patients show that episodic memories are not a necessary component of the mind, they can be removed by injury. If the components of the mental operating system are modifiable, what other component have been, or could be, added into this kernel?

Like memory, language is another tool for thinking. Often it is only after I have said something out loud that I realise exactly what I think. Language is a tool, but it becomes so integral to ourselves that we think through it, with it, rather than having to struggle to construct sentences and pick words (this does happen, of course, but it is such an exception that it is notable when it does). By putting things into words we can express feelings, make ourselves remember things and see what we think about an idea. Just as the external world becomes part of the mind, we can make the internal world become external and hence use it as a vehicle for self-awareness. The point is that the distinction between mind, body and world isn’t a firm one. Language is part of the world, just as it is part of our minds. So too can writing, computers, maps or other people be part of our mind. As with language, all our tools are vehicles for self-awareness. Even physical tools like a hammer. As soon as you pick it up you ask yourself “What can I hit with this?”, which is encouraging us to ask ourselves “What do I want to make or break with this?”. Bio Mapping is a tool for self-awareness, at once more ephemeral and more sophisticated than a hammer. By looking at your arousal as you traverse physical space you create a medium for reflection on your feelings, feelings which can normally pass below the radar of conscious awareness. Similarly, on a group level, when we can look at similarities in our emotional responses to physical spaces it lets us focus on shared feelings which, are normally only fleeting and not recorded, and so pass below the collective radar.

After we’d written the book we got a lot of interests from marketers (the people whose job it is to sell stuff, by fair means or foul). One story we were told was of someone who worked in PR walking round the O’Reilly ETech conference, waving the book and boasting about how they would use it to win hearts and minds. Someone asked me at a book reading if I was worried about giving all the secrets of the mind away to advertisers. I told them that the advertisers already had a perfected non-theoretical knowledge of how to manipulate people, and our book wasn’t going to help them. I think it was true too – if you read the book you find that you’re getting involved in relatively low-level stuff, like awareness and memory, rather than the higher level stuff of desires, fears and aspirations that advertisers work on.

But still, the reaction to the book was a message on the kind of culture we live in. We’d intended Mind Hacks to be for people like us, individuals, who liked understanding how stuff worked, and making things or improving things. Unfortunately this level of analysis also seemed to appeal to people who wanted to take advantage rather than just explore and improve.
It is here that Bio Mapping has the potential to be more radical than ‘mind hacking’ on it’s own. If Mind Hacks aimed to show the mechanisms behind the construction of moment-by-moment conscious experience, then Bio Mapping can be a hack for a different level of consciousness – the self-consciousness that evolves over time, the interpersonal and ultimately social consciousness. The focus of Mind Hacks reflects a bias that exists in the whole of cognitive psychology. This is a bias towards the individual rather than the social; towards looking at the limits and resources of our mental apparatus rather than the potential; towards focussing on the fixed components of mind, rather than the dynamic and developing aspects. This bias has brought fantastic benefits, but it is still a limited view of mind. Our minds are exciting for their potential, not for their limits; they make sense in a social context, not on their own (this is quite literally true – left completely on your own for long enough you lose your sanity). Because our minds are fundamentally social, a complete understanding of them necessarily needs to reference social space.

If we get fooled into thinking that individual minds are the sole locus of thought (like cognitive science), or that technology should focus on individuals without reference to the social then our perception of the individual becomes severely handicapped. We’re not just natural born cyborgs, but natural born social animals.

What’s this got to do with hacking? Hacking is an idea, as well as a social movement, which is about subverting and reclaiming the tools and metaphors that we’re given. Hacking is a DIY culture of action – a very individualistic community, but still a community with a vision of shared benefits. These are the guys that gave us open source after all. Community solutions are more than side-effects of the hacker ethic, they are core. If the idea of hacking becomes limited to the idea of personal solutions to individual problems then it will have failed. Bio Mapping promises to open up the field of possibilities for social hacking, for awareness hacking, for a rediscovery of conscious collective action – not along the lines of the monolithic political movements of the 20th century, but in swarms, collectives and communities. The hacker ethic is one with the possibility to combine individuality with interconnectedness.

Let’s build.

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Actually Matt is a ferocious tea drinker, not a coffee-drinker.


Standard neurpsychological depression measures: BDI = 3, HRSD = 4.

The MMPI and the Rorschach test.

the essays by dr. stephen boyd davis, sophie hope and dr. tom stafford were specially commissioned for this book.
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This book is a collection of essays from artists, designers, psychogeographers, cultural researchers, futurologists and neuroscientists brought together by Christian Nold to explore the political, social and cultural implications of visualising people’s intimate biometric data and emotions using technology.

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