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Average re

Corporal literacy
by Rob van Kranenburg

Corporeal Literacy understanding of the bodily capacity to read and make sense also change notion of thought and meaning itself, the idea of what it means to do thinking, to make meaning rationalize. (Bleeker, van Kranenburg) "What is important" write Lakoff and Johnson in their Philosophy in the Flesh, "is not just that we have bodies and that thought is somehow embodied. What is important is that the very peculiar nature of our bodies shapes our very possibilities of conceptualization and categorization." This view suggests that implementing digital connectivity in an analogue environment without a design for all the senses, without a concept of corporal literacy leads to information overload. In a ubiquitous computing environment the new intelligence is extelligence, "knowledge and tools that are outside people's heads" (Stewart and Cohen, 1999). In a ubiquitous computing environment the user has to be not only textually and visually literate, but also have corporal literacy, that is an awareness of extelligence and a working knowledge of all the senses.

In this paper I will sketch converging trends in current perspectives on art and the body, art and the hybrid identities of digital and analogue connectivities. These trends have repercussions on the way biometrics can evidence security and security issues. An approach is sketched through the mixed communities of professional amateurs and content experts of emergent practice as the likely form of organization in the near future (5- 10 years). The terms Digital Territory and boundary introduced from a IPTS study on Digital Territory (2006).

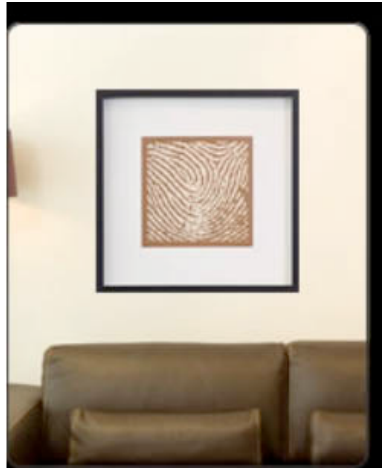
**A. The Arts and biometrics: a trend towards emergence /local / proam / opportunistic network
1 Bio-Art: transformation processes: modern day alchemy**

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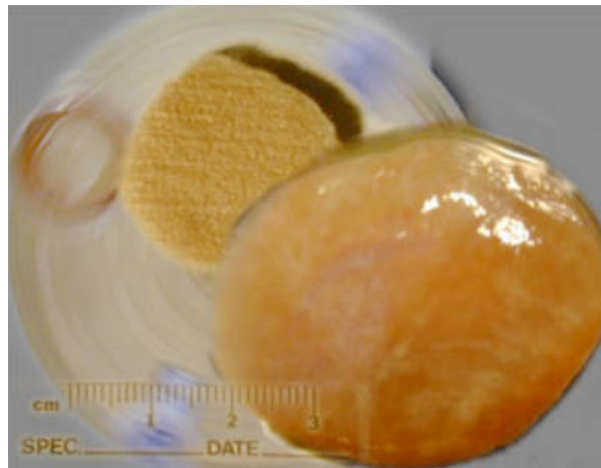
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DNA11.com, a company that creates art from a sample of your DNA.

"Bio-art has changed greatly in the past ten years. We are viewing life more as software/code as hardware. Bio-art is increasingly re-materializing itself - less on code and more on a "phenomenological confrontation with network." It is increasingly interested with transformative processes. Body art is increasing. And it's getting harder to define...hybrid media definition. defines a non-genetic, network project he commissioned: culturing edible, shaped things from tissue. It's called "Disembodied Cuisine."





Bio-art, he says, has become an art of transformation of living materials."

2 Biojewellery

Tobie Kerridge : "Focussing on advances in tissue engineering, our project began with an investigation of implantable technologies: we discovered that scientists were not only using and bioplastics to repair damaged bone tissue but developing a method of growing actual bone outside the body to transplant into patients. Our intention was to create an object that would use these technologies to be considered in relation to a familiar experience. Could design be used to construct an open-ended and provocative statement, in contrast to narratives found in the literature which focused on threatening or fantastic representations of the technology?" By situating bio-art in tissue engineering within the framework of a relationship between two people, the Biojewellery aims to create public dialogue with emphasis on communication and the accessibility of the processes involved."



3. RFID implants

"Amal has two RFID implants, one in each hand. His left hand contains a 3mm by 13mm EM-glass RFID tag that was implanted by a cosmetic surgeon using a scalpel to make a very small hole into which the implant was placed. His right hand contains a 2mm by 12mm Philips HITAG 21 implant with crypto-security features and 255 bytes of read/write memory storage space. It was implanted by a family doctor using an Avid injector kit like the ones used on pets. He can unlock his front door, car door, and log into his computer using his implants, and has written a book called 'RFID Toys', which details how to build these and other RFID enabled projects."



Unwanted Result: legislation:

June 12, 2006 (Computerworld) -- "Wisconsin this week will become one of the first states to ban the forcible implantation of radio frequency identification (RFID) tags into humans. The ban begins Wednesday, when legislation signed on May 30 by Gov. James Doyle goes into effect. The law dictates that no person may force another to have a microchip implanted in his body. Violators face fines of \$10,000 each day until the chip is removed."

4. Low tech bio labs



House of Natural Fiber, Yogyakarta.

5. Small stuff to carry on you: ad hoc networking with your friends



Ad hoc networking: locative artists are making stuff: nintendo ds with linux, asus(brand) wireless hard disk box as linux computers, the "network as a content structure."

"Among the longer term challenges for biometrics is the development of very cheap lightweight micro-sensors with integrated intelligence and context-awareness obtained by close integration with the application. In some instances these sensors will be embedded into the fabric of a service in a manner that will be transparent to the end user" (Deliverable)

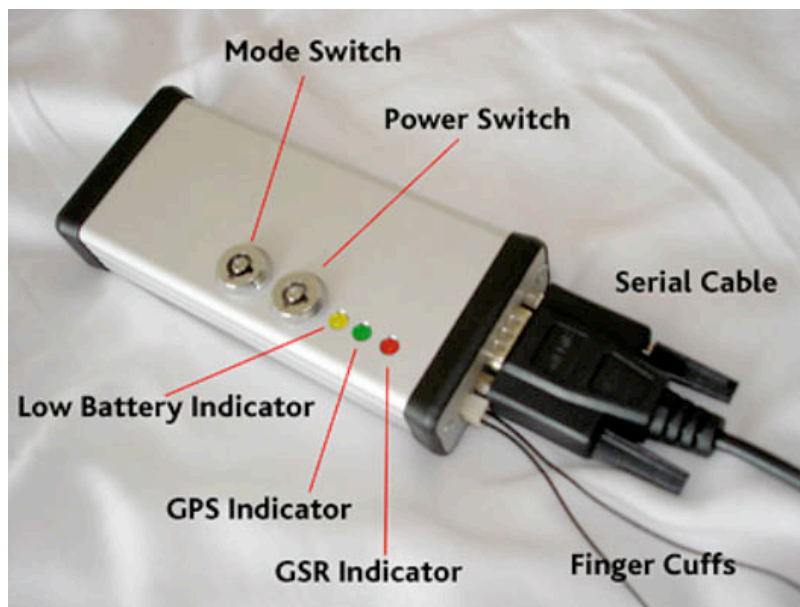
End users are already doing this for themselves. See EU Opportunistic Computing Huddle and small collective Hives Network.

From Biovision: " Looking further into the future, we can foresee a time when biometrics will be a 'fit and forget' culture, with cheap embedded systems forming part of the fabric of a world where computer processing is transparent and users expect systems to operate without the need for explicit intervention. In this scenario of ambient intelligence, the biometric will be smart and be significantly smaller than current models (even though the new range of silicon finger

devices approaches the limit of the human interface). The timescale for this type of environment likely to be at least at the far end of the study period (2010), but an early demonstration of functionality that could be achieved as part of an intelligent device fabricated using state of the art technologies would stimulate interest."

6. Biomapping

Bio Mapping is "a research project which explores new ways that we as individuals can make use of the information we can gather about our own bodies. Instead of security technologies that are designed to control our behaviour, this project envisages new tools that allow people to see, share and interpret their own bio data." Christian Nold investigates individual agency over security constraints. In Mobile Vulgus his main research question was: "How can we come to new understandings of the behaviour of all the protagonists involved in political demonstrations?"



7. Biofeedback in gaming

Biofeedback system to guarantee gaming thrills

<http://www.newscientisttech.com/article.ns?id=dn10095>

B. Society and biometrics: a trend towards decentralization, proam, informal networks, opportunistic networking.

"The preservation of personal privacy and civil liberties is compatible with the need to validate identity of the individual across the spectrum of social interaction. There is no inherent reason why both critical security programs and civil applications of AIT must come at the expense of human dignity. Privacy, respect for human dignity, respect for democratic procedures, may and should complement security. Of major concern are interoperability and societal issues." (Biovision)



"Tomorrow's potential troublemakers can be identified even before they are born, Tony Blair suggested. Mr Blair said it was possible to spot the families whose circumstances made it likely that their children would grow up to be a "menace to society". He said teenage mums and problem families could be forced to take help to head off difficulties. He said the government had to intervene earlier to prevent problems developing when children were older. There could be sanctions for those who refused to take advice, he said."

Genetically Modified Food (GMO) has had extensive PR spin in the last decade, resulting in perceived was as dangerous to becoming fashion technology. The same is going on with RF 2007 it will be called Near Field Communication, or M2M, Machine to Machine. Yet RFIDs th will lie not in logistics (control, tracking, tracing) but in the ability of networkcentric applicati designers and users, such as *Thinglink*:



" the things that people have made themselves have magical powers. They have hidden me: that others can't see." (Mutanen) In that sense each hour spent on a garment adds value, t and more importantly long lasting tangible aids for the memory." [Berzowska]

Social RFID - tagging your old things with the memories of your childhood fantasies -



or Bruce Sterling's notion of *sustainability*, ARPHIDS will enable full recycling.

We have very experienced users: they want agency and they will take it. They no longer ha made by others, no, they create and make networks, software and hardware.

The coming decade will see the crumbling of the European nation states as the cognitariat - digitally literate middle class- will script its own forms of solidarity (with its familiar national a international cognitariat) breaking with the 19th century installed democratic institutions star the health, educational and security systems, causing the start of new class wars between disempowered vast majority of non-cognitariat unemployed and the cognitariat which breaks from national solidarity.

Trends:

- *extreme regionalization*; crumbling of nation states and networked forms of organizatio led by the recognition of the digitally literate middle class that de facto there are no individual nation states (no more currency (euro), no more law (70-80% out of Brussels). There is no publicly shared common agenda (multicultural debate/muslim terrorism-racism- 15% rise in emigration in Holland over past four years) and networked forms of organisations will emerge that will stop paying taxes to these perceived empty shells as they can provide health (medication online, operations in Poland, India), security (local emergencies), education (home schooling/internet) much better on their own than in this now redundant layer of organization. Resulting in: new middle ages.
- *breakdown of high end infrastructure of design for disappearance* (Ambient Intelligence will demand design for visibility: experience the design and ontological principles of ad hoc networks.
- *opportunistic networking in messy environments*: design for emergence is design for localities and regionalization.

C. Future research agenda following from A and B

"Research agendas have done a good job of highlighting issues, but lacked a key component: the ability and agreement to act upon it in a meaningful way. Besides the known techniques such as face and finger recognition, new methods are researched upon, such as DNA, which make use of an individual's physical characteristics, for authentication of individuals. Multimodal fusion of biometrics will improve the robustness of the applications. Apart from more fundamental (research) questions, operational issues such as privacy and data protection become more important. Other issues of major concern are interoperability, the transparent operation of biometrics and societal issues, in particular identity management." (Biovision)

Unless we find new ways of scripting new forms of solidarities with digital technology, it seems like we can envisage two roads that both lead to less dialogue, less communication, less innovation, less business opportunities, less sustainable options. The one focuses on control in a fundamentally flux wireless environment. The other focuses on hiding the technological complexity behind ever more simple user friendly interfaces. In both cases there is no learning by citizens on how to function within such a system, thereby opening up all kinds of breakdown scenarios.

Focusing on multimodality for more security might underestimate the ability of people to meet things up (end point security), the call for revocable keys (Security Taskforce EU), and the possible democratic threats of the need for a central database.

One future trajectory is to investigate and instigate the same kind of lowtech approach in biometrics as in ad hoc networking:

- translations
- hardware/wetware
- kits
- inspire communities of practice
- instead of 'seamless' more interference
- instead of standards more middleware
- instead of distributing security more distributing insecurity

The track of biometrics for open communities of practice could lead to a range of commercial applications of people getting insights into their own social behaviour (tracing), emotional moods mapped to places and spaces (ehealth) and even their own intrinsic internal feelings and thoughts. Identities would then voluntarily be formed and swapped in online 3D environments (Second Life) and offline ad hoc networks. Specific clusters of biometric data could still be used for identification and authentication, but with this difference that an individual would want to identify himself with a cluster of iris, left toe and sonic ear feedback.



Xsens' products "are small, low-cost and highly accurate 3D motion measurement units." A sensor now costs about 2000 euros, the suit 40k. This will get cheaper.

from Biovision: "This situational, dynamic view of identity needs to be borne in mind as we examine the opportunities offered by biometrics to fix identity in the context of one or more applications. By fixing identity and using biometrics to confirm that single identity in daily transactions, we may be changing society in unpredictable ways."

Digital Territories and the Bubble

Maybe the IPTS report on Digital Territories (for which the author was part of the core team experts for CTI Patras and Atlantis Research) is productive in fostering a conceptual model for an Identity Management situation in which citizens might be able to decide for themselves how they want to be identified and identifiable. Surely they are the stakeholders with the most powerful vested interests in their own way of distributing their set of identities:

"... if we impose upon the digital world notions of the real world, in order to essentially better

understand it, we risk losing important advantages that it offers. The lack of physical boundaries, the all-potent space and the freedom it offers are not assets to discard easily.

From this point of view, the process resembles the colonisation of a new world: we have a choice either to accept it as it is, and try to profit from it, or to impose our known schemes and patterns. Both methods, one of which has been tested in the real world as well, have their merits and their disadvantages." (Final report, IPTS Digital Territory)

A Biometric Bubble, a contextual data filter

"A (digital) bubble is a temporarily defined Aml space that can be used to limit the informatic coming in or leaving it. A bubble is a metaphor for visualizing DT. It has an owner (at the centre), radius (that defines its extend) and duration (it is ephemeral). Its enclosing membra can be set to different degrees of opacity. As a direct consequence to its relationship with DT, the bubble concept clusters together all the interfaces, formats, rights and agreements etc. needed for the management of personal, group and public data and informational interactions. Such contextual activity can be based on privacy, personalisation, priority, location, membership, ambience, social circumstances, and time. Hence, the bubble concept (being the visualisation of a DT) can be used to make filtering and selection of data possible."

The above leads to three main research questions:

Is a Biometric Bubble a workable concept?

How can Biometrics be embraced by the Open source community? (Christian Nold)

Should and if yes how can recommendations from Security Taskforce be synched with Biosecure?

- The Advisory Board of the EU ICT Security & Dependability Taskforce

http://www.securitytaskforce.org/dmdocs/SecurIST_AB_Recommendations%20Issue_V2_0.

Rob van Kranenburg

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Jens Hauser

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EU Nation States crumble scenario

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Tony Blair and troublemakers

Last Updated: Thursday, 31 August 2006, 18:01 GMT 19:01 UK

Thinglink

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Social RFID

<http://www.patrick.plaggenborg.nl>

Howse & Kemp

<http://www.fundacion.telefonica.com/at/vida/paginas/ev8.html>

You can find the event ► **'the future of Ambient Intellegience', February 22, 2007**

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