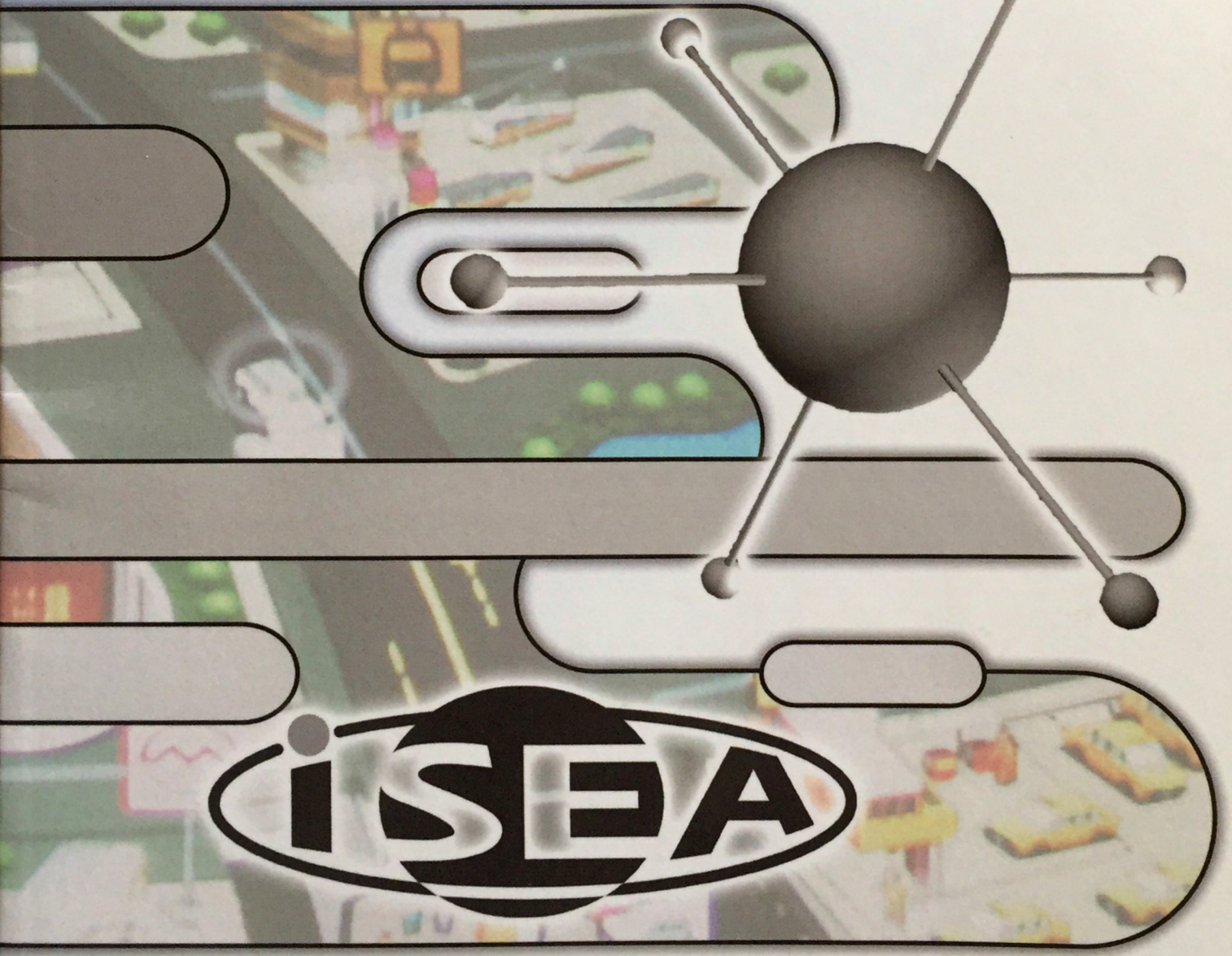
intelligent agent

06.02

ISEA2006 issue



intelligent agent 06.02

ISEA2006 Issue - Table of Contents

Transvergence Papers

Community Domain Papers

Interactive City Papers

Pacific Rim Papers

Welcome from the ISEA Board of Directors

The Inter-Society for the Electronic Arts (ISEA) welcomes the 13th edition of the international ISEA symposium and congratulates the organizers of ISEA2006 for presenting the first ISEA event in California. San Jose, a distinctive site of innovation and creativity, embodies many of ISEA's values and traditions. The ISEA2006 symposium affirms this legacy with a program of eminent quality.

ISEA is an international nonprofit organization promoting interdisciplinary academic discourse and exchange among culturally diverse organizations and individuals working with art, science and emerging technologies. Fittingly, ISEA2006's emphasis on dialogue to encourage the exchange of ideas and practice, represents a vital aspect of the ISEA mandate. The integration of information/media concepts and current communication technologies at ISEA2006, will facilitate increased interaction with remote participants and the disabled. In addition ISEA2006 also serves the cultural diversity mission of ISEA with the Pacific Rim events.

The Inter-Society invites all ISEA2006 participants to the ISEA public meeting which will provide opportunities to discuss the further development of ISEA, the ISEA Symposia, and to announce the hosts of ISEA2008.

ISEA is proud to celebrate ISEA2006 in conjunction with the premiere of the ZeroOne San Jose Festival. We hope that the ISEA2006 Symposium extends this Californian gateway to the expanding worldwide realm of the Electronic Arts.

Nina Czegledy, Chair
ISEA BOARD of DIRECTORS

Foreword

In collaboration with the ISEA2006 Festival and Symposium taking place from August 7-13 in San Jose, intelligent agent is featuring the papers presented at the ISEA symposium in this special issue, which is published both online and can be ordered print-on-demand at the intelligent agent website.

As the symposium is breaking with some of the conventions of a conference – encouraging a more dialogical format where papers are not formally presented but pre-published online and discussed in the symposium sessions – this special issue also slightly deviates from the traditional publication format of conference proceedings. Rather than serving only as a form of "documentation" after the festival, this issue also functions as an "on site" companion to the symposium, making the papers available to symposium visitors for easy reference. It is part of the nature of this process that the essays included here are in various stages of "development": some of them have been previously published and discussed on mailing lists and then revised; others are in a "beta" stage, proposing ideas for further discussion within the symposium.

intelligent agent's special issue follows the four threads of the symposium – Transvergence, Community Domain, Interactive City, and Pacific Rim. The essays gathered under these sections do not provide a cohesive exploration of the respective theme; rather, they offer very different perspectives on the topic for further exploration within the symposium. The papers in the Transvergence section, for example, address subjects ranging from time-based works of the "digital avant-garde," the relationship between voice and code, and the possible connections between networks and institutional forms, to a more conceptual understanding of new media art as an "antibody" and a literal exploration of living tissue as "extended body."

The ISEA2006 issue of intelligent agent is meant to provide a starting point for discussions that will connect the multi-faceted perspectives offered by the essays in this volume.

Patrick Lichty
Editor-in-Chief

Christiane Paul
Director

intelligent agent

intelligent agent is a service organization and information provider dedicated to interpreting and promoting art that uses digital technologies for production and presentation. intelligent agent is a non-profit organization with fiscal sponsorship from the New York Foundation for the Arts.

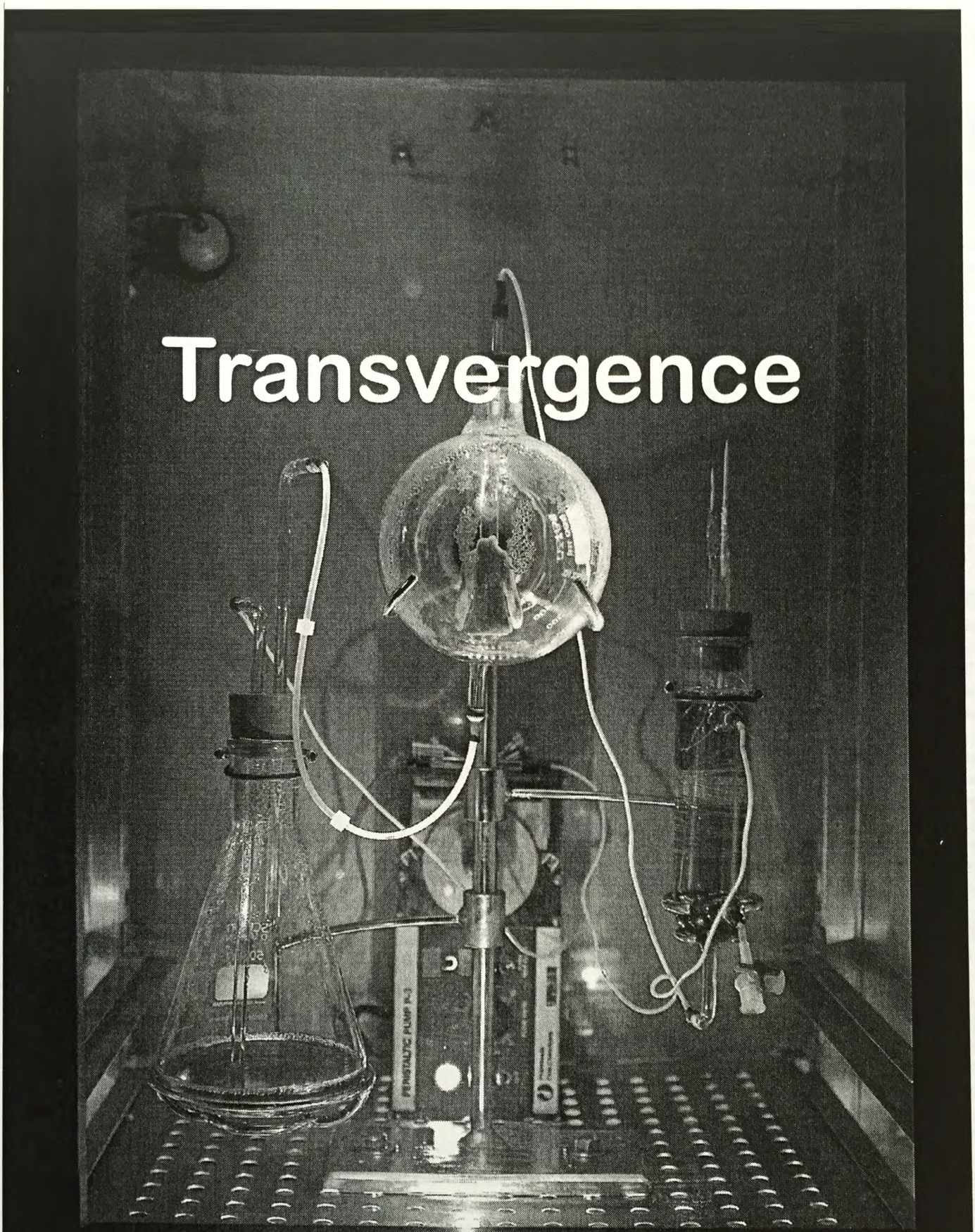
Director: Christiane Paul
Editor-in-Chief: Patrick Lichty

Intelligent Agent, Inc.
79 Thompson St., Ste. 12
NY, NY 10012
http://www.intelligentagent.com

Published by www.lightningsource.com
Cover Design: Patrick Lichty
Cover Photo: Franck Ancel

intelligent agent 06.02

Transvergence



TC&A: Victimless Leather. Photo: Oron Catts and Ionat Zurr

Aporias of the Digital Avant-Garde

Steve F. Anderson

Abstract

This article maps two divergent trajectories within a narrowly defined sphere of short-form, time-based digital media created between 1995 and 2005. Works discussed include music videos, design-oriented short films, and motion graphics by directors Michel Gondry, Virgil Widrich, Mike Nourse, Barbara Lattanzi, Rico Gatson, and design firms Logan, Ramon & Pedro, and H5. These works are considered in relation to the historical avant-garde – particularly the Structural film movement of the 1960s and 70s – and analyzed as responses to a range of cultural concerns specific to the digital age. The analysis identifies movement toward two terminal points: first, a mode of remix-based montage inspired by open source programming communities and peer-to-peer networks; and second, the emergence of a mode of imaging termed the "digital analogue," which foregrounds the material basis of digital production.

Aporias of the Digital Avant-Garde

This article maps two divergent trajectories within a narrowly defined sphere of short-form, time-based, digital media – specifically: music videos, design-oriented short films and motion graphics – created during the past ten years. Despite the fact that the work under consideration here has rapidly proliferated and resonated with many of the key theoretical issues in cinema and visual culture studies of the past three decades, it has been largely neglected by theorists and critics of digital culture.[1] Part of the reason for this neglect is practical. The works themselves are often ephemeral or difficult to access and they tend to occupy a liminal position between what is called "experimental" or "avant-garde" film and video, and the equally broadly defined field of practice termed "new media." These works therefore do not fit into any consistent curricular or publishing niche, are rarely a part of mainstream culture, do not receive theatrical distribution or broadcasting, and are often regarded with suspicion as proper objects of study within an academic context.[2] Nonetheless, I will argue that much of this work may be productively understood as a processing ground for some of the most compelling issues in digital culture, as seen across the broad spectrum of contemporary media.

I am particularly interested in considering this work's potential for understanding emergent approaches to the perception and construction of space, time, and bodies; the status of narrative; and relations between technology and material culture. As a point of entry, I propose to ask whether this work may be meaningfully understood in relation to the historical avant-garde, particularly the Euro-American Structural film movement of the 1960s and 70s, and to explore resonances with a range of cultural concerns of relevance to the digital age. I do not, however, wish to spend much time justifying my use of the term "avant-garde," which admittedly carries specific historical connotations which are not all applicable to the present discussion.[3] I will argue that these questions guide us toward two primary terminal points. The first is the movement toward a kind of "open source" video authoring modeled after the combined practices of open source programming communities and peer-to-peer file sharing networks – two practices that have significance for the future of digital media across a wide range of production and distribution practices. The second is the emergence of what I call the "digital analogue," a mode that foregrounds material aspects of production seemingly in defiance of the conventional wisdom that digital media are characterized by dematerialization and disconnection from the physical world.

Because the title of this essay features the rather glaring oxymoron "digital avant-garde," it may be useful to

I will argue that these questions guide us toward two primary terminal points. The first is the movement toward a kind of "open source" video authoring modeled after the combined practices of open source programming communities and peer-to-peer file sharing networks – two practices that have significance for the future of digital media across a wide range of production and distribution practices. The second is the emergence of what I call the "digital analogue," a mode that foregrounds material aspects of production seemingly in defiance of the conventional wisdom that digital media are characterized by dematerialization and disconnection from the physical world.

define these two terms in isolation in order to frame the use I hope to make of them in juxtaposition. First, the term "digital" rarely denotes a set of cohesive practices. Digital media are notoriously hybrid, often bringing together images, sounds, and objects that are computer-generated or mediated with others that originate in the analogue, photochemical, or textual worlds. There is, however, a certain utility to "digital" as a historicizing term, particularly as it implies its own eventual obsolescence. I am less interested, therefore, in defining "digital culture" in terms of technology, than in attempting to identify the social practices and preoccupations that are particular to the digital age. One of the things at stake within the consumer culture that surrounds digital media is the growing invisibility of its underpinning technology. This is of particular relevance given the current movement toward ubiquitous computing and wireless networks; even flat panel monitors and microprocessors that are embedded in everyday objects seem to negate the physical infrastructure of the computer and by implication, its socio-industrial base.

Within visual culture, digital imaging has come to signify a parallel ontological shift away from the indexical trace of the photograph. Where photochemical imaging could lay claim to a direct relation to the physical world, both conventional wisdom and our own experience tell us that digital images are differently disconnected from the world they purport to represent. Although the problematic of representing reality long predates the appearance of digital technology, the early 1990s marked a point-of-no-return for the representational capacity of images. In his 1991 book *Representing Reality*, documentary film theorist Bill Nichols offered this almost sheepish disclaimer:

> *[through digital sampling] The image becomes a series of bits, a pattern of yes/no choices registered within a computer's memory […] There is no original negative […] against which all prints can be compared for accuracy and authenticity. There may not even be an external referent. The implications of all this are only beginning to be grasped. They clearly set a historical framework around the discussion presented in this book, which continues to emphasize the qualities and properties of the photographic image.*[4]

The previous year, in his influential book on 19th century visual culture *Techniques of the Observer*, Jonathan Crary noted that digital imaging constitutes a categorical break from the photographic processes that were developed in the early 19th century. With digital imaging, Crary asserts, vision is relocated to

> *a plane severed from a human observer […] Most of the historically important functions of the human eye are being supplanted by practices in which visual images no longer have any reference to the position of an observer in a "real," optically perceived world. If these images can be said to refer to anything, it is to millions of bits of electronic, mathematical data.[5]*

The problem with digital images, as Crary defines them, is that they are not linked in an indexical relationship to the "real world" – which he revealingly equates with the "optically perceived" world.[6] What is at stake here are not merely the technical affordances of competing technologies of vision but a philosophical metaphor describing the way we attain knowledge about the world. But in characterizing the ontological shift represented by digital imaging in terms of loss, it is all too easy to find ourselves in a nostalgic desire for the prelapsarian authenticity of the photograph – a concept that is itself dubious at best.

In his essay "Avant-Garde as Software," Lev Manovich extends this loss to the failure of the avant-garde to sustain the convergence of formal and political interests:

> *The old media avant-garde came up with new forms, new ways to represent reality and new ways to see the world. The new media avant-garde is about new ways of accessing and manipulating information […] The new avant-garde is no longer concerned with seeing or representing the world in new ways but rather with accessing and using in new ways previously accumulated media.*[7]

Manovich aptly describes the development of database structures and recombinant media that are crucial to networked culture, but his model overlooks the potential of this new media avant-garde to engage new ways of seeing the world that are rooted not in optical perception but in the harnessing of data flows – a shift summarized by Peter Weibel as a move "from the ruins of representation to the practices of processing."[8] Part of the goal of this article is to understand the functioning of digital networks as not merely a vehicle for the transmission of data, but a means of "seeing" and understanding the world. At stake in this investigation is an emergent understanding of the ways media practitioners are enacting new forms of networked subjectivity and creativity that are specific to an "open source" authoring mode. I do not mean to uncritically privilege these networked practices, which are as readily deployed for evil as for good, but to highlight the transformative impact of networks on historical avant-garde tactics of appropriation and recombination.

Given the constraints of our present historical moment and the purposes of this essay, the "avant-garde" may be defined as a non-singular and contradictory range of minor practices that are dialectically related to – i.e, both resistant to and constitutive of – dominant media systems. These works are characterized by multiplicity, micro-politics and formal experimentation, and perhaps most disquietingly, they are often exo-commercial – that is, positioned in a marginal but necessary relationship to the economically sustaining infrastructure of the enter-

tainment and advertising industries. This definition is in sympathy with David James' work on American avant-garde film of the 1960s, which debunks the old avant-garde / commercial binary as both false and misleading.[9] At the level of both institutions and individuals, James argues for a historical model that acknowledges the fundamentally cross-pollinating relationship between commercial and experimental film practice.

My desire to reclaim the concept of the avant-garde for the digital age comes from a firm belief in the relevance of media to politics and culture, and the potential benefit of developing a critical apparatus for understanding these exo-commercial practices as embedded in a broader context with economic and social implications. Holly Willis has further argued for the value of seriously considering these works as symptomatic indicators of cultural obsessions, "Despite the general dismissal of these works, many music videos, as well as design shorts, offer a compelling examination of some of the central issues that we face as a culture, and indeed, one might argue that these rather disparate artworks offer a map of contemporary anxieties, fascinations and concerns."[10] What is ultimately at issue in both "digital and "avant-garde" is our ability to relate these terms to the exigencies and struggles of everyday life. Put more simply, the goal is to ascribe relevance to particular practices of digital culture in a historical context. Thus, I believe it is possible to treat the term "avant-garde" with respect for its historical specificity, but at the same time, to make a claim for its continuing usefulness with regard to contemporary art practices that have evolved in parallel with commercial-industrial media.

Within digital media, however, it seems clear that the 2-dimensional X-Y axis of Krauss' modernist grid has given way to work that places equal if not greater fetish value on the Z-axis, and the possibility, if not the imperative of composing in depth using 3-D modeling software, video game engines, immersive and telepresent technologies, mobile media, etc.

Modernism and Avant-Garde

In her book *The Originality of the Avant-Garde and Other Modernist Myths*, Rosalind Krauss challenges the discourse of originality on which the concept of the Modernist avant-garde was based, arguing that "the actual practice of vanguard art tends to reveal that 'originality' is a working assumption that itself emerges from a ground of repetition and recurrence." Indeed, she argues, originality and repetition are often bound together through shared formal and structural constructs, and she identifies one such construct – the grid – as a privileged technique of spatial organization within the painted modernist frame. For Krauss, photography provided the final seeds of destruction of originality as the *sine qua non* of modernist art. Her argument turns approvingly to the photographic work of Cindy Sherman and Sherrie Levine as marking a break with the modernist notion of origin, moving instead into an era characterized by the postmodernist discourse of the copy. Now, the operative question is whether the "discourse of the copy" that so aptly described the Appropriationist movement of the 1980s (of which Levine and Sherman were a part) is still sufficient as a descriptor of what is at stake in digital media.

In digital media, the act of copying – a fundamental part of digital composition – has moved from figure to ground, whether at the level of the individual pixel, the sample, or the peer-to-peer network. The status of the copy is no longer at issue – it is as much of a given to digital composition as brush strokes are to painting. To further update Krauss' take on the dynamic interplay between originality and repetition, we must revisit her privileging of the grid as a structuring framework. The grid, for Krauss, marked Modern art's categorical withdrawal from representation and mimesis.

> *Flattened, geometricized, ordered, it is antinatural, antimimetic, antireal. It is what art looks like when it turns its back on nature. In the flatness that results from its coordinates, the grid is the means of crowding out the dimensions of the real and replacing them with the lateral spread of a single surface.[11]*

Krauss goes on to ruminate on the irony of the avant-garde artist turning, again and again, in a celebration of his own originality to the form of the grid for its realization. "That so many generations of 20th century artists should have maneuvered themselves into this particular position of paradox – where they are condemned to repeating, as if by compulsion, the logically fraudulent original – is truly compelling."[12] She further argues that nothing less than the discursive collusion of museums, historians, and makers of art has served to continually assert the superiority of originality over repetition in modern art, a conundrum that was left to postmodernism to outstrip.

Within digital media, however, it seems clear that the 2-dimensional X-Y axis of Krauss' modernist grid has given way to work that places equal if not greater fetish value on the Z-axis, and the possibility, if not the imperative of composing in depth using 3-D modeling software, video game engines, immersive and telepresent technologies, mobile media, etc. In his book *Snap to Grid*, Peter Lunenfeld identifies the 2-dimensional grid as the enemy of the digital designer, whose first act

upon opening an application is to turn off the snapping function so as not to be constrained by the quantum logic of arbitrarily imposed Cartesian coordinates. In the work under consideration here, it is possible to identify two responses to this tendency that suggest alternatives to the privileging of the Z-axis. Within the realm of the "digital analogue," there is frequently a gravitation toward work that foregrounds the tension between flatness and depth, a kind of resistance to immersion that arguably un-privileges 3-dimensionality. And in the zone of networked communication, a figurative Z-axis may be understood to signify the dimensional structure of the Internet or the datasphere of wireless media that concerns practitioners of mobile and distributed media.

Open Source Paradigm

Within the realm of what may be termed "open source video" – i.e., re-edited video files that are traded online and via file-sharing networks – it is possible to view the rhizomatic structure of the Internet as a corrective to the Cartesian coordinates of three-dimensional space. This is particularly realized in the structure of global peer-to-peer distribution networks, which can no longer be regarded as external and posterior to the digital artwork itself. Instead, I believe we are witnessing a transformation of the position of the digital artwork as fundamentally entangled with circuits of replication, recombination, dissemination, and along with them, endless potentials for productive mutation. Both Lunenfeld and Manovich have described this transformation as a shift to "information-based aesthetics," impacting a broad base of digital practices from art and architecture to film and computational media. When addressing works that emerge from the informational space of the network, we are dealing not with originals and reproductions but memes and mutants – circuits of data flow and transformation that assert their own ontological status. Perhaps most importantly, we must address these networks in both material and functional terms, as cultural formations that are the products of material and ideological necessity and not merely passive conduits for data.

A recent cultural object to emerge from this space is the *Grey Video*, which was created and released anonymously in October 2004, only to be shut down by the record label EMI as part of its continuing efforts to enforce their control over copyright of the Beatles' *White Album*. The background to this story is widely known: on February 24, 2004, a group called Downhill Battle organized a day-long electronic civil disobedience action called Grey Tuesday. Downhill Battle sought to protest the legal action taken by EMI to suppress a remix by DJ Danger Mouse that combined rhythm tracks from the Beatles' *White Album* with vocal tracks from Jay-Z's *Black Album* to create the underground sensation *The Grey Album*. During the 24 hours of Grey Tuesday, over 100,000 copies of the Grey Album were reportedly downloaded from hundreds of sites across the Internet and an estimated million more copies were traded over file sharing networks. At the same time, hundreds more websites demonstrated their support by converting their home page color palette to all grey. Although its impact has been largely symbolic, Grey Tuesday is still regarded as the most successful instance of organized civil disobedience against the music industry's actions to protect its copyright against fan re-mixes. Nine months later, the Grey Album was followed by the *Grey Video*, which was created and released anonymously by the design firm Ramon & Pedro. [Fig. 1] The "official" *Grey Video* website[13] was predictably shut down within a few weeks of its launch, although the video continues to circulate on mirror sites and peer networks across the Internet.

Figure 1. Ramon & Pedro, *Grey Video*.

The *Grey Video* begins with a performance by the Beatles before a live television studio audience. Just moments into the song, images of the rapper Jay-Z begin to encroach on the performance and his own lead vocals are added to the background music of a cut-up Beatles song. Images of bumbling and ineffectual broadcast engineers may be understood as a metaphorical jab at the RIAA, who are powerless to recover control of the images being disseminated, first as Jay-Z's image appears on one and then all three television monitors in the control booth and later as the musical remix causes a breakdown of both artists' performance. As Ringo's drum kit is replaced by a set of turntables and the words "DJ Danger Mouse," the now vestigial musicians Paul and George are perfunctorily replaced by dancers; and John performs a virtuosic break dance punctuated by a protracted round of spinning on his head and a screen-exiting backflip that leaves the singer's signature mop-top wig lying symbolically on the stage. On one level, all of this amounts to little more than a parodic gesture, but the electronic civil disobedience of Grey Tuesday and the visuals of the obviously hastily produced *Grey Video* eloquently speak to both consumer frustrations with increasingly restrictive copyright laws and the growing power of peer networks to subvert their enforcement.

Apart from the barely noticeable R+P logo that flashes on screen at the end of the video, Ramon & Pedro

nowhere acknowledge responsibility for the *Grey Video*, which was made with no possibility of direct profit for the design team. Indeed, a disclaimer at the head of the video announces that it was made as an experiment and not for commercial purposes. But the video was also made in full knowledge that the official site would be shut down and based on the trust that a decentered grassroots network would step in and take over distribution of the video. I don't necessarily want to offer Ramon & Pedro[14] as outlaw media hackers – they are rather savvy entrepreneurs who understand the economy of value in viral marketing and the power of aligning themselves (albeit slightly disingenuously) with the anti-industry, anti-commercial sentiments of today's remix culture. Taken in aggregate, however, I believe the Downhill Battle protest, coupled with the widespread, illicit circulation of the *Grey Video* may be seen as exemplary of a mode of practice that is defined by the logic of the open source network at the level of production, distribution, and reception. At stake here is not so much the functioning of a representational system or the capacity of digital technology to create impossible images, but the broader alignment of network technologies with cultural movements around intellectual property and copyright reform – all of which has significant implications for questions about globalization and corporate media conglomeration.

Digital Resistance?

Among the most vocal advocates of the concept of a digital avant-garde that is directly engaged in resisting corporate domination of media is the Critical Art Ensemble (CAE), which argues unabashedly for work that places "a high value on experimentation and on engaging the unbreakable link between representation and politics."[15] In their 2002 manifesto *Digital Resistance*, CAE elaborate on their call for a critically engaged "electronic civil disobedience"[16] that explicitly works to bridge the formal and political dimensions of avant-garde practice. CAE argues that, just as capitalism has become increasingly nomadic, mobile, dispersed and electronic, artists and activists must respond in kind, modeling forms of digital resistance that are equally liquid but preferably operating by means that are less compatible with the status quo functioning of the entertainment industries:

> After all, an avalanche of literature from very fine postmodern critics has for the past two decades consistently told us that the avant-garde is dead and has been placed in a suitable resting plot in the Modernist cemetery alongside its siblings, originality and the author. In the case of the avant-garde, however, perhaps a magic elixir exists that can reanimate this corpse.[17]

The elixir they refer to is, of course, digital technology and the increasing dependence of late capitalist economics on global communication networks and their vulnerability to cultural hacking. "The avant-garde today cannot be the mythic entity it once was. No longer can we believe that artists, revolutionaries, and visionaries are able to step outside of culture to catch a glimpse of the necessities of history as well as the future." In practical terms, CAE propose "cellular constructions aimed at information disruption in cyberspace." They thus advocate hacking as both an art form and political weapon, which points to the importance of thinking not just in terms of media objects and practices but their evolving contexts of distribution and exhibition. Unfortunately, the vocabulary of Hollywood film distribution obscures the functioning of networks and communities – some physical, some online or virtual – within which digital files are copied, reproduced, and traded. Within such a network, distinctions between viewers and producers are irretrievably blurred and the one-way logic of television broadcasting and theatrical distribution becomes the multi-directional, many-to-many dialogue of the BitTorrent network.

Remix as Politics

Mike Nourse's short remix video *Terror Iraq Weapons* is one of many short, "open source" videos to appear during the lead-up to the 2004 American presidential election. [Fig. 2] To create the video, Nourse extracted each occurrence (or variation) of the words "terror," "Iraq" and "weapons" from a single speech by President George W. Bush and grouped them in the order in which they occurred. Nourse's deceptively simple conceit poses a surprisingly effective critique of both the Bush campaign's mendacious association of al Qaeda's attack on the World Trade Center with the regime of Saddam Hussein and the central canard of the administration's advocacy of war, namely the existence of weapons of mass destruction in Iraq prior to the American military onslaught in 2003. At the same time, Nourse's video invites us to think about the functioning of the news media as a passive echo chamber for campaign and administration talking points. The low-tech simplicity of Nourse's process invites viewers to imagine creating their own variations on this project, transforming virtually any electronic broadcast into potential raw materials for re-editing and redistribution.[18]

The other thing that I find particularly interesting about Nourse's video is the move toward thinking in terms of keywords as the primary means of understanding and reprocessing the content of a media broadcast, which is peculiar to the database age. The attribution of metadata, such as keywords, to any media set constitutes a similar process – the distillation of key concepts from a field of possibilities. The result, as with the information-handling capacity of a database system, is to amplify the power of recombination and use of the data set, in this case, turning media consumers into producers of alternative or resistant meanings. I view the linguistic

mutation of Nourse's video as distinct from other appropriative practices in politically engaged documentary and avant-garde film, such as Emile de Antonio's In the *Year of the Pig* (1968) or Charles Ridley's *Panzer Ballet* (1940), in which propaganda images are given oppositional meanings through reediting and recontextualization.

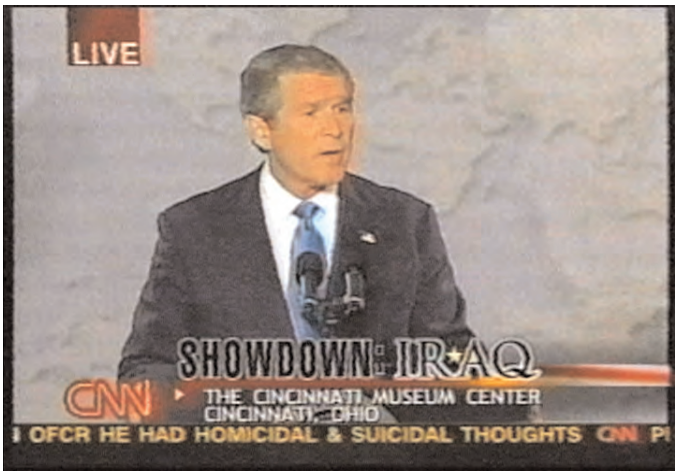


Figure 2. Mike Nourse, *Terror Iraq Weapons*.

Nourse's film and many others like it, including Lenka Clayton's *qaeda quality question quickly quickly quiet* (2002), operate in a specifically linguistic realm, with almost total disregard for the visual. Clayton's film, which has also been released in audio-only format on LP (thereby underscoring its relation to DJ culture), takes every one of the 3814 words in Bush's infamous "Axis of evil" State of the Union speech and simply re-edits them into alphabetical order. In both Nourse's and Clayton's videos, the image of the president jumps spastically around the screen, enslaved by the syntactic rearrangement taking place in the verbal register. This welcome reversal of the usual image-sound hierarchy has its most disruptive impact on the performative aspects of the political speeches, whose constructed inflections and cadences are simultaneously subverted and revealed by the imposed structure of the re-edit. Part of what interests me here is the fact that this reorganizing principle is based on mathematical or alphabetical algorithms that might appear to operate independently of an ideological imperative.

Structural Film as Archetype

This type of systematic, algorithmic manipulation strongly resembles the Euro-American Structural film movement of the late 1960s and early 1970s, which was associated with filmmakers such as Michael Snow, Hollis Frampton, Ernie Gehr, Paul Sharits, Joyce Wieland, and Peter Kubelka, and which finds an active legacy in the continuing work of filmmakers such as James Benning, Su Friedrich, Morgan Fisher, and Martin Arnold. Although highly influential among experimental filmmakers, this work was deservedly criticized for its makers' decision to pursue a set of artistic interests that were fundamentally apolitical and inward-looking, even in the midst of the cultural turmoil surrounding the Vietnam war and civil rights movements. For David James, this movement aligns seamlessly with the conceptual and minimalist movements in the art world – posing an institutional critique of the art world's persistent effacement of the materiality of its objects. "Pure film," as James calls it, constituted cinema's response to Clement Greenberg's call for medium specificity, drawing attention to the surfaces and planes of the film image and its unique, artistic properties by using techniques such as scratched emulsion, loop printing, and mathematically derived editing structures.

Structural film is often misunderstood as a fundamentally reductive and solipsistic practice when, in fact, much of the most interesting work is engaged in broader questions of historiography, narrative, memory, perception, and cognition in the cinematic processing of space and time. Ernie Gehr's work is exemplary in this regard, fulfilling both the rigid structural impulse of the movement's most extreme adherents, while simultaneously engaging in broader philosophical, historiographical, and perceptual concerns. Likewise, Morgan Fisher's body of work, which offers cinema's most esoteric and monomaniacal examination of the processes and mechanics of the cinematic apparatus, also constitutes one of the most erudite commentaries on otherwise too-easily-suppressed aspects of the Hollywood film industry.

While Structural film has been largely regarded as a footnote within film studies, it has resonated with remarkable tenacity in certain sectors of digital media art. Lunenfeld's decision to include a chapter on Structural filmmaker Hollis Frampton in *Snap to Grid*, for example, has been much commented upon as a bizarre anachrony in a book ostensibly devoted to digital culture and design. But Lunenfeld's gravitation toward work by Frampton and other Structuralists is not merely idiosyncratic. The majority of Structural films are themselves mathematical or algorithmic in conception – characteristics that are consonant with the workings of digital media. Indeed Lunenfeld argues, "the ascendancy of the digital image has rendered experimental film ripe for a renaissance […] the experimental cinema can serve as a model for computer-inflected art. I believe, in fact, that the most interesting new media works aspire to the condition of the experimental cinema without quite realizing it."[19] In her book *New Digital Cinema*, Holly Willis likewise identifies Ernie Gehr's Structuralist classic *Serene Velocity* (1970) as a key progenitor of digital media's fascination with space as "our era's primary focus of concern," noting that *Serene Velocity* was created within a few months of the prototype network that would become the Internet.[20]

A somewhat more literal case in point may be found in the work of artist Barbara Lattanzi, who has created a series of image processing systems that function as handlers for online media she calls "idiomorphic soft-

ware."[21] These include *EG Serene*, which is named after Ernie Gehr's *Serene Velocity* and which takes any piece of Quicktime video and provides controllers that allow users to approximate the editing patterns found in *Serene Velocity* (1970);[22] and *HF Critical Mass*, which operates on the same principle in order to mimic the editing structure of Hollis Frampton's *Critical Mass* (1971).[23] Part of the reason I find this interesting is that Structural Film's attention to its material substrate, which represented the apotheosis of cinematic medium specificity and attention to materiality, is precisely the kind of relationship to the apparatus of production (the computer as object-machine) that is largely denied to makers of digital media who are forced to operate in a field of zeroes and ones. In Lattanzi's work, however, the emphasis is on interface; on constructing systems that handle and reconfigure pre-existing media into new patterns.

A handling system such as Lattanzi's offers users a form of empowerment and control that is of an entirely different order than conventional interactive narratives. It also suggests ways to talk about the specificity of digital media that do not simply replicate the formalist impulses of Structural film. While these projects openly pay homage to their Structural film predecessors, the connection is relatively superficial and certainly ahistorical. A more vibrant and deserving legacy of certain aspects of the Structural film project may be found in the work of artist Rico Gatson, who, in the last few years, has created a series of videos using a simple form of digital manipulation performed on sequences drawn from Hollywood films.

Figure 3. Rico Gatson, *Gun Play.*

Gatson's *Gun Play* (2001) extracts the scenes of violence from two Hollywood genre films – *Foxy Brown* and *The Good, the Bad, and the Ugly* – and composites them into kaleidoscopic patterns around a central axis. [Fig. 3] His work honors the rigid mathematical schema of a Structural film through the symmetrical repetition of images, while simultaneously engaging thematic issues of race, colonialism, and violence in Hollywood. Gatson's multiplied frames (which are ideally presented as large-scale installations) and condensed soundtrack speak to the formal seduction of the Hollywood spectacle, which too often fascinates when it should repulse. Gatson shares with Nourse the alembic process of reducing image sequences to their essence. Both projects are also heavily dependent upon viewers' access to pre-existing, extra-textual knowledge – the significance of Nourse's keywords in a presidential speech, for example, or the perversity of merging Pam Grier's most famous blaxploitation character with the steely-eyed gunslingers of a spaghetti Western.

But Gatson's work, which emerges from the worlds of sculpture and installation-based studio art, has a different relation to physical presence than the film images he appropriates. As a result, *Gun Play* and other structurally similar works such as *Jungle Jungle* (2001), and *Celebration* (2001), do not overtly address the transformation that this work enacts on its original materials. Indeed, the straightforward mirror-imaging effect almost seems calculated to be non-labor-intensive, exploiting the ease with which digital image processing software performs tasks such as the multiplication and inversion of images. Gatson's work thus engages its subject primarily at the level of ideology and dispenses with the materialist fixations of Structural film. For a critique of Hollywood stereotypes and structural repetition that is also concerned with the physicality of film images, we must turn to a mode of practice that is diametrically opposed to Gatson's. Perhaps the most remarkable example of this is the work done in the last few years by Austrian experimental filmmaker Virgil Widrich.

The Digital Analogue

Widrich, along with the filmmakers Peter Tscherkassky and Martin Arnold, is part of a "3rd generation" of Austrian experimental filmmakers who all share an obsessive interest in fragmenting and decomposing film frames and working with movement and repetition within the frame. Until recently, Widrich was the only one of the three to work digitally. Both Arnold and Tscherkassky have prided themselves on rejecting digital technology, even as they create works that are deeply imbricated with the logic of digital media in terms of repetition and recombination. Part of the reason I am interested in Widrich is that he is making hybrid films that include the return to paper as a substrate for the moving images he creates. In the last three years Widrich has completed two films in this mode, *Copy Shop* (2001) and *Fast Film* (2003), both of which are based on a method of production that requires thousands of digital video frames to be printed out on paper, folded, torn, and then re-animated. [Fig. 4] On one level, this work constitutes a return to primitive cinema, the kind of frame-by-frame hand-made production described by Lev Manovich as characteristic of digital cinema[24] – but on another level, it demonstrates a process that calls a genuinely unusual degree of attention to the material substrate of cinema. The result for viewers is an acute awareness not only of the

materiality of the film they are watching but the layering of moments in time that is allegorized through the production process.

Figure 4. Virgil Widrich, *Fast Film.*

Fast Film also presents an extreme and literal use of intertextuality, in which characters from nearly three hundred different films move seamlessly through a single narrative space. The film suggests a re-assertion of the individual subject as the associative consciousness of the narrative and assures that each viewing experience will be different, as viewers recognize different clips, characters and moments from each sampled film. The structure of *Fast Film* is that of a recombinant database that serves as both homage and parody in its affectionate pillaging of Hollywood history. Arguably, it is the anxiety attending the ethereality of digital technology that occasions this extreme foregrounding of material processes – namely the crazy, obsessive work of printing, numbering, folding, tearing and then re-photographing tens of thousands of film frames. Another factor is our immersion in an era when questions of copyright and intellectual property have moved from the expert discourses of litigation and technology into the forefront of many people's everyday lives.[25]

Widrich's rejection of the ease of digital compositing in favor of laboriously captured, printed, torn and folded origami animations provides part of the justification for its existence. This labor, in fact, gives the lie to contemporary discourses about the ease and simplicity of digital piracy and the lack of creativity among those who violate the copyright of others. The underlying labor is self-consciously referenced only once in the film, when a train chase ends by plummeting off the side of a cliff. After plunging downward through space, the animated cutouts crash through the Mardi Gras cemetery scene from *Easy Rider*. The chaotic trains puncture this moment of relative calm, burrowing down through the film plane into a thick stack of animation cels as if descending through the earth's core. In this moment, Widrich lays bare the part of his filmmaking process that would ordinarily be suppressed.

We may view this as a return to Krauss' modernist grid, which has been deliberately tipped over and laid on its side along the Z-axis while a similar violence is done to the frame – that other inviolable rectangle of modern art: nearly every image is torn, folded, sawed or crinkled and thereby committed to a new context before being rephotographed. Fast Film is perhaps the quintessential instance of the "digital analogue" – a small but growing subset of work that attempts to renegotiate the basic terms of digital representation as something that requires attention to the material substrates of even the most ephemeral practices.

Foregrounding the Physical

While Widrich is the most virtuosic figure in this submovement, perhaps the most influential one is the French director Michel Gondry, who has taken low-tech materialist aesthetics to new heights, famously constructing animations out of everyday objects such as Legos (White Stripes, *Fell in Love With a Girl*), cardboard cutouts (Chemical Brothers, *Let Forever Be*) and the yarn figures that run amok, attacking a knitted icon of the Capital Records building – itself an icon of a former age in analogue music technology – in Steriogram's *Walkie Talkie Man*. [Fig. 5] Likewise, Gondry's brother, Olivier “Twist” Gondry created a video for the French jazz ensemble Les Fils de Teuhpu’s Bricoleur, which replicates Widrich’s animation method, while simultaneously parodying the labor-intensive process of animation by portraying a beleaguered worker who is forced to manually sort thousands of unruly images that comprise the musical performance.

Figure 5. Michel Gondry, *Walkie Talkie Man.*

It is not yet clear whether this fetishization of the material is simply an inventive backlash against the excesses of digital image manipulation, or a straightforward pastiche of previous forms. However, the Gondry brothers continue to be responsible for some of the most innovative music videos of the present decade, in part thanks to their attention to film history. Michel Gondry’s homage to Busby Berkeley dance sequences in *Let Forever Be*,

Figure 6. Michel Gondry, *Let Forever Be.*

for example, relentlessly parodies the repetitive overuse of digital effects in music videos, especially the kaleidoscopic multiplication of bodies and mechanically choreographed dance moves. [Fig. 6] The video seamlessly traverses the boundaries of analogue and digital representation, interlacing digital images with cardboard cutouts and computer-duplicated figures with look-alike dancers. More esoteric is Gondry's (perhaps unconscious) homage to Hollis Frampton's *Zorn's Lemma* (1970) in the video for Jean-Francois Coen's *La Tour de Pise*. Like the protracted alphabetic sequence in Frampton's film, the video presents images captured from signs and text fragments in commercial culture. This visualization of the language in precise synchronization with Coen's song serves to materialize the text of the vocals, in effect elevating the subtitles to the primary content of each image.

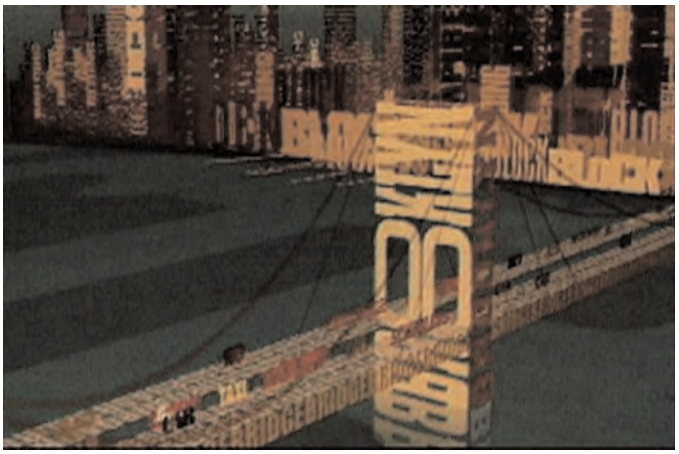


Figure 7. Antoine Bardou-Jacquet's video for Alex Gopher's *The Child*

The materialization of text in an urban landscape is nowhere more in evidence than in French designer Antoine Bardou-Jacquet's video for Alex Gopher's *The Child*. [Fig. 7] Bardou-Jacquet's all-textual rendering of New York city borrows its basic concept from Jeffrey Shaw's *Legible City* project from the late 1980s, while stripping narrative volition away from the viewer. Whereas Shaw's project allows reader-users to simulate moving through geographically and architecturally correct streets of Amsterdam, Manhattan, or Karlsruhe on a stationary bicycle while reading the text of a story mapped onto buildings in the city, *The Child* delivers a high-speed chase through the streets of New York City with both landmarks and people rendered as all text. The tension that exists in these works hinges on the conflict between real and constructed environments, as well as the insistent interplay of surface and depth. This stylized dimensional tension is taken to new heights in LA design firm Logan's Information Contraband video for DJ Money Mark. [Fig. 8] Eschewing even the minimal narrative of *The Child*, *Information Contraband* revels in pure stylistic excess, drawing its inspiration from the colorful visual aesthetics of Thai movie billboards, where two- and three-dimensional characters interact, moving seamlessly between stasis and action. Also at issue in much of this work is an ongoing negotiation of the lines between live action and animation, and photographic and digitally generated space.[26]

Figure 8. Logan, *Information Contraband*.

Against Convergence; For Syncretism

It is a truism of the digital age that media have lost their specificity, that art history's cherished formal properties have been consigned to the dustbin of history, replaced by elaborately sequenced but otherwise undifferentiated combinations of zeroes and ones. The rhetoric of digital convergence began in the research laboratories at Xerox PARC in the late 1960s and has been a dominant trope of digital culture ever since. The concept proved agreeable to the computer and entertainment industries as they sought to articulate a vision of technology to consumers eager to purchase each successive generation of media technologies en route toward one vast interoperable digital system. Convergence also works effectively at the level of practice by describing the multifunctional software tools for digital designers who often move fluidly across boundaries of sound and image editing, visual effects, CGI, interface design, and animation. Finally, convergence offers a useful model for understanding what is happening at the corporate level

in terms of mergers and the vertical conglomeration of media and technology industries.

For some theorists, however, convergence marks a dangerous turn away from the specificity of individual media. Friedrich Kittler, in *Gramophone, Film, Typewriter* (1999), describes the situation with what seems to be a rising sense of panic:

> *Before the end, something is coming to an end. The general digitization of channels and information erases the differences among individual media. Sound and image, voice and text, are reduced to surface effects, known to consumers as interface. […] And once optical fiber networks turn formerly distinct data flows into a standardized series of digitized numbers, any medium can be translated into any other. […] a total media link on a digital base will erase the very concept of medium.[27]*

For Kittler, these undifferentiated streams of digital information threaten to obviate not only discrete media, but the human bodies once capable of perceiving them. The euphoric dissolution of media and bodies resonated in late 90s digital theories that emphasized the transition from atoms to bits, and the celebratory figuring of digital media as ethereal, disembodied, cyber. The ideology of dematerialization – what Lunenfeld calls "vapor theory" – divorces the products and practices of digital culture from their position in history and the socially and materially grounded circumstances of their construction.

According to this model, not only is it impossible for non-specialists to understand the workings of digital technology, a concomitant "myth of transparency" identified by Laura Marks renders the material substrates of computer technology invisible.[28] The promise of transparent, ideally functioning technology, Marks argues, taps into latent desires for virtual immortality. When we are reminded of the physical-ness of computers (e.g., via their propensity for crashing), we are also reminded of their imminent obsolescence and with it our own mortality. As a corrective, Marks suggests looking for "digital artworks that refer to the social circumstances in which they were produced, or that draw attention to the physical platforms on which they were built."[29] For Marks, one such response lies in the fetishization of older, deliberately low-tech art forms such as ASCII art that draws attention to the physical shapes of letters on the printed page.[30]

An alternative to the homogenizing effect of convergence may be found in the language of cultural anthropology. The term syncretism, which is used to describe the layering of cultural practices brought about by colonialism or immigration – the pantheistic worship of Catholic saints in the Santeria religion, for example – may also be repurposed to designate the layering of technological practices within digital culture. Unlike convergence, a syncretic relationship does not imply the erasure or collapse of distinct practices. Rather, it describes the combination of disjunctive elements into a functional relationship that bears the continued traces of each object's former existence. One consequence of the rhetorical shift from convergence to syncretism is the potential foregrounding of historicity. Where convergence tends to be ahistorical, syncretism emphasizes the temporal gaps between objects and artifacts that remain embedded in their historical and cultural moments – not simply on a technological register, but in terms of their original cultural resonance. The concept of technological syncretism, then, permits an understanding of digital media with respect for the material elements of which they are constituted.

I believe we come closest to a meaningful engagement with the past through media when those media preserve a sense of their own embeddedness in a historical moment and their material systems of representation.

Aporias of History

Whereas the Modernist avant-garde privileged materiality as a means of exploiting the formal potentials of medium specificity, the privileged objects in this essay preserve a relation to the material world that grounds them historically. I believe we come closest to a meaningful engagement with the past through media when those media preserve a sense of their own embeddedness in a historical moment and their material systems of representation. Syncretic media, by definition, retain traces of the various competing and sometimes contradictory forms of which they are composed. In the process, these hybrid works announce a relationship to their medium that invites us to ask the right questions about how they are constructed and the potential relevance of medium specificity to understanding their importance. Arguably, it is through the foregrounding rather than the effacement of the material substrates underlying certain instances of digital media, that we find the most suggestive and historiographically relevant traces.

The title of this paper pays homage to Hans Magnus Enzensberger's essay "The Aporias of the Avant-Garde" from 1962, a cautionary tale and critique of the dangers of the ideology of the "avant-garde" being tied to radical social agendas. Enzensberger warns against the pretensions of movements like Futurism that were so easily swept up into the political ideology of fascism and the avant-garde's general tendency to slip toward variously doctrinaire forms of political sloganeering. As Enzensberger argues, an avant-garde that is unconscious of its aporias – its internal contradictions and obfuscations – is even more dangerous than the reactionary politics that inevitably surface to resist it. It is particularly important to be realistic about the limitations of the work under consideration here; to see where we are in our historical moment and to recognize the fact that the vast majority of this work, for example, recapitulates the gender, racial, and geographic biases of the entertainment industries on which it depends. Likewise, we should question this work's implication in the technology industry's discourses of democratization while remaining in service to the interests of media conglomerates and global technology industries.

But as lines between categories of digital art making continue to blur, it is necessary to re-examine outmoded distinctions between the practices and tools of cinema, video, music, animation, graphic design and motion graphics. Just as digital practitioners move fluidly across these boundaries, theorists and historians of new media must develop similarly mobile strategies of critical practice unencumbered by the burden of past media and analytical paradigms. It is not an avant-garde free of contradictions that we seek, but one that illuminates the position of digital media in relation to systems of control – including the rules of representation, technology, and history.

Steve F. Anderson
Assistant Professor of Interactive Media
School of Cinema-Television
University of Southern California
746 W. Adams Blvd.
Los Angeles, CA 90089
213-743-1933
sanderson@annenberg.edu
http://www.iml.annenberg.edu/instructors/sanderson

References:

[1] Of course there are notable exceptions, especially Holly Willis' recently published *New Digital Cinema: Reinventing the Moving Image* (Wallflower, 2005). This is as good a time as any to acknowledge my indebtedness to Holly Willis' thoughtful engagement with this body of work during her tenure as editor-in-chief of *Res Magazine* and co-curator of the ResFest, a traveling festival responsible for promoting and exhibiting some of the most interesting short form media of the past decade. Also of interest is Andrew Darley's *Visual Digital Culture: Surface Play and Spectacle in New Media Genres* (Routledge, 2000), which dealt with a previous generation of music video, and Scott Bukatman's *Matters of Gravity: Special Effects and Supermen in the 20th Century* (Duke, 2003), which is particularly useful for its commentary on the problematic role of pleasure for academics who are concerned with popular media.

[2] The primary cultural vehicles for this work have been limited to festivals and trade publications, such as the US's *Res/fest*; the UK's *onedotzero* and *Ninjatune*; and Japan's *Gas TV*.

[3] I would argue that this term is capacious and porous enough, even acknowledging its previous uses, to suggest a type of media art practice that is formally or politically experimental, innovative or provocative and I ask the reader’s indulgence in accepting this as an operational definition of “avant-garde” media art.

[4] Bill Nichols, *Representing Reality: Issues and Concepts in Documentary* (Indiana University Press: Bloomington, IN 1991), p. 4.

[5] Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (The MIT Press: Cambridge, MA 1990), p. 2.

[6] From my perspective, both Nichols and Crary choose highly unfortunate terms for describing the *real* world. Where Nichols writes about the "historical" world; Crary opts for "optically perceived” world, both of which arguably raise more objections than they dispel.

[7] Lev Manovich, "Avant-Garde as Software," http://www.manovich.net/docs/avantgarde_as_software.doc (1999), p. 12.

[8] Peter Weibel, "Jordan Crandall: Art and the Cinematographic Imaginary in the Age of Panoptic Data Processing" in Jordan Crandall, *Drive*, (ZKM: Karlsruhe, Germany, 2002), p. 2.

[9] See David James, *Allegories of Cinema: American Film in the Sixties* (Princeton University Press: Princeton, NJ, 1989).

[10] Holly Willis, *New Digital Cinema* (Wallflower Press: London, UK, 2005), Chap. 2.

[11] Rosalind Krauss, *The Originality of the Avant-Garde and Other Modernist Myths* (The MIT Press: Cambridge, PA 1993), p. 158.

[12] Ibid, p. 160.

[13] http://www.greyvideo.com

[14] The design team of Ramon & Pedro are actually two Swiss designers named Antoine and Laurent.

[15] This position, of course, grows increasingly ironic in light of the case mounted by the Justice Department against CAE member Steve Kurtz as retaliation for the group's activism with regard to biotechnology.

[16] *Electronic Civil Disobedience and Other Unpopular Ideas* was also the title of CAE's previous book (Autonomedia, 2001).

[17] *Digital Resistance: Explorations in Tactical Media* (Autonomedia: New York, NY, 2002)

[18] Robert Greenwald's well-meaning but overwrought documentary about Fox News, *Outfoxed: Rupert Murdoch's War on Journalism* (2004), performs a similarly manipulative rhetorical maneuver in illustrating its critiques against the network with rapid fire montage sequences culled from hundreds or perhaps thousands of hours of recorded broadcasts. The result is a kind of temporary, rhetorical assault that might seem discursively dishonest and unconvincing to anyone who is not already aligned with the film politically. For me, what makes Outfoxed interesting is Greenwald's decision to release his original interview materials into the public domain to be freely used by others – which again underscores the importance of the peer network over the individual artwork as a primary site of political resistance.

[19] Peter Lunenfeld, *Snap to Grid: A User's Guide to Digital Arts, Media and Cultures* (The MIT Press: Cambridge, MA, 2000) p. 120-1.

[20] Ibid. [9], Chap. 2.

[21] http://www.wildernesspuppets.net

[22] The system works with any piece of video footage but Lattanzi recommends using pornography, surveillance footage, or home movies.

[23] Another example is Japanese filmmaker Sueoka Ichiro, who has completed a series of short films and gallery-based installations titled "Requiem for Avant-Garde film." Sueoka's body of work includes titles such as *A Film in Which There did NOT Appear Sprocket Holes, Edge Lettering without Dirt Particles*, which references George Landow's *Film in Which There Appear Sprocket Holes, Edge Lettering, Dirt Particles and etc.* (1966, 16mm, 4mins, US); *A flick film in which there appear Liz and Franky is composed under the score of ARNULF RAINER by P. Kubelka* on NTSC (2000), which uses footage of Elizabeth Taylor from *Elephant Walk* (1954) and Frank Sinatra from *Come Blow Your Horn* (1963) to substitute for the alternating white and black frames of Kubelka's *Arnulf Rainer* (1960); and *Studies for Serene Velocity* (2003), which offers a direct homage to Ernie Gehr's *Serene Velocity*, exploring the length of a hallway through rapidly varying focal lengths.

[24] In *The Language of New Media* (MIT, 2001), Lev Manovich somewhat ominously predicts a day when "given enough time and money, one can create what will be the ultimate digital film: 90 minutes, 129,600 frames completely painted by hand from scratch, but indistinguishable in appearance from live photography."

[25] It is worth noting here that nearly every frame in *Fast Film* involves the infringement of not just one but several different copyrights. It is ironic that *Fast Film* shares a material mode of production with the films in the Library of Congress' Paper Print Collection. This collection was responsible for the preservation of about 3000 films made prior to 1912 when printing images on rolls of paper was the only way to register a copyright; and while the nitrate originals have long since disintegrated or combusted, the paper prints have remained in good condition. A related area to consider are the continuities with the paper base of early computing, including the Turing machine and the punch card-based Hollerith machine.

[26] For the most lucid and complete survey of this work with regard to digital media's impact on visual culture, see Holly Willis' *New Digital Cinema*.

[27] Friedrich Kittler, *Gramophone, Film, Typewriter* (Stanford University Press, 1999) p. 1.

[28] Another way to think about this is in terms of a shift, which has roughly straddled the turn of the 20th - 21st centuries, from a culture that was defined by visuality – e.g., the image saturation of television, movies and advertising – to one that is on its way to being defined, if not by invisibility, then by the tension between visibility and invisibility as intangible global networks and an information economy continue to serve as a staging area for cultural anxieties. This is perhaps most painfully apparent in the practice of color-coded terror alerts which seek to articulate the nation's fear of invisible "sleeper cells" and international terror networks in the visible register.

[29] Laura U. Marks, "Lo-Tek Media: Immanence Online," ISEA 2000 International Symposium on Electronic Art; http://www.art3000.com/actes_doc/07_marks.rtf

[30] Indeed a sub-genre of ASCII-based videos has appeared in recent years including the recent Beck video for Black Tambourine directed by Associates in Science; the all ASCII short film *The Case of the Eidetic Child* directed by Ryan McGinness and panOptic; and Yoshi Sodeoka's ASCII Bush, which converts George H.W. Bush's 1991 and George W. Bush's 2003 State of the Union addresses into online ASCII files; http://www.turbulence.org/spotlight/ASCII_BUSH

Art As Antibody

Version 1.8

Joline Blais and Jon Ippolito

Do today's artists wield too much influence?

In every past age since Plato, this would have seemed an absurd question. Artists may have been "unacknowledged moral legislators" (Shelley [1]) or "antennae of the race" (Pound), but Euro-ethnic cultures have rarely accorded artists direct influence outside of the gallery or museum. Géricault and Picasso had to be content with painting representations of the Medusa or Guernica rather than taking part in historical incidents. In our age, the question seems even more ludicrous, since the end of the millennium in the late 1990s saw many creators abandon the term artist for more influential vocations. Vito Acconci changed his job description to "designer" and Brenda Laurel to "culture worker," while Alexei Shulgin told artists to "forget the very word and notion *art*." [2] And then there were the countless artists who during the dot-com boom gave up their unlikely quest for fulfillment in the art world to join what turned out to be a just-as-unlikely quest for fulfillment as "creatives" in e-commerce and game companies.

Yet, as though to compensate for the exodus from the traditional art world to the "creative industries," ingenuity erupting far from art studios and galleries has started to take on a function that's looking more and more like art. Creative people typing lines of self-replicating software, splicing genes at lab benches, and rigging makeshift WiFi networks are reshaping our culture's vision of itself. Although they ply new techniques like Polymerase Chain Reaction and PHP, they choose not to subordinate their work to the political and economic imperatives governing their colleagues in scientific or media industries. Instead they wield these powerful tools in what might best be described as an artistic bent – one whose influence extends far beyond the conventional confines of art, leveraging the Internet to infiltrate stock markets, sway court cases, and network bedrooms.

If art's function has changed from representation to something more influential, how do we explain the newfound clout exercised by this new form of artistic practice, and what limits if any should society impose on it? This essay focuses on two of the most potent features of art's new toolkit: perversion and execution.

Perversion

Artists have always been perverse in their way, fashioning Madonnas out of prostitutes (Caravaggio) or elephant dung (Ofili). But digital and genetic techniques give artists the ability to *automate* perversion. Artists who wield these tools can summon forth entire universes of unlikely forms from a few strands of DNA or lines of generative code:

-John F. Simon, Jr. writes a couple lines of Java that draw in succession every icon that can be described by a 32x32 pixel black-and-white image.
-The Belgian / Dutch duo jodi alter some display variables in the Quake computer game to generate an ensemble of dysfunctional versions of this popular First Person Shooter. [Fig. 1]
-Computer scientist-turned-terraformer Ken Musgrave lets his users tweak fractal parameters to create and explore imaginary planets in a virtual 3D universe. [Fig. 2]
-Italian hacker Jaromil writes a snippet of ASCII graffiti that's only 13 characters but enough to crash a Unix computer.
-Tim Flaherty and Stuart Langridge devise a tool for anyone to make the ASCII equivalent of paint by numbers by reverse-engineering the color-coding capability of Google's news search engine. [Fig. 3]
-Mark Napier codes a browser that turns Web design inside out by foregrounding the HTML tags, JavaScript, and other fine print of a Web page. [Fig. 4]

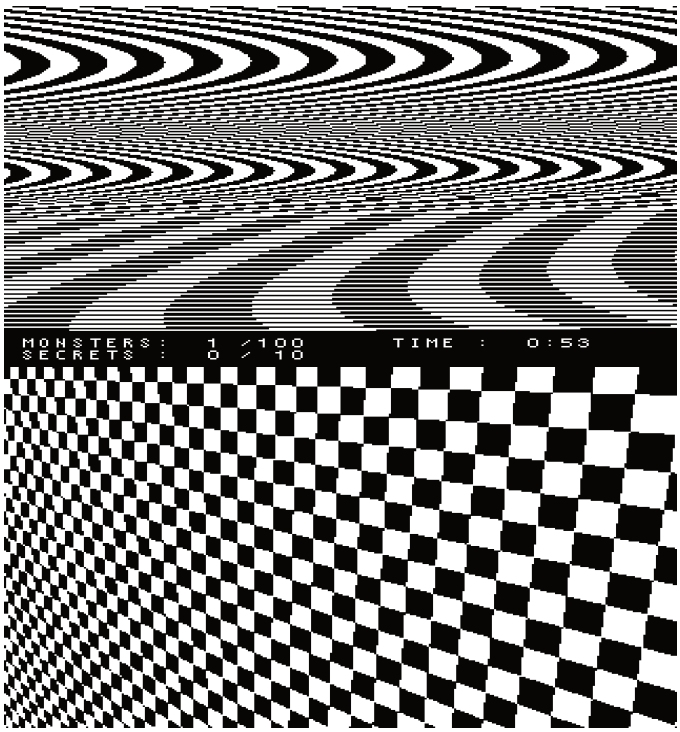
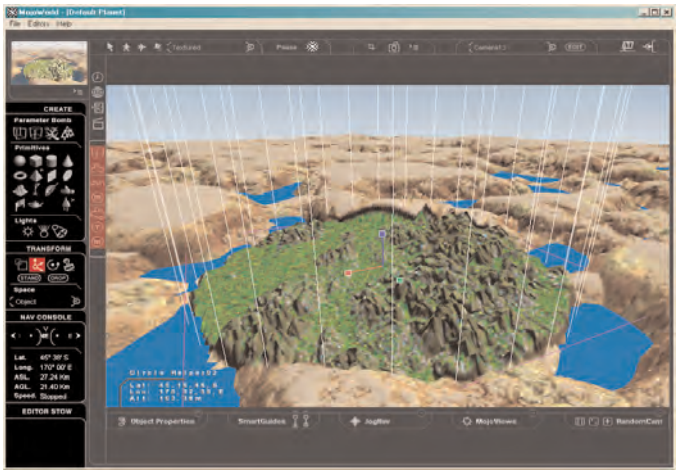


Figure 1. jodi, *Untitled Game*.



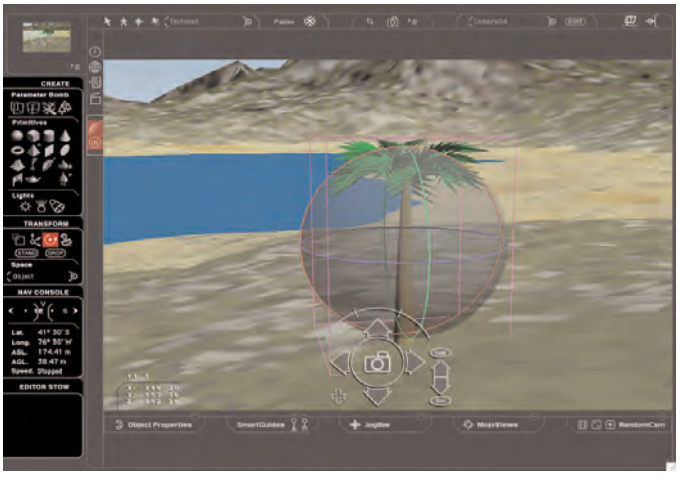


Figure 2. Ken "Doc Mojo" Musgrave, *Mojoworld*.

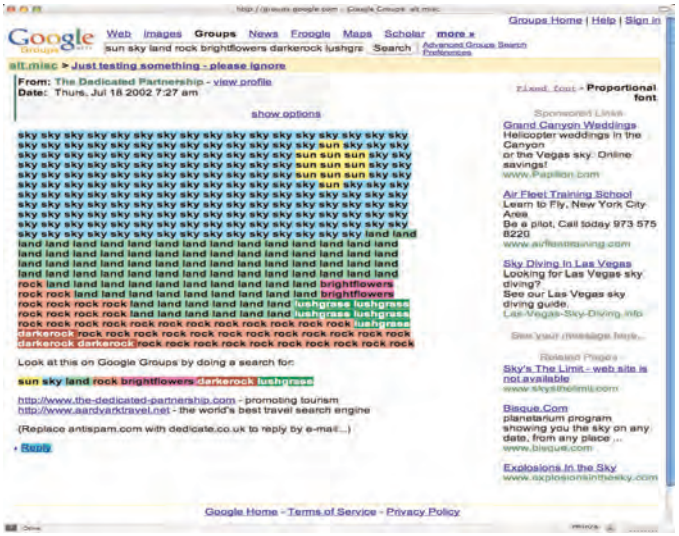


Figure 3. Tim Flaherty, Stuart Langridge et al., Google Groups Art in action. http://www.kryogenix.org/code/browser/aqgoogle, accessed February 9, 2006.

As these examples demonstrate, some of the most renowned online artists take Freud's notion of polymorphous perversion to an automated extreme, following Cornelia Solfrank's dictum, "A smart artist makes the machine do all the work." [3]

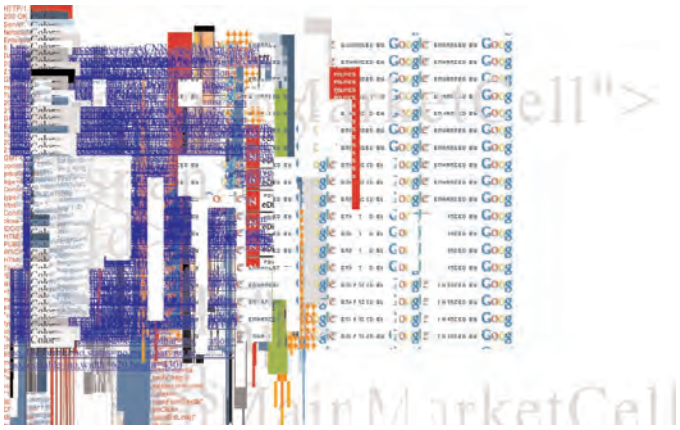


Figure 4. Mark Napier, *Shredder*, as applied to Google.com/eBay.com.

Execution

If perversion is a 21st-century artist's most potent technique for producing cultural forms, execution is her most potent technique for distributing them. "To execute" is computer parlance for the act of running a program, as when a user launches a word-processor or spreadsheet – but the term's meaning can be extended to include triggering an existing system to discharge a task that changes the state of that system. Executable art hijacks today's computational, legal, and economic networks, propagating outside the studio or gallery to affect distant people and events:

-Joe Davis hijacks the reproductive mechanism of E. coli by drawing a picture in its DNA and then unleashing this "infogene" into the natural ecosystem.
-Tom Ray hijacks a computer network to breed computer viruses by designing a wildlife sanctuary that enables them to migrate from hard drive to hard drive.
-The Yes Men hijack the Web domain DowEthics.com and use this parodic site to announce a public apology for the Bhopal gas disaster, dropping Dow's share price 4.2% in 23 minutes.
-Dave Touretzky hijacks the concept of a gallery to showcase songs, haikus, and T-shirts that feature copyright-thwarting code, swaying a federal judge's argument about the boundary between free and "illegal" expression. [Fig. 5]
-MetaMute magazine hijacks ECHELON by promulgating online fiction laced with trigger words designed to decoy this global surveillance network. [Fig. 6]

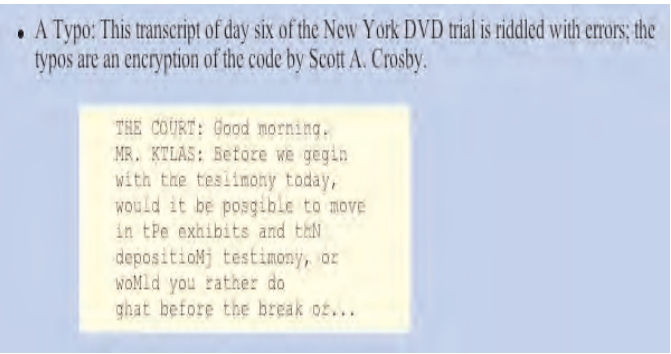


Figure 5. The "illegal" code for copying a DVD as rendered in the DVD logo, a tie, and typos in a transcript of the trial of publishers of the code. Featured in Dave Touretzky's *Gallery of CSS DeScramblers*, http://www.cs.cmu.edu/~dst/DeCSS/Gallery, accessed February 9, 2006.

Literature has long held the power to sway its readers' hearts and minds, but executable literature does this by acting directly on the networked infrastructures of power woven through the digital fabric of contemporary life. If traditional literature produces satisfaction through catharsis while leaving the world's injustices unchanged, executable literature produces satisfaction through engagement – acting directly on sites of injustice.

Figure 6. "Kinderkin," one of the entries in the Metamute ECHELON literary context. This example of "executable literature" has been highlighted to show trigger words designed to fool a government spy network.

Viral Powers

Some have described the new powers art wields once released from the art world, such as perversion and execution, as viral. Andy Warhol is said to have updated his prediction that everyone would be famous for 15 minutes to the claim that "in 15 minutes, everyone will be famous." [4] While either claim seemed unrealistic in 1968, the advent of a "Warhol worm" in 2003 – a virus that infected 90% of vulnerable computers within 10 minutes – put that fantasy within reach. Commercial photographer Oliviero Toscani, who shoots in-your-face political images that have turned magazine ads and bus placards from advertising into agitprop, also reaches a wide audience. His ads for the "United Colors of Benetton" marketing campaign feature images of ten-story-high condoms to increase AIDS awareness and three beef hearts labeled "WHITE BLACK YELLOW" to reveal the absurd dynamics of racism. [Fig. 7] "I act as a virus against the commercial world," Toscani avowed. "Art is a virus." [5]

The viral metaphor is indeed tempting: viruses are perverse – they mutate; and executable – they hijack the host's means of replication to further their own proliferation. However, viruses originate outside a host organism and are interested in that organism's surviving only long enough to enable it to infect other hosts. Art, on the other hand, originates in and is symbiotic with the larger social body. Its long-term survival – and, many would say, its meaning – depends on the survival of the cultures it celebrates or critiques.

AGTT AGGG AGAA AAGG AGAA AGGG AGAA AGAA CGAT CTAT CTAT CCTT CGCA CGCC CTAT CGAT CTAG CGAC CGTC CGAG CGTA CGCC AGTG CGAT AAGG AGAA AGGG AAGG AGAA AGGG AGAA AGAA CCAG CGCC CGTA CGCC CGAC CTAT CGCC CGCA AGAA CTCC CGTG CGCA CGCC CTAG AGAA CTCA CGGA CGCC AGAA CTCG CGCC CTAG CTAT CGGC CGTT CGTG AGAA ATAG AGAA CGTT CGCG AGAA CTCA CGGA CGCC AGAA CACT CCAA CATA AGTG AAGG AGAA AGGG AAGG AGAA AGGG AGAA AGAA CAAT CGTT CTAA CTGC CTAG CGGC CGCT CGGA CTCA AGAA ATAC ATGC ATGC ATGC AGAA CACA CGCC CTAG CGCC CGGT AGAA CACG CGAC CTCT CGAT CTCC CTAT AAGG AGAA AGGG AAGG AGAA AGGG AGAA AGAA CCCA CGGA CGGC CTAT AGAA CGCG CGGC CGTA CGCC AGAA CGAT CGTT CGTG CTCA CGAC CGGC CGTG CTAT AGAA CGCG CTCC CGTG CGAT CTCA CGGC CGTT CGTG CTAT AGAA CTCA CGTT AGAA CGCA CGCC CTAT CGAT CTAG CGAC CGTC CGAG CGTA CGCC AGAA CAAT CCAT CCAT AGAA CGCC CGTG CGAT CTAG CTGC CTAA CTCA CGCC CGCA AGAA CACA CCCG CACA AGAA CGAT CGTT CGTG CTCA CGCC CGTG CTCA AAGG AGAA AGGG AAGC AAGG AGAA AGGG AGTT AAGG AAGG AGTT AGGG AAGG AGAA AGGG AGAA AGAA CCAT CTCA CGGC CGTA CGTA AGAA CGGC CGTG AGAA CTAA CTAG CGTT CGCT CTAG CGCC CTAT CTAT ATGG AGAA AGAA CCAG CGCC CGTC CGTT CTCG CGCC AGAA CTCA CGGA CGCC AGAA CTCC CTAT CGCC AGAA CGTT CGCG AGAA CTCA CGGA CGCC AGAA CGAG CGGC CTCA CCTT CTAG CGCC CTCG CGCC CTAG CTAT CGCC CCGT CCTC AGAA CTCA CGAC CGAG CGTA CGCC AGAA CGAG CTGC AGAA CTAG CGCC CGAT CGTT CGCA CGGC CGTG CGCT AAGG AGAA AGGG AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA CTCA CGGA CGCC AGAA CGCT CGCC CGTG CGCC CTAG CGAC CTCA CGGC CGTT CGTG AGAA CGTT CGCG AGAA CATA CACG CCAT CCAG ATAC AGTG AGAA AGAA CACG CGGC CGTG CGGC CTAT CGGA AGAA CGAT CGTT CGTC CGAG CGGC CGTG CGGC CGTG CGCT AGAA CTCA CGGA CGGC CTAT AGAA CTCT CGGC CTCA CGGA AAGG AGAA AGGG AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA AGAA CTCA CGGA CGCC AGAA CGAT CGAT CTAT CTAT AGAA CGAC CTCC CTCA CGGA CGCC CGTG CTCA CGGC CGAT CGAC CTCA CGGC CGTT CGTG AGAA CGAT CGTT CGCA CGCC AGTG AAGG AGAA AGGG AAGG AGAA AGGG AGTT AAGG AAGG AGAT CGGC CGTG CGAT CGTA CTCC CGCA CGCC AGAA ATTA CTAT CTCA CGCA CGGC CGTT AGTG CGGA ATTG AAGG AGAT CGGC CGTG CGAT CGTA CTCC CGCA CGCC AGAA ATTA CTAT CTCA CTAG CGGC CGTG CGCT AGTG CGGA ATTG AAGG AGAT CGGC CGTG CGAT CGTA CTCC CGCA CGCC AGAA AGAG CGAT CTAT CTAT AGTC CGCA CGCC CTAT CGAT CTAG CGAC CGTC CGAG CGTA CGCC AGTG CGGA AGAG AAGG AAGG CTCA CTGC CTAA CGCC CGCA CGCC CGCG AGAA CTCC CGTG CTAT CGGC CGCT CGTG CGCC CGCA AGAA CGAT CGGA CGAC CTAG AGAA CGAG CTGC CTCA CGCC ATGT AAGG AAGG AGTT AGGG AAGG AGAA AGGG AAGG AGAA AGGG AGAA AGAA CTAT CGTT CGTC CGCC AGAA CTCA CGAC CGAG CGTA CGCC CTAT AGAA CTCC CTAT CGCC CGCA AGAA CGCG CGTT CTAG AGAA CGCA CGCC CTAT CGAT CTAG CGAC CGTC CGAG CGTA CGGC CGTG CGCT AGAA CTAT CGCC CGAT CTCA CGTT CTAG CTAT AGAA CGAC CGTG CGCA AGTT CGTT CTAG AGAA CGCA CGCC CGAT CTAG CTGC CTAA CTCA CGGC CGTG CGCT AGAA CTCA CGGC CTCA CGTA CGCC AGAA CGGT CGCC CTGC CTAT AAGG AGAA AGGG AAGG AGAA AGGG AGTT AAGG AAGG CTAT CTCA CGAC CTCA CGGC CGAT AGAA CGAG CTGC CTCA CGCC AGAA CGAT CTAT CTAT CTCA CGAC CGAG ATAC CCGT ATAG ATCC ATCG CCTC ATTC AAGG CTGT AAGG AAGC ATAA CTGA ATAT ATAT AGTA ATAA CTGA ATCT ATAT AGTA ATAA CTGA ATAT CGAG AGTA ATAA CTGA ATAG ATCG AGTA ATAA CTGA ATCG ATAT AGTA ATAA CTGA ATAG ATAT AGTA ATAA CTGA ATCG CGAG AGTA ATAA CTGA ATCT ATCG AGTA ATAA CTGA ATAT CGCC AGTA ATAA CTGA ATCT CGCC AGTA ATAA CTGA ATAT ATCG AGTA ATAA CTGA ATAG CGAG AGTA ATAA CTGA ATCG CGCC AGTA ATAA CTGA ATAG CGCC AGTA ATAA CTGA ATCG ATCG AGTA ATAA CTGA ATCT CGAG AGTA AAGG AAGC ATAA CTGA CGCA ATAT AGTA ATAA CTGA ATGC ATAT AGTA ATAA CTGA CGCA CGAG AGTA ATAA CTGA ATAA ATCG AGTA ATAA CTGA ATCA ATAT AGTA ATAA CTGA ATAA ATAT AGTA ATAA CTGA ATCA CGAG AGTA ATAA CTGA ATGC ATCG AGTA ATAA CTGA CGCA CGCC AGTA ATAA CTGA ATGC CGCC AGTA ATAA CTGA CGCA ATCG AGTA ATAA CTGA ATAA CGAG AGTA ATAA CTGA ATCA CGCC AGTA ATAA CTGA ATAA CGCC AGTA ATAA CTGA ATCA ATCG AGTA ATAA CTGA ATGC CGAG AGTA AAGG AAGC ATAA CTGA ATCC ATCT AGTA ATAA CTGA ATAC ATCT AGTA ATAA CTGA ATCC CGCG AGTA ATAA CTGA ATGA ATAG AGTA ATAA CTGA CGAT ATCT AGTA ATAA CTGA ATGA ATCT AGTA ATAA CTGA CGAT CGCG AGTA ATAA CTGA ATAC ATAG AGTA ATAA CTGA ATCC CGAC AGTA ATAA CTGA ATAC CGAC AGTA ATAA CTGA ATCC ATAG AGTA ATAA CTGA ATGA CGCG AGTA ATAA CTGA CGAT CGAC AGTA ATAA CTGA ATGA CGAC AGTA ATAA CTGA CGAT ATAG AGTA ATAA CTGA ATAC CGCG AGTA AAGG AAGC ATAA CTGA CGCA ATGC AGTA ATAA CTGA ATGC ATGC AGTA ATAA CTGA CGCA ATAC AGTA ATAA CTGA ATAA ATAA AGTA ATAA CTGA ATCA ATGC AGTA ATAA CTGA ATAA ATGC AGTA ATAA CTGA ATCA ATAC AGTA ATAA CTGA ATGC ATAA AGTA ATAA CTGA CGCA ATGA AGTA ATAA CTGA ATGC ATGA AGTA ATAA CTGA CGCA ATAA AGTA ATAA CTGA ATAA ATAC AGTA ATAA CTGA ATCA ATGA AGTA ATAA CTGA ATAA ATGA AGTA ATAA CTGA ATCA ATAA AGTA ATAA CTGA ATGC ATAC AGTA AAGG AAGC ATAA CTGA ATAT CGCA AGTA ATAA CTGA ATCT CGCA AGTA ATAA CTGA ATAT ATCC AGTA ATAA CTGA ATAG ATCA AGTA ATAA CTGA ATCG CGCA AGTA ATAA CTGA ATAG CGCA AGTA ATAA CTGA ATCG ATCC AGTA ATAA CTGA ATCT ATCA AGTA ATAA CTGA ATAT CGAT AGTA ATAA CTGA ATCT CGAT AGTA ATAA CTGA ATAT ATCA AGTA ATAA CTGA ATAG ATCC AGTA ATAA CTGA ATCG CGAT AGTA ATAA CTGA ATAG CGAT AGTA ATAA CTGA ATCG ATCA AGTA ATAA CTGA ATCT ATCC AGTA AAGG AAGC ATAA CTGA CGCA CGCA AGTA ATAA CTGA ATGC CGCA AGTA ATAA CTGA CGCA ATCC AGTA ATAA CTGA ATAA ATCA AGTA ATAA CTGA ATCA CGCA AGTA ATAA CTGA ATAA CGCA AGTA ATAA CTGA ATCA ATCC AGTA ATAA CTGA ATGC ATCA AGTA ATAA CTGA CGCA CGAT AGTA ATAA CTGA ATGC CGAT AGTA ATAA CTGA CGCA ATCA AGTA ATAA CTGA ATAA ATCC AGTA ATAA CTGA ATCA CGAT AGTA ATAA CTGA ATAA CGAT AGTA ATAA CTGA ATCA ATCA AGTA ATAA CTGA ATGC ATCC AGTA AAGG AAGC ATAA CTGA ATCC ATGC AGTA ATAA CTGA ATAC ATGC AGTA ATAA CTGA ATCC ATAC AGTA ATAA CTGA ATGA ATAA AGTA ATAA CTGA CGAT ATGC AGTA ATAA CTGA ATGA ATGC AGTA ATAA CTGA CGAT ATAC AGTA ATAA CTGA ATAC ATAA AGTA ATAA CTGA ATCC ATGA AGTA ATAA CTGA ATAC ATGA AGTA ATAA CTGA ATCC ATAA AGTA ATAA CTGA ATGA ATAC AGTA ATAA CTGA CGAT ATGA AGTA ATAA CTGA ATGA ATGA AGTA ATAA CTGA CGAT ATAA AGTA ATAA CTGA ATAC ATAC AGTA AAGG AAGC ATAA CTGA CGCA ATCT AGTA ATAA CTGA ATGC ATCT AGTA ATAA CTGA CGCA CGCG AGTA ATAA CTGA ATAA ATAG AGTA ATAA CTGA ATCA ATCT AGTA ATAA CTGA ATAA ATCT AGTA ATAA CTGA ATCA CGCG AGTA ATAA CTGA ATGC ATAG AGTA ATAA CTGA CGCA CGAC AGTA ATAA CTGA ATGC CGAC AGTA ATAA CTGA CGCA ATAG AGTA ATAA CTGA ATAA CGCG AGTA ATAA CTGA ATCA CGAC AGTA ATAA CTGA ATAA CGAC AGTA ATAA CTGA ATCA ATAG AGTA ATAA CTGA ATGC CGCG AGTA AAGG AAGC ATAA CTGA ATCC ATAT AGTA ATAA CTGA ATAC ATAT AGTA ATAA CTGA ATCC CGAG AGTA ATAA CTGA ATGA ATCG AGTA ATAA CTGA CGAT ATAT AGTA ATAA CTGA ATGA ATAT AGTA ATAA CTGA CGAT CGAG AGTA ATAA CTGA ATAC ATCG AGTA ATAA CTGA ATCC CGCC AGTA ATAA CTGA ATAC CGCC AGTA ATAA CTGA ATCC ATCG AGTA ATAA CTGA ATGA CGAG AGTA ATAA CTGA CGAT CGCC AGTA ATAA CTGA ATGA CGCC AGTA ATAA CTGA CGAT ATCG AGTA ATAA CTGA ATAC CGAG AGTA AAGG AAGC ATAA CTGA CGAG ATAT AGTA ATAA CTGA CGCG ATAT AGTA ATAA CTGA CGAG CGAG AGTA ATAA CTGA CGAC ATCG AGTA ATAA CTGA CGCC ATAT AGTA ATAA CTGA CGAC ATAT AGTA ATAA CTGA CGCC CGAG AGTA ATAA CTGA CGCG ATCG AGTA ATAA CTGA CGAG CGCC AGTA ATAA CTGA CGCG CGCC AGTA ATAA CTGA CGAG ATCG AGTA ATAA CTGA CGAC CGAG AGTA ATAA CTGA CGCC CGCC AGTA ATAA CTGA CGAC CGCC AGTA ATAA CTGA CGCC ATCG AGTA ATAA CTGA CGCG CGAG AGTA AAGG AAGC ATAA CTGA ATAT ATCT AGTA ATAA CTGA ATCT ATCT AGTA ATAA CTGA ATAT CGCG AGTA ATAA CTGA ATAG ATAG AGTA ATAA CTGA ATCG ATCT AGTA ATAA CTGA ATAG ATCT AGTA ATAA CTGA ATCG CGCG AGTA ATAA CTGA ATCT ATAG AGTA ATAA CTGA ATAT CGAC AGTA ATAA CTGA ATCT CGAC AGTA ATAA CTGA ATAT ATAG AGTA ATAA CTGA ATAG CGCG AGTA ATAA CTGA ATCG CGAC AGTA ATAA CTGA ATAG CGAC AGTA ATAA CTGA ATCG ATAG AGTA ATAA CTGA ATCT CGCG AGTA AAGG AAGC ATAA CTGA CGAG ATGC AGTA ATAA CTGA CGCG ATGC AGTA ATAA CTGA CGAG ATAC AGTA ATAA CTGA CGAC ATAA AGTA ATAA CTGA CGCC ATGC AGTA ATAA CTGA CGAC ATGC AGTA ATAA CTGA CGCC ATAC AGTA ATAA CTGA CGCG ATAA AGTA ATAA CTGA CGAG ATGA AGTA ATAA CTGA CGCG ATGA AGTA ATAA CTGA CGAG ATAA AGTA ATAA CTGA CGAC ATAC

Figure 5. The "illegal" code for copying a DVD as rendered in DNA code, featured in Dave Touretzky's *Gallery of CSS DeScramblers*.

Figure 7. Oliviero Toscani's photographs from his "United Colors of Benetton" campaign. http://olivierotoscani.com/, accessed February 9, 2006.

Of course, artists are not always comfortable being associated with society, and the feeling is mutual. But with rare exceptions like Goebbel's book-burnings and Stalin's poet-purges, no Euro-ethnic society since Plato's Greece has really succeeded in booting artists out altogether; they may be a social irritant, a fly in the ointment, but they are part of the culture along with village idiots, criminals, and used-car salesmen. Art is an unruly, pesky, troubling symbiont. Indeed, the goal of an artist is not to expend or destroy society but to serve as an internalized image of what society is not.

This is a daunting task, and one for which Euro-ethnic cultures offer no obvious model. The best metaphor for art's contemporary role may be a microbe, but one internal rather than external: the antibody.

Antibodies Are Perverse

The job of an antibody is to keep up with viruses, so it's not surprising that antibodies share many of the same powers as viruses – including perversion and execution. Antibodies are proteins dangling on the surface of a class of white blood cells called the lymphocytes. Trillions of antibodies course through the bloodstream, each a complex organic molecule twisted into a distinctive three-dimensional shape that serves as a unique portrait of a particular foreign agent. Antibodies make reliable detectors of viruses and other foreign lumps of protein because for any given virus there will be only one antibody that exactly dovetails with it. A small fraction of antibodies are inherited from the mother in the womb; the body makes the rest. But it's no mean feat to generate a cellular database of foreign dangers you have never encountered. How can the body tell what chicken pox looks like without letting some inside its skin?

The answer lies in an ingenious mechanism described by biologist Gerald Edelman as a genetic "jumbler." Like everything else in a cell, the exact shape of the protein dangling from a lymphocyte is determined genetically. Unlike the stable genes for its membrane or nucleus, however, the genetic material corresponding to a lymphocyte's receptor is prone to shuffle itself during cell reproduction. As a consequence of this built-in randomizer, each of the billions of lymphocytes initially produced by the body bears a different chemical "lure" on its surface. Even if a chicken pox virus has never entered the bloodstream before, there's probably a white blood cell somewhere with a protein to match. That's how the immune system "knows" what chicken pox looks like before it even encounters it.

Online artists manipulate digital code to make art much as the immune system manipulates genetic code to make antibodies. Like the immune system's polymorphous antibody production, this perverse practice lends code art a quirky and prophetic vision that is unlikely to emerge from a purely utilitarian approach. The misuse of genetic code – which might prove lethal elsewhere in the body – allows the immune system to anticipate shapes it has never encountered. Artists employ a similarly wrongheaded strategy, playfully misusing computer, genetic, and social codes to reveal the ways in which society is being shaped by new technological and political forces. [Fig. 8]

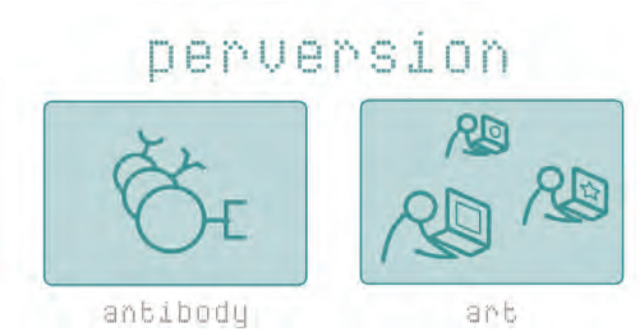


Figure 8. Perversion is the ability to misuse codes, whether genetic, technological, or social, to produce new forms of biological or cultural expression. Diagram drawn from Joline Blais and Jon Ippolito, *At the Edge of Art* (Thames & Hudson: London, 2006).

Antibodies Are Executable

When it comes to executing code – especially the DNA that controls their own reproduction – lymphocytes are trigger-happy. If an antibody ever finds and latches onto its complementary virus, the match turns the lymphocyte into a chemical warning beacon. Even more importantly, the activated lymphocyte also undergoes the microbial equivalent of going into heat: it divides like crazy, filling the bloodstream with countless clones of itself, each of which is perfectly shaped to link up with the offending invader.

A stimulated lymphocyte creates new antibodies at the astounding rate of 10,000 molecules per cell per second [6], triggering a systemic change in the lymphatic and circulatory systems. At first the bloodstream may contain only a handful of antibodies to match a chicken pox virus, but thanks to the executability of genetic code, within a few days billions of chicken pox will meet their match.

"To execute," in the world of genetic or computer code, means to turn the potential power of instructions into the actual power of behavior. But there are many codes at play in both the immunological and social bodies. The immune system executes its code when it recognizes invasion of the body by foreign code (e.g. a virus); digital art executes its code when it recognizes invasion of the social body by codes that appear foreign or harmful, whether they are cultural, legal, or social. [Fig. 9]

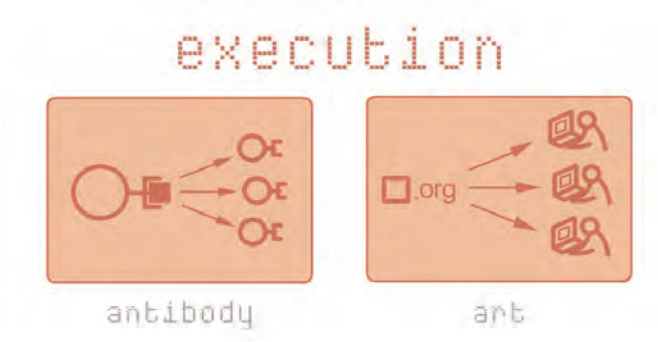


Figure 9. Whether exploited by antibodies or artists, execution is the triggering of an existing system to automate a task that changes the state of that system. Diagram drawn from Joline Blais and Jon Ippolito, *At the Edge of Art* (Thames & Hudson: London, 2006).

Antibodies Are Liminal

So far it would seem that antibodies and viruses operate by comparable mechanisms, but they just happen to be on opposite sides of the ongoing battle for dominance in the bloodstream. But antibodies are accountable in ways that viruses are not, which is what makes them a more interesting metaphor for art of the Internet age. Antibodies are mechanisms for envisioning and populating the body with alien forms. They occupy a liminal space between self and other, not entirely under the control of either.

If antibodies are the avant-garde of the immune system, they are not subservient to a top-down command and control system. Although biologists once assumed that the body instructed the immune system how to respond to a chicken pox virus, subsequent discoveries proved the exact opposite: antibodies function by a bottom-up model, by selection rather than instruction. The bone marrow produces a million varieties of antibodies, 99% of which, it must be said, will never serve any function whatsoever. It is only when an antibody coursing through the bloodstream happens to match up with a foreign body that it reproduces wildly, countering the pathogen's invasion in the short term and lingering in the bloodstream to form a somatic memory in the long term.

Similarly, the NEA shouldn't tell artists what subjects to paint or code to write. Like the B-cells on the immune system's front line, artists are better positioned than any centralized establishment to spot and confront pressing cultural issues, whether technological (gene harvesting), legal (music piracy), or personal (online intimacy). Dispersed across scientific labs, virtual communities, and street corners rather than cosseted in studios and concert halls, artists represent a grass-roots defense against invasive cultural memes.

Of course, even a grass-roots defense is still defensive – a truism that would seem to cast doubt on the immune system as a metaphor for the newfound, pro-active power that art wields in the Internet age. After all, isn't much of the motivation for art's eruption outside of galleries and museums precisely to avoid the emasculation of power that attends its circumscription by the white cube of art? Aren't today's creative thinkers targeting the stock exchange, global surveillance networks, and restrictive copyright laws precisely because they think these are unhealthy institutions that need attacking rather than healthy institutions that need defending?

To answer this reasonable objection requires a more nuanced look at the immune system. Natural antibodies, like components in many complex adaptive systems, work to keep the system in balance with its environment. No mammal would ever have evolved without some means of maintaining a balance of power between self and other; over the past 500 million years, immune systems have endowed vertebrate metabolisms with just enough stability for their populations to co-evolve into complex and variegated ecologies. For healthy organisms, this has often meant disarming malignant invaders, as in the case of smallpox and malaria. On occasion, it has meant welcoming them into a synergistic relationship with the host, as in the case of mitochondria or *E. coli.* This encounter with otherness is healthy for the entire ecosystem; it is not a colonial mission to diminish otherness outside the body. [7] The immune system is the aperture, the valve that opens or closes the body to the rest of the microbial world.

There are times, however, when the animal byproducts of evolution are unsustainable – when an organism's metabolism is out of balance with its environment, and perhaps shouldn't survive, at least in its current form. Indeed, sometimes the body defends itself all too well [8], at which point the immune system's mission of defending the body is no longer warranted. When the body's intolerance of otherness means that no aliens cross the skin barrier, when the flow of information across the immune aperture gets squeezed to a trickle, the immune system can turn on its own host.

In biology, this condition is called "autoimmunity": the organism quite literally no longer recognizes itself, and its antibodies challenge the body's own tissues instead of foreign agents. In systemic autoimmune disorders such as Lupus, antibodies target the entire body. In other autoimmune responses, antibodies target specific aspects of self: the skin in Psoriasis; the pancreas in Type 1 Diabetes; nerves in Multiple Sclerosis; bone joints in Rheumatoid Arthritis. Interestingly, epidemiologists have noted an inverse relationship between infec-

tious diseases and autoimmune disorders. [9] In cultures where smallpox or malaria is rampant, autoimmune diseases are rare, while in those with relatively few external scourges, the immune system appears more likely to target its own host. It is as though the immune system expects a steady diet of otherness from the external environment, and if it doesn't find enough otherness outside, it looks for otherness inside.

Contemporary human bodies are more-or-less stable products of evolution, and cases of autoimmunity among human populations can result in tragic suffering or at best annoyance and discomfort. The situation is not as clear for our social body at the beginning of the 21st century, which by many accounts is wildly out of balance with its environment – from the overreach of corporate interests, to the relentless proliferation of technology, to the reckless provocation of global climate change – and needs drastic readjustment. If that is true, then art can act as an antibody and still assault its own culture.

Step back to view these diametrically opposed conditions – art as defender or attacker – from a more expansive perspective. The Yes Men's Gatt.org project uses the perversity of Reamweaver [10] and the executability of the Web's Domain Name System to undermine the credibility of the World Trade Organization. The Yes Men could say that the WTO is an *internal* menace contributing to an *unhealthy* social body. Or the Yes Men could say the WTO is an *external* threat to a *healthy* social body – a corporate giveaway that seeks to undermine a just society via unnatural technological and economic controls. From the standpoint of the co-evolution of an organism with its environment, it ultimately doesn't matter whether a threat is internal or external; for systems far from equilibrium, the distinction between self and other breaks down anyway. What is important is how art goes about challenging these threats.

The Limits of Artistic Influence

Art of the Internet age has the double-edged character of antibodies: it can defend or assail its host depending on the context. But even when art challenges its own society, its accountability differs from the accountability of direct political intervention, either from the inside or outside. A social body, like the human body, is not a free-for-all, but a complex set of feedback mechanisms. Whether her weapon is a pistol or a press conference, a political activist with bad politics can wreak suffering and destruction on the world. Artists, on the other hand, must be free to explore unconventional, untested, even dangerous values with impunity. If anything, this makes artists more accountable than antibodies: they must exercise care for the social body even when they attack it. In return for the "artistic license" that allows her to explore risky themes, a creator must take care to undermine rather than overpower, to impose questions rather than answers.

For its part, society must tolerate a perverse multitude of artistic investigations and directions, just as the biological body tolerates the perverse alien forms produced by antibodies. Like antibodies, the arts are an inefficient drain on the body's resources; and like antibodies, the arts are worth it. The job of an artist, like that of the antibody, is to conjure possible threats to the body, real and imagined. While this conjuring may not put the body directly at risk, nevertheless reactionary impulses are likely to see these conjurings as more dangerous than they really are – not because they threaten life and limb, but because they threaten current and unjust structures of power and wealth often hidden by ideological blinders. This is why, for example, the Yes Men call their work "identity correction"; in their words, "Honest people impersonate big-time criminals in order to publicly humiliate them. Targets are leaders and big corporations who put profits ahead of everything else." [11] [Fig. 10]

That is not to say art can't do damage, but that this damage often stems from revelation rather than ruin. There is nothing artistic about Union Carbide's secret decision to test unproven technologies [12] at a gas plant in Bhopal in 1984, which resulted in 15,000 deaths and hundreds of thousands of injuries. However, when the Yes Men hijacked the domain DowEthics.com to

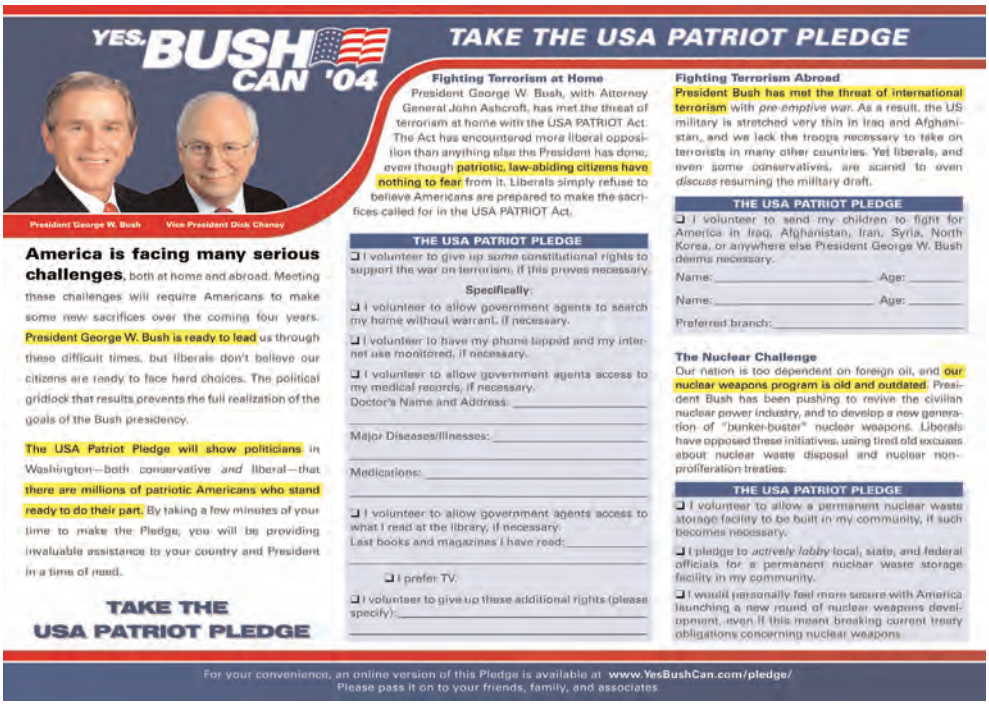


Figure 10. The Yes Men, ersatz version of the USA Patriot Pledge, http://yesmen.com, accessed June 30, 2006.

publicize an ersatz apology for Union Carbide's parent corporation, it was more than an innocuous prank. The $2 billion Dow's market value lost in a matter of minutes was an artistic victory – a revelation of Dow's tenuous standing given its history of unethical and unsustainable business practices – an "other" position that the social body had to date been unprepared to accept.

As noted above, the Yes Men also used their parodic prowess to undermine the World Trade Organization and its policies of global exploitation. Does this mean the September 11th Al Qaeda attacks on the World Trade Center were likewise a work of art, revealing the vulnerability of US hegemony in an increasingly globalized world? Contemporary artists Karlheinz Stockhausen [13] and Damien Hirst [14] thought so, applauding the 9/11 terrorist attacks as "the greatest work of art ever." But the revelation produced by the destruction of the twin towers took the form of certainty; whatever confusion immediately ensued, there was nothing curious or intriguing about 2,752 bodies burned and crushed to death. Artists should not be allowed this form of power, and Stockhausen and Hirst both apologized later for their appalling category error.

Likewise, Joe Davis's "infogene" would cease to be art if his genetic intervention turned E. coli into a vector for anthrax. Indeed, some critics of experimenters like Davis rightly question the accountability of the techniques of genetic engineering, whether in the hands of artists or biotech firms. In contrast, the recent jailing of artist Steve Kurtz, held without charge on terrorist charges for owning petri dishes and other basic labware, reminds us of the importance of protecting artists and their research into avenues that are conceptually dangerous, if not physically so. Even the law eventually came to this conclusion in Kurtz's case, as the authorities were forced to drop every charge against him except mail fraud.

The influence of today's art may extend outside the art world's hallowed halls to infiltrate chat rooms, courtrooms, and bedrooms – but it is still influence rather than power.

References:

[1] Shelley reserved for poets a prophetic vision that resonates with the antibody metaphor explored in this essay: "Poetry strengthens the faculty which is the organ of the moral nature of man, in the same manner as exercise strengthens a limb. [… Poets] measure the circumference and sound the depths of human nature with a comprehensive and all penetrating spirit, and they are themselves perhaps the most sincerely astonished at its manifestations; for it is less their spirit than the spirit of the age. Poets are the hierophants of an unapprehended inspiration; the mirrors of the gigantic shadows which futurity casts upon the present; the words which express what they understand not; the trumpets which sing to battle, and feel not what they inspire; the influence which is moved not, but moves. Poets are the unacknowledged legislators of the world." Percy Bysshe Shelley, "Defence of Poetry" (1819), mirrored at http://www.fordham.edu/halsall/mod/shelley-poetry.html, accessed June 30, 2006.

[2] Joline Blais and Jon Ippolito, *At the Edge of Art* (Thames & Hudson: London, UK, 2006), p. 7.

[3] Ibid., p. 17.

[4] See http://en.wikipedia.org/wiki/Warhol, accessed June 30, 2006.

[5] Ibid. [2], p. 9.

[6] "Warriors of Your Immune System" at http://www.mansfieldct.org/schools/mms/staff/hand/Warriorsimm.htm, accessed June 30, 2006.

[7] Indigenous cultures often appreciate otherness when trading with outsiders, but they will also defend their communities against attack. In such balanced cultures, art maintains the culture; in unsustainable cultures, art rightly destabilizes the status quo.

[8] The vaccine controversy offers one example of how diminished exposure to otherness may be counterproductive to the body. Opponents of routine inoculation argue that exposure to the attenuated viruses in vaccines provides only partial, short-term immunity, whereas exposure to real viruses in the wild confers a stronger community, especially to the overall population.

[9] See http://en.wikipedia.org/wiki/Autoimmunity, accessed June 30, 2006.

[10] http://www.reamweaver.com/, accessed June 30, 2006.

[11] http://www.theyesmen.org/, accessed June 30, 2006.

[12] http://en.wikipedia.org/wiki/Bhopal_disaster, accessed June 30, 2006.

[13] Ibid. [2], p. 134.

[14] Charlie Gere, *Art, Time, and Technology* (Berg Press: Oxford, 2006), p. 177.

Organized Networks, Transdisciplinarity and New Institutional Forms

Ned Rossiter

Abstract

The network models of sociality made possible by information and communication technologies (ICTs) have resulted in new forms of social-technical systems, or what I am calling emergent institutional forms of "organized networks." While these networks can be called institutional forms insofar as they have a capacity to organize social relations, they are radically dissimilar to the moribund technics of modern institutional forms such as government, union, and firm whose logic of organization is predicated on vertical integration and representative tenets of liberal democracy. Such dynamics are profoundly unsuited to the collaborative and distributive culture of networks peculiar to digital communications media and their attendant socialities.

Despite the reform agendas of universities in advanced economies over the past 15-20 years, their efforts at adapting to information economies and networked socialities have proven to be largely ineffective in dealing with the challenge of innovation and problematic of contingency, due to the predominant adherence to the strictures of intellectual property regimes coupled with cumbersome bureaucratic systems.

The challenges of contemporary governance can be addressed through the creation of new institutional forms that are responsive to the logic of social-technical networks ...

This paper investigates emergent social-technical dynamics of communication, production and organization in the network cultures of the education system. The paper describes and analyzes the emergence of "organized networks" as new institutional forms. Organized networks, in contrast to "networked organizations" (universities, corporations, government, even contemporary art institutions), are distinct for the ways in which the organization of social relations are immanent to the media of communication. The paper considers some of the ways in which organized networks facilitate the communication and production of educational resources across peer-to-peer, transdisciplinary social-technical networks.

The focus is to both analyze and invent new institutional forms that better enable the possibility of sustainability and security in a global information environment that is defined by uncertainty. Establishing mechanisms that distribute education resources common to networks is of central importance. Such an undertaking requires a transdisciplinary, distributive and collaborative institutional form – this form is called the organized network. Organized networks are emerging as the new institutional form best suited to address the uncertainties of labor and life in network societies and information economies.

Introduction

There is an urgent need for new institutional forms to address the uncertainties of labor and life within network societies and informational economies. The key institutions of the modern era – union, state, firm – have proven inadequate to the task of organizing and managing populations in the past 15-30 years. [1] During this period, many countries have undergone dramatic social change wrought by the force and impact of reforms peculiar to neoliberal governance and economic globalization. [2] The challenges of contemporary governance can be addressed through the creation of new institutional forms that are responsive to the logic of social-technical networks and non-representative democratic processes. [3]

It is essential to address these challenges in order to create structures of communication within networks that enable the distribution of both educational resources and the income they generate through what can be understood as collaborative economies. Economic models developed from such technics are immanent to the logic of network cultures and specific to the situation of communication and practice. In other words, there will be no universal model that applies to the dynamics of networks, which by definition are singular, albeit with patterns, tendencies, and resources that may overlap. Collaborative economies special to network cultures can also be distinguished from the service and delivery economies of the networked university and its educational commodities enframed within intellectual property regimes that endow education with informational-commodity properties. [4]

In the interests of a pragmaticism that is necessary if network cultures are to undergo a scalar and organizational transformation, I at times adopt in this paper the unattractive language typically associated with the rhet-

oric of neoliberalism. Similarly, I speak very deliberately of hierarchical and centralizing tendencies of networks. [5] The social-technical dynamics of organized networks constitute organization in ways substantively different from networked organizations (unions, state, firms, universities). Of course ICTs are common to both of these forms of organization. There are some fundamental differences, however: organized networks are co-emergent with digital communications media, while networked organizations typically precede the advent of digital ICTs. [6] Of special significance is the tendency for networked organizations to adopt IPRs as the regulatory architecture for commerce and institutional partnerships whereas organized networks are often staunch advocates of open source software and culture.

These are some of the things I mean by the term social-technical dynamics of networks. And they are the kind of features and properties that imbue the educational encounter and structure of relations with qualitative differences. Primary among these are the experiences of sharing, of feedback, of flexibility, and of friendship. However, it is a mistake to think the horizontal, decentralizing and distributive tendencies of digital networks as free from hierarchical and centralizing modes of organization and patterns of behavior. Let us not forget that flexibility is also the operative mode of post-Fordist labor and its attendant double-edged sword of economic precarity and ontological precariousness. [7]

For political projects that wish to go beyond the comfort zones of consensus communities (as if they exist outside of fantasy, myth, and self-delusion, irrespective of whether one has anarchistic or social-democratic tendencies), I maintain that it is better to engage these discourses, exploit their political legitimacy, and confront the materialities of informational communication in order to make concrete the horizons of utopian speculation. [8] It would be easy to dismiss such an idea as a variation of Third Way politics, but to do so would forget the materialities of communication and sociality of networks that function as dissonances in the system, and as registrations of "the political."

I should make one thing clear from the outset: this paper does not discuss the numerous open source software and programming possibilities for distributive education. Nor does it discuss developments of social networks and the advent of the much-hyped Web 2.0 and Internet2, situated as they are within an uneven geography of information. There are others much better informed than myself who can contribute this important knowledge to the collaborative project I outline here. This paper is best taken as a general intervention that cries out for detailed case studies whose analytical empirics is immanent to the time and space of network collaborations. My interest in this paper is to say a few things about the process of scalar transformation and transdisciplinarity as they relate to the invention of new institutional forms. Having established these background conditions, processes and practices, I will then move on to the topic of autonomous education.

Informational Universities and Neoliberalism as a Condition of Possibility

Over the past decade, it has become clear that digital technologies have opened up new possibilities in the production and distribution of content and are redefining the reception and creation of knowledge. Changes in the organizational capacities of institutions have accompanied these developments. Following Bill Readings' *The University in Ruins*, Kevin Robins and Frank Webster note how the modern liberal university was coextensive with the interests of the modern nation state and "the reproduction of national knowledge and national culture." [9] In a period of transnational capitalism, the capacity of the university to remain bound to such a national agenda is greatly diminished. Nowadays, the university, like so many institutions, must accommodate the complexities concomitant with global market economies. The problem is that the organizational form of the university is ill-suited to such dynamics. Despite the reform agendas of universities in advanced economies over the past 15-20 years, their efforts at adapting to information economies and networked socialities have proven to be largely ineffective in dealing with the challenge of innovation and problematic of contingency due to the predominant adherence to the strictures of intellectual property regimes coupled with cumbersome bureaucratic systems. In this respect, universities remain embedded within a national system, since it is the responsibility of the state and its legal organs to regulate intellectual property violations in accordance with the TRIPS Agreement of 1995.

Over the past thirty or so years, the university has advanced into and simultaneously conditioned the information economy, as witnessed by the connection between intellectual property (copyright, patents), publishing, the informatization of labor, and the commercially driven practices of the university. [10] This has created a tension between universities as public institutions and universities as private enterprises increasingly dependent on externally generated forms of income (consultancies, state and industry research funds, commercial applications, etc.). Furthermore, the concept of the university as an institution with an exclusive purchase on the administration and provision of knowledge and learning is undergoing transformation as countries with advanced economies open the "market" of education to private providers.

For collaborative research networks situated within the context of the European Union (EU), the project of constructing new institutional forms in the field of higher education holds a substantive relation to the Bologna Process. [11] The twin tasks of aggregating educational

resources common to network cultures and developing business models that enable the mobilization of these resources is central to the ambitions of the Bologna Process. [12] Despite the fact that organized networks do not register within such policy, it is strategic to recognize that universities do not hold an exclusive purchase on higher education and research. There is provision – rhetorical as it may be – for non-university networks to enter the field of formalized education. Key to such a development is an engagement with the accreditation procedures in order for organized networks to operate as new business forms in the field of education. [13] To realize this concrete ambition requires assembling a "network of networks" as unique platforms of delivery and dissemination of educational materials premised on open source principles.

Paradoxically, perhaps, neoliberalism – with its logic of outsourcing, privatization and dissembling institutional frameworks – conditions the possibility of organized networks. Moreover, neoliberalism has resulted in a weakening of collegial bonds and organizing capacities within the institutional form of the university.

The scale of administration associated with this task can very easily appear overwhelming, and the prospect of entering into such banality can be an immediate stumbling block to the process of scaling up. Yet incorporation as a legal entity is a necessary step if networks are to play the game of suprastate funding in the EU. [14] In this regard there is much to learn from peer-to-peer migrant networks, media activism and border academy projects such as those coordinated by Florian Schneider and Susanne Lang. [15] In a conversation earlier this year about registering networks as corporate entities, Lang informed me that in Germany at least such a task can be performed relatively swiftly once the necessary procedures are understood and then coordinated as tasks distributed within the network. This is an instance where national and possibly subnational policies on the registration of an organization may cause tensions for networks of transnational orientation. A decision has to be made about national location. Take it is as a matter of paper-work and then move on.

There's no question that the political stakes are high in such an undertaking, and there will be many who are quick to charge such a project as selling out. The reality is that organized networks will never be funded through state subsidies in the way that much of the cultural sector, along with NGOs for that matter, has and continues to be, in Europe at least, along with its neo-imperial offshoots. As a result, organized networks have no choice but to come up with business models. Otherwise they can only amble along in parasitic mode, taking a bit here and bit there from their unwitting hosts (frequently universities). Entering the market of higher education as external providers of "unique" educational resources and programs is one obvious option for organized networks seeking to obtain relative stability and sustainability through economic autonomy.

Paradoxically, perhaps, neoliberalism – with its logic of outsourcing, privatization and dissembling institutional frameworks – conditions the possibility of organized networks. Moreover, neoliberalism has resulted in a weakening of collegial bonds and organizing capacities within the institutional form of the university. And this is where the story of organized networks as new institutional forms within the field of education begins.

The work of Marc Bousquet on the constitutive relations between informal economies and the information university is instructive here insofar as he locates the economic and managerial problematic of labor as key to understanding the co-incidence between neoliberal policy-making, the commercialization of education and informatization of social relations. [16] As Bousquet writes, "informationalization is about delivering labor in the mode of information." Thus labor and not the advancement in technological systems is the primary source from which surplus-value of the educational commodity form is derived.

There is nothing especially new in such an observation – how can we forget the insights of Marx? – but it is an important reminder that alternative models would do well to take on board when questioning the dominance of informatized education as a commercial undertaking that severs the sociality of production from the commodity form. Alternative models as advocated in this paper can learn from the histories of experimentation in organization as it relates to the institutional form. Organizations and the question of institutional form, it seems to me, are all too often neglected when thinking about issue of sustainability and collaboration within network cultures.

Transdisciplinarity and the Legacy of Form

Of course there is much to learn from how other networks are undertaking their autonomous education initiatives. The accumulation of best practices is perhaps the most important lesson of all. [17] National contingencies will undoubtedly shape the approaches adopted by different networks, since the advent of open education within an informational mode is conditioned by the crisis of the modern universities as they engage the neoliberal forces of commercialization, declining state funding and

the legal architecture of intellectual property regimes – all of which are regulated by the transformed sovereign power of the nation-state. [18]

The reason why there is variation across different countries has to do with the fact there is no single hue of neoliberalism, with different factors and policy responses coming into play that arise out circumstances peculiar to the nation-state. This alone presents perhaps the biggest challenge to networks seeking to collaborate in developing autonomous educational projects, since transnational alliances of networks wishing to intervene in the composition and experience of education are, to varying degrees, bound to the logic of their neoliberal states. There are precedents for independent educational networks across Europe, ranging from the autonomist learning centers in Italy and the numerous educational workshops run by migrant networks and activists (often in tandem with cultural festivals or social forums) to the more up-scale summer schools with celebrity theorists.

Rather than provide a taxonomy of examples such as these, at this stage I wish to point to what I consider two seminal moments in the pre-history of organized networks. And this brings us to the question of form. First, the work of Félix Guattari and others at La Borde, an experimental institution in anti-psychiatry founded in the 1950s. [19] Here we find the development of concepts such as transversality and the practice of transdisciplinarity, both of which are primary to a network of networks. And second, the period following World War II when the Institute for Social Research returned to Germany. This passage in which an institute travels from New York City and Los Angeles to Frankfurt interests me for the way in which the methods adopted by the Institute are shaped, or rather, have to reconcile with the political and historical situation in which the Institute found itself.

Existing in effect as a virtual laboratory with shifting residencies at Columbia University, the American Jewish Committee's Department of Scientific Research, and a bungalow in Los Angeles, members of the Institute for Social Research undertook a number of collaborative research projects that enlisted quantitative and qualititative methods along with philosophical critique and social theory. [20] The organizational role and diplomatic efforts of Max Horkheimer are incisive here. As someone astute to the material situation of intellectual labor, Horkheimer sacrificed much of his time to the tasks of administration. From his inaugural speech as Director of the Institute in 1931, Horkheimer set out a trajectory for interdisciplinary research that combined empirical studies of social phenomena with the "animating impulses" of philosophical analysis. [21] His ambition was nothing less than "permanent collaboration" between philosophers, sociologists, economists, historians and psychologists. Key to such "collective research" was a proto-network structure which saw the Institute manifest as a number of international branches at any one time, ensuring also the maximum potential for survival should any node happen to collapse. Consider this as a form of data-backup or site-mirroring for the pre-digital age.

Horkheimer's institutional role contrasts that of Adorno who, as a devotee to critical theory, adopted with much reluctance and misgiving what he considered the reductive and internally contradictory empirical methods of "administrative research" championed by Paul Lazarsfeld and Berkeley's Public Opinion Study Group. But even Adorno, subsumed into an institutional persona, found it necessary to change tact upon returning to the situation of post-War Germany. While Adorno's derision for empirical research and its mechanized techniques continued throughout his life, the Institute – and especially Horkheimer – exploited its association with "advanced" American empirical research methods. Government, university, industry and US occupational forces perceived such methods as worthy of financial support for the reconstruction of cities, the reform of university disciplines, and the diagnosis of fascist, anti-democratic tendencies in an emergent consumer society. [22] Rolf Wiggershaus' comprehensive study of the Frankfurt School recounts one aspect of this engagement with authorities in the effort to secure funding for the Institute:

> *In 1950 the US High Commissioner, John McCloy, put DM 200,000 at the Institute's disposal, with a further DRM 235,000 for rebuilding. This energetic support sprang from a belief among those responsible for American policy in Germany that sociology, particularly when represented by American citizens [which Horkheimer and Adorno had obtained] and with its emphasis on empirical research, was a factor in promoting democracy.* [23]

This strategy of advancing political and economic interests through client organizations has since become a hallmark of US foreign policy, which extends to the structural adjustment programs of the IMF and World Bank and auxiliary role often played by NGOs as civil society actors. And it was gamble that Horkheimer was willing to play in the mixed-up world of post-War Germany. Here was the opportunity for scalar enhancement that had been unraveling for some time in the US as the Institute's funds became increasingly scarce, coupled with fragile relations with collaborating individuals and institutions. By diversifying the sources of funding from a range of authorities the Institute sought not only to maximize its funding potential, but also to create a structure in which a prevailing discourse of practical research distributed across institutions gave legitimacy – or at least some protection – to the more speculative philosophical interests held by Institute members, Adorno in particular.

What we find here is an instance in which the institution itself takes on the capacity of an actor engaged in "immanent critique" – another key "meta-method" in

thinking the complex relations that comprise the transdisciplinary research of organized networks. This is an experimental methodology in which the time and space of research is inseparable from the labor and life of networks. At the theoretical level, immanent critique takes its primary lessons from Deleuze, Foucault and Adorno with important input from Canadian political economist and communications scholar Harold A. Innis.

Immanent critique is a method of post-negativity. It retains Adorno's insistence that contradictions and tensions operate as a constituent force within any idiom of expression and it recognizes that sociality within network cultures and creative economies is configured not according to dualisms, but rather to patterns of distribution, rhythms of tension, transversal social relations, modulations of affect and transdisciplinary institutional practices. In this sense, immanent critique understands the antagonism of the constituent outside as a processual force of affirmation as distinct from the "negation of negation." My position differs from Zizek on this point, who reads the Hegelian "negation of negation" as "nothing but repetition at its purest: in the first move, a certain gesture is accomplished and fails; then, in the second move, this same gesture is simply repeated." [24] Such a manoeuvre, I would argue, does not account for the indeterminacy of difference that attends the affirmative role of the constituent outside as it subsists within a network of networks. This amounts to a form of post-negativity in which the operation of a constituent outside permeates social-technical and historical conditions of the present.

Institutions function to organize social relations. It follows, then, that the social-technical dynamics peculiar to a range of digital media technologies (mailing lists, collaborative blogs, wikis, content management systems) institute new modes of networked sociality. It is easy to dismiss this process of emergent institutionalization. Many would assert that it simply results in a bureaucratization and rigidity of social-technical communication systems whose default setting is one of flows, decentralization, horizontality, etc. I would suggest such knee-jerk, technically incorrect responses risk a disengagement from the political and thus from politics. There is a passivity that attends this kind of position. Moreover, it is a position that fails the politics of reappropriating the psychic, social and semiotic territory of institutions. The process of instituting networks involves a movement toward the strategic rather than tactical dimension of net politics. Another reason to turn towards the strategic dimension has to do with the short-termism that accompanies many tactical projects. The logic of the tactic is one of situated intervention. And then it disappears. There are of course some notable exceptions – Indymedia, Makrolab and the Yes Men come to mind as quite long-term experiments in networks and tactical media; yet these exceptions are not, I would suggest, instances of transdisciplinarity.

The practice of transdisciplinarity preconditions the invention of new institutional forms. As Gary Genosko notes of the meta-methodology of Félix Guattari, transdisciplinarity is predicated on experiments in institutional formation. [25] In the case of organized networks, transdisciplinarity is constituted by "the political," by the tensions that underpin cross-sectoral, multi-institutional engagements that make possible new modes and new forms of research. Transdisciplinarity can be distinguished from interdisciplinary or multidisciplinary research. Despite all the claims in OECD reports and government and university policy rhetoric on research, interdisciplinarity is not about networks but rather clusters, and typically takes place in "private and public labs and research centres." [26] Such settings, and the institutional and political-economic conditions which shape interdisciplinary research, also results in another key difference with trandisciplinarity. Interdisciplinarity rests within the regime of intellectual property, which operates as an architecture of control. As such, the knowledge produced is locked up and contained; it refuses the social relations that make possible the development of intellectual action, and it therefore refuses the potential for social transformation because of the way knowledge is enclosed within a property relation.

This is not to dispense with tactics since tactics are the source of renewal. Interestingly enough, tactics parallel the logic of capital. We see this operation historically time and again. Just consider core-periphery relations and the ways in which capital has to incorporate or appropriate the margins in order to replenish and reproduce itself. Such movements are similar to what Brian Holmes identifies as the cooptation of the productive efforts of the artist, cultural critic, designer. [27] It is therefore important to remember that autonomists are not somehow located outside the state but rather operating as disruptive potentiality whose difference is defined by relations of negation, refusal, exodus, subtraction, etc. Certainly there are important qualitative differences in the relation individuals and peoples have with the state. Think, for instance, of the experience of migrants and so-called illegal movement of peoples across territories, or the precarious worker. Precarity, let's remember, is an experience that traverses a range of class scales, and may even be considered as a post-Fordist technique of border control that distinguishes "self-managed exploitation ... from those who must be exploited (or worse) by direct coercion." [28]

Collaboration and Governance in New Institutions

Two recent reports commissioned by international institutions highlight the central importance of new institutions if problems of democracy, accountability, fairness and sustainability are to be addressed in the twenty-first century. The International Labor Organization's World Commission on the Social Dimension of Globalization

"warns that we have reached a crisis stage in the legitimacy of our political institutions, whether national or international. There is an urgent need to rethink current institutions of global economic governance, whose rules and policies it says are largely shaped by powerful countries and powerful players." [29] Similarly, an OECD report titled *Governance in the 21st Century* highlights the challenges as follows:

> *Organizational and creative liberty […] has very exacting preconditions. In the future, more diffused approaches to governance in all parts of society will only work if there are frameworks in place that assure very high levels of transparency, accountability and integrity. At the same time, for public authorities and society more broadly, the ability to put new forms of governance into the service of realising people's collective good will depend on a common commitment to democratic values, human rights and equality of opportunity. Even with these frameworks and values in place, the emergence of new forms of governance will still depend fundamentally on the capacity of individuals and groups to participate actively in making and implementing decisions.* [30]

It is precisely the issues outlined here that organized networks, as a policy intervention and social-technical practice, seek to address. Through the primary vectors of inquiry – protocols, self-organization, scalability, sustainability – the project of organized networks both assesses and undertakes the construction of new institutions that engage diverse populations in creating mechanisms and resources for labor and life in information societies, bringing new models to international challenges of cultural diversity, migration, creative innovation and open education. The problem remains, however, that organized networks do not yet exist as recognized actors either within the stratum of policy discourse or as concrete potentialities. What we have, nonetheless, is a steady accumulation of energies, best practices, concept translators, situated projects, and so forth. Along with taking on board the lessons from pre-digital institutions of experimental research, there is also much to learn from international efforts and failures to coordinate cross-institutional encounters in the information society.

The problem remains, however, that organized networks do not yet exist as recognized actors either within the stratum of policy discourse or as concrete potentialities. What we have, nonetheless, is a steady accumulation of energies, best practices, concept translators, situated projects, and so forth.

The collaborative project of inventing new institutions holds an affinity, remote as that may be, with the experiences, process and political form of "multi-stakeholderism" between government, business and civil society organizations (CSOs) during the UN's World Summit on the Information Society (WSIS). However, multi-stakeholderism generates tension as it often requires CSOs and NGOs to institutionalize themselves to gain recognition from government and business stakeholders, often decoupling decision-making processes from the grass roots networks that are these organizations' key constituency. Such an operation typifies the vertical system of communication and governance within networked organizations (as distinct from organized networks).

Again, this is not to say that hierarchies and centralizing tendencies are absent from or not intrinsic to organized networks. Rather, it is to recognize that conflicting, non-assimilable hierarchies distinguish organized networks from networked organizations. Herein lies the challenge of governance and indeed collaboration. The multi-stakeholderism model does not address these tensions, and is thus unsuccessful as a governance model for networks. The political concept of organized networks, however, understands conflict as a generative force in need of both collaborative methodologies and transdisciplinary frameworks. These are key problematics of communication and governance that organized networks must address if they wish to operate successfully as new institutional forms composed of diverse and fluctuating constituencies, where people have the freedom to come and go. [31]

While the organized network has a relative institutional autonomy, it must engage, by necessity, other institutional partners who may often be opposed to the interests of networks. Organized networks share something with NGOs, CSOs, and even think-tanks. Yet there is a radical dissimilarity and qualitative difference between organized networks and these other institutional forms. Take NGOs and CSOs, for example, and the techniques of governance adopted throughout the WSIS process. Within any partnership there is of course a compromise. In order to obtain the necessary discursive legitimacy required to participate within the institutional settings of WSIS, NGOs and CSOs had to engage a model of organization that was antithetical to the self-organizing logic of networks. NGOs and CSOs were thus required to adopt the representational form known throughout WSIS as multi-stakeholderism – the primary model of governance for managing, if not realizing, relations between business, government and civil society. Multi-stakeholderism is predicated on representative models of liberal democracy, and such abstraction always refers to itself and thus frequently conflicts with the grass-roots networks that characterize the constituent dimension of NGOs and CSOs. Representation does not correspond with the logic of networks, which are better understood

as non-representational forms of politics.

In saying this I do not wish to valorize the horizontality of networks. The tendency to describe networks in terms of horizontality results in an occlusion of "the political," which consists of antagonisms that underpin sociality. It is technically and socially incorrect to assume that hierarchical and centralizing architectures and practices are absent from network cultures. At the technical level, one only has to look at the debates surrounding the information society and Internet governance: hierarchical and political-economic aspects of assigning domain names, location of root servers, politics of IPRs, uneven geography of information flows, determination of standards, effects of trade agreements on content production and distribution, etc. The hierarchical dimension to networked sociality is easy to account for: just consider the cohort of alpha males scheming in the back rooms of so many organizational forms. Even in the case of wikis, which on the surface appear to be exemplary non-representational forms insofar as labor on content production is anonymous, again we need only to venture through the backdoor to see the ringleaders at work. [32] Of course the technical and social aspects of ICT networks are not mutually exclusive, but rather interpenetrate one another in a plethora of ways. A challenge for organized networks is thus to address the software problem and the social problem.

The collaborative interest of organized networks is to consider what the scalar transformation of organized networks entails vis-à-vis the aggregation of educational resources distributed within and across networks.

The collaborative interest of organized networks is to consider what the scalar transformation of organized networks entails vis-à-vis the aggregation of educational resources distributed within and across networks.

Networks have been fantastic at developing educational resources such as documentation of open source software, university course materials, health-care information, tips on political organization, etc. Obviously there's a lot to learn from NGOs and the revival of union organizing as seen in the "Justice for Janitors" movement in the US. [33] Certainly my position is not to dismiss these institutional forms outright. A focus on educational resources strikes me as a matter of tactics that feed strategic interests. Without the tactical, organized networks collapse into stasis. Here it is necessary to recognize the situation of informational politics. Just as NGOs and CSOs have filled the void created by the neoliberal state's evacuation from the social, so too must organized networks seize upon the institutional persona of the "external provider."

Conclusion

What I am suggesting, then, is that networks intervene in the market of higher education. The university is a vulnerable institution actually. It is quite uncertain, and indeed could be characterized as a place of precarity. As many have experienced, the labor force of universities is predominantly composed of casual workers whose seasonal pattern of employment resembles that of the strawberry picker. Unions typically fail to represent the interests of casual workers, since their interest is to protect the security of those with tenured positions.

As far as I can determine, an intervention into education market is one of the few ways in which organized networks may obtain economic autonomy, which depends upon securing an economic base. Without this, organized networks have little chance of sustainability and little possibility of scalar transformation. There is a capacity for networks to mobilize their resources in transversal ways in the form of master classes, summer schools, and training programs that operate both internally to and externally from universities. Universities are undergoing a process of losing their expertise, their ability to bring in new knowledge and to transform the disciplines, which have become incredibly rigid and dull. Universities can be characterized by their deficiency of thought. They don't know how to move themselves in ways that incorporate what Bateson called "the difference that makes a difference." The strange thing is that neoliberalism makes possible the difference that makes a difference. This is the perversity of neoliberalism. The structural logic of neoliberalism makes possible openings, and openings invite interventions that begin to enable the financing of autonomous, precarious, experimental research and teaching that shows no sign of being catered for in current OECD, government and university policy directives.

My proposal can be easily criticized for appropriating the outside – the experimental elements that so often energize networks on the frontline of invention – and closing it down again. This is the classic critique of appropriation. We see this most obviously in the fashion industries. Remember punk? If you wanted, you could pay 200 bucks for a pair of jeans with a rip in them. Hilariously, there was no shortage of idiots who went out and purchased their damaged goods. The same can be said about knowledge. What functions against the closure of minds and resources is the fact that educational business projects undertaken by a network of networks is predicated on principles of open source software, society and culture. Obviously there will be fights over how best to redistribute funds within and across networks. But that's a matter that can be sorted out. Having

said this, a problem remains. There is only so much free labor that can be done within the networks. [34] Certainly it helps networks to have a parasitical relation with networked organizations (universities, for example). But eventually free labor exhausts itself.

Ned Rossiter
Centre for Media Research
University of Ulster

Acknowledgements:
Thanks to Geert Lovink, Brett Neilson, Akseli Virtanen, and Soenke Zehle for their various inputs into this paper. Thanks also to reviewers, and participants on the ISEA forum and copy-editing by Christiane Paul for Intelligent Agent. And thanks to Nettime mailing list for subjecting this topic to its usual manner of high-level debate and critique.

References:

[1] See Paul Di Maggio (ed.), *The Twenty-First Century Firm: Changing Economic Organization in International Perspective* (Princeton University Press: Princeton, NJ, 2001); Brett Neilson and Ned Rossiter, "From Precarity to Precariousness and Back Again: Labor, Life and Unstable Networks," *Fibreculture Journal 5* (2005), http://journal.fibreculture.org/issue5/neilson_rossiter.html

[2] See Ulrich Beck, *The Brave New World of Work, trans. Patrick Camiller* (Polity: Cambridge, 2000); David Harvey, *A Brief History of Neoliberalism* (Oxford University Press: Oxford, 2005); Nigel Thrift, *Knowing Capitalism* (Sage: London, 2005).

[3] Representation in its party-political sense is antithetical to the logic of networks. See Ned Rossiter, "Virtuosity, Processual Democracy and Organized Networks," *Cultural Studies Review* 11.2 (2005), pp. 110-128; Ned Rossiter, "Organized Networks and Non-Representative Democracy" in: Jodi Dean, Jon Anderson and Geert Lovink (eds.), *Reformatting Politics: Networked Communications and Global Civil Society* (Routledge: London and New York, 2006); Paolo Virno, *A Grammar of the Multitude*, trans. James Cascaito Isabella Bertoletti and Andrea Casson, foreword by Sylvère Lotringer (Semiotext[e]: New York, NY, 2004); Geert Lovink and Ned Rossiter, "Dawn of the Organized Networks," *Fibreculture Journal 5* (2005), http://journal.fibreculture.org/issue5/lovink_rossiter.html

[4] Here, I differ from Phil Agre who sees complementarities between what he calls the "commodity model" and the "community model" in the "institutional design of the university." While there is much that I agree with in Agre's essay, my position does not see an affinity between the concept of communities and that of organized networks. Agre tends to conceive communities and new institutions as spaces of consensus, whereas I would take an opposite line: the social-technical dimensions of organized networks are better understood in terms of dissensus. Both economic and institutional design implications follow on from this distinction and are introduced in the course of this paper. See Phil Agre, "Commodity and Community: Institutional Design for the Networked University" in: Kevin Robins and Frank Webster (eds.), The Virtual University? *Knowledge, Markets and Management* (Oxford University Press: Oxford, 2001), pp. 210-223.

[5] A number of reviewers raised questions about my use of hierarchies and centralization to describe digital networks. So too did comments by Wendy Chun, Joline Blais, and Jon Ippolito on the ISEA symposium web forum, http://01sj.org/component/option,com_simpleboard/Itemid,149/. I thank these people for their input, apologize for not being able to respond online, and hope that this paper provides some clarification on these matters.

[6] The characteristics of different forms of networks were the topic of debate on the Nettime mailing list. See the archive for April, 2006, http://www.nettime.org.

[7] Ibid. [1], Neilson and Rossiter, "From Precarity to Precariousness."

[8] This is not to regress to the equally deluded position of social-democratic politics – an accusation enough so-called autonomist and anarchist activists have leveled against me in the past.

[9] Ibid. [4], Robins and Webster, *The Virtual University?*, p. 5.

[10] See Simon Marginson and Mark Considine, *The Enterprise University: Power, Governance and Reinvention in Australia* (Cambridge University Press: Cambridge, 2000); David Noble, *Digital Diploma Mills: The Automation of Higher Education* (Monthly Review Press: New York, NY, 2002); Ibid. [4], Robins and Webster; Marc Bousquet, "The 'Informal Economy' of the Information University," *Workplace: A Journal for Academic Labor 5.1* (2002), http://www.cust.educ.ubc.ca/workplace/issue5p1/bousquetinformal.html.

[11] An EU initiative since 1999 aimed at establishing uniform standards across European universities in order to encourage the movement of students, teachers, and researchers.

[12] Bologna Secretariat, http://www.dfes.gov.uk/bologna/.

[13] Admissions Officers and Credential Evaluators' (ACE) professional section of the European Association for International Education (EAIE), http://www.aic.lv/ace/default.htm.

[14] Of course NGOs and grass-roots organizations such as community networks have long histories of incorporation. But for some reason very few networks have done this. Thing.Net and xs4all are exceptions that come to mind. Yet these networks seem to have reached a plateau, and perhaps even stagnated, as just yet another option in the sea of ISPs to choose from, albeit with their own brand of special attractors.

[15] Projects Schneider and Lang have either participated in or initiated include Borderline Academy, Makeworlds, Incommunicado, Was Tun?, Noborder Network, and V2V Video Syndication Network. A full listing can be found at: http://www.kein.org/projects.

[16] Ibid. [10], Marc Bousquet.

[17] This was a point raised by Soenke Zehle and others at the close of Incommunicado.05: information technology for everybody else, Amsterdam June 16-17, 2005, http://incommunicado.info/conference. Geert Lovink and Christoph Spehr discuss the topic further in their text "Out-Cooperating Empire: Exchange on Creative Labor and the Hyrbid Work of Collaboration," unpublished manuscript, 2006. Earlier incarnations of the topic can be found in the various texts associated with the Free Cooperation conference organized by Trebor Scholz and Geert Lovink, Buffalo, New York, April 24-25, 2004, http://freecooperation.org/. Collected papers from that event have been published in Geert Lovink and Trebor Scholz (eds.), *The Art of Online Collaboration* (Autonomedia: New York, NY, 2006). See also the Institute for Distributed Creativity, http://distributedcreativity.org/.

[18] This process is discussed and analyzed at length in Saskia Sassen, *Territory, Authority, Rights: From Medieval to Global Assemblages* (Princeton University Press: Princeton, NJ, 2006).

[19] For a history of La Borde, see Gary Genosko, *Félix Guattari: An Aberrant Introduction* (Continuum: London and New York, 2002); Félix Guattari, "La Borde: A Clinic Unlike Any Other," trans. D. L. Sweet in Sylvère Lotringer (ed.), Chaosophy (Semiotext[e]: New York, NY, 1995), pp. 187-208.

[20] My gloss here is derived from Rolf Wiggershaus, *The Frankfurt School: Its History, Theories and Political Significance*, trans. Michael Robertson (The MIT Press: Cambridge, MA, 1994). See also Martin Jay, The *Dialectical Imagination: A History of the Frankfurt School and the Institute of Social Research, 1923-1950* (University of California Press: Berkeley, CA, 1996).

[21] Max Horkheimer, "The Present Situation of Social Philosophy" in *Between Philosophy and Social Science: Selected Early Writings*, trans. G Frederick Hunter, Matthew S. Kramer, and John Torpey (The MIT Press: Cambridge, MA, 1993), p. 9.

[22] Ibid. [20], Wiggershaus, pp. 431-435.

[23] Ibid., 434.

[24] Slavoj Zizek, *The Ticklish Subject: the Absent Centre of Political Ontology* (Verso: London, 1999), p. 74.

[25] Gary Genosko, "Félix Guattari: Towards a Transdisciplinary Metamethodology," *Angelaki 8.1* (2003), p. 29.

[26] Ibid., p. 35.

[27] Comment made by Holmes at Finnish Social Forum, Helsinki, April 1-2, 2006. See video recordings of talks by Brian Holmes, Carlos Fernández, Ned Rossiter, and Stevphen Shukaitis and the follow-up discussions at http://www.m2hz.net/uusityo/index.php?title=Kommunikaatio

[28] Angela Mitropoulos and Brett Neilson, "Exceptional Times, Non-Governmental Spacings, and Impolitical Movements," *Vacarme* (Janvier, 2006), http://www.vacarme.eu.org/article484.html

[29] World Commission on the Social Dimension of Globalization, *A Fair Globalization: Creating Opportunities for All* (International Labor Organization: Geneva, 2004), http://www.ilo.org/public/english/fairglobalization/report/index.htm

[30] OECD, *Governance in the 21st Century* (OECD: Paris, 2001), p. 4, http://www.oecd.org/dataoecd/41/42/35391582.pdf.

[31] A point made in Spehr's contributions to Free Cooperation.

[32] In fact one can simply view the history link in order to see the names and IP addresses that comprise the distribution of labor.

[33] See Florian Schneider's documentary *Organizing the Unorganizables* (2002), downloadable at http://wastun.org/organizing

[34] See Tiziana Terranova, "Free Labor: Producing Culture for the Digital Economy," *Social Text 18.2* (2000), pp. 33-58.

Voice and Code

Josephine Bosma

Hidden Voices Still Speak

The purpose of this text is to provoke thought about the connections between our oral expressions of language (speech and song) and programming languages. I have no intention to deliver a scientific paper. It predominantly is a reflection on what voice is, and how it seems to relate to code. This paper is written based on the assumption that all human creations "say" something about the human condition. There is no technological world separate from our human world, our bodies, and our minds. We have created machines and languages as we have created the crops in our fields. As Gunther Kress puts it, "Any landscape, the communicational included, is the result of human work. 'Human' and therefore full of affect and desire; 'human' and therefore always cultural and social." [1] The things we have created are as much part of us as our thoughts are. The question is, however, how can we stay engaged with our externalized, materialized ideas and not be controlled by them? If we recognize ourselves in our creations, we are less likely to lose control over them. Adrian MacKenzie writes, "The problem is how to engage with a collective's embodiment of technical mediations without repudiating, or over-identifying with, technology." [2] I believe that reflecting on the human aspect in the languages that control our machines, networks, and systems is one way to achieve this, and I chose the most physical representative of language as an entry point: voice. In art, much of this reflection is performed in a playful manner, by toying with code as if it were some exotic tongue or by simply appropriating it, taking possession of it physically, vocalizing and externalizing what was initially presumed to act as an inner voice of the machine world only.

Voice, Resonance, and Transcription

Many belief systems in the world have been based on the assumption that the course of history could be influenced by ritual, magic, and words. Words are considered to have great power, the power of creation even, which is understandable if one just thinks of the impact words and messages can have on our personal lives. Words move us, and through moving us they change the world, by changing our perception. Naming things makes them come alive in our minds.

In the beginning there was just the body, its inner voice, and its audible voice. Audible voice is the most special of our physical extensions. It has no shape and no easily visible material presence, yet it can have great impact, even when used in a whisper.

Even if it is invisible, it can still be measured. Voice is produced by (and at the same time produces) a physical resonance. Inside us, breath, air, moves the vocal chords, which makes our voice resonate through our head as well as through the air around our bodies. Outside us, the resonance of our voice moves our audience's eardrums, and can even be powerful enough to make glass break. Voice can be like our arms and hands: a part of us that reaches out and touches something or someone.

The sound and impact of our voice depends on our position and our role within our class, clan, or family. It also depends on our mood, our emotional, and our physical state. Voice, in short, is never simply sound. Voice is part of who, what, and where we are.

Through its resonance, voice has the ability to remind us of our physicality. And it not only literally moves us. Its sound and content remind us of our humanity. The sound of a baby crying, the sound of a soothing voice, the roar of a bully: we all have experienced them and registered their meaning. The use of our voice is therefore not a simple gesture. The sound and impact of our voice depends on our position and our role within our class, clan, or family. It also depends on our mood, our emotional, and our physical state. Voice, in short, is never simply sound. Voice is part of who, what, and where we are.

Almost the same could be said about written text. Written text is a transcription of our audible, but also of our inner, cognitive "vocalization." Although we occasionally transcribe speech directly, written text is first of all a transcription of our inner voice rather than our oral expression. Nevertheless, this inner voice is still deeply connected to speech. Written text is an extension of, or a tool for, our voice. It would seem that our voice is not just the part of our expression that we register with our ears and hear. [3]

To explore the connection between voice and code, between our physical vocal expression and programming languages, means that we first have to look at the connection between our vocal expression, our expression in written text and other notation systems (such as notation systems for music and song) and the meanings we have ascribed to these expressions. Given that our voice has been "notated" in other ways as well since the advent of recording media, we have to also consider the influence of recorded and artificial voices on how we perceive and express ourselves. Douglas Kahn puts it poetically: "Writing had silenced the words from one's voice; phonography wrenched the voice from the throat and out of time." [4] Artificial voices and the subliminal languages of machines have changed our perception of voice even further. Our voice has become a complex of oral, written, and machinic expression. What is our relationship to the languages we created to perform calculations or run machines? Are these not also part of our voice?

Signs, Letters, Numbers

We have already been familiar with transcription systems for our human reflections and communications for centuries. These transcription systems have many shapes or appearances. Hieroglyphs, characters, cuneiform script, and Braille are just some examples. The way we transcribe our "voice," inner and outer, is not bound to sound or phonetics, even if we tend to think of the alphabet that way. Just think of how we need phonetics to describe the sound of a word in a dictionary. Methods for transcribing voice depend on culture and circumstances, which are in turn embedded in transcription or in written text. In his book *Literacy in the New Media Age* Gunther Kress explains how it is strange to many non-western cultures, for instance, to have only one way to write a word. These cultures sometimes have three transcription systems to do so. He writes, "transcription systems are not meaning neutral: social meanings attach to them." [5] The same could be said about mathematics and programming languages.

Mathematics is not just calculation. The numerical system may be just a way to represent quantities, but mathematics is more than that; it is also an extreme form of logical reasoning. Mathematics is said to be a (maybe even the) universal language. Even if this is to some extent true, this assumption also tends to give way to an almost religious belief in the power and superiority of calculative reasoning. The overt logic and calculation of the mathematical language are just as seductive as are the emotional lures of gut reasoning. Both seem to represent sincerity and truth, and can therefore easily be misinterpreted or overestimated.

Programming languages, much like mathematics, are designed to be practical and logical. According to the Wikipedia explanation of programming languages, they "differ from most other forms of human expression in that they require a greater degree of precision and completeness." [6] The mention of "human expression" in this quote is interesting. It reminds us that in most copyright battles, those in favor of open source or free software will claim their right to the freedom of speech on the basis of the First Amendment of the US constitution. Much like the text of the First Amendment connects voice to written text, anti-copyright activists connect voice to all computer code.

The Wikipedia explanation or definition of programming languages unfortunately fails to mention cultural or social subjectivity in code. It only states, "the need for diverse computer languages arises from the diversity of contexts in which languages are used," [7] and talks about, among other things, how programmers differ in taste and how novices will write simpler code then "experts." However, subjectivity in code is inscribed in the same way as it is in mathematics, which is through choices of target, application, or negation. Like written text, which can bear invisible negations of unwanted topics or results, code is never truly innocent. As the famous quote from the artist group I/O/D – "Software is mind control – get some" [8]– provocatively reveals, there is awareness of the cultural traces in code and software, but most information on programming and code does not move beyond the realm of the "purely" technical. As mathematics, the technology of organizing, processing, and steering information is perceived as neutral and aimed at truth or perfection. A relationship to human endeavor and desire is mostly ignored.

Magic, Music, and Voice

The temptation to see the universal language of mathematics as (key to) universal truth is very old. Around 500 BC, philosopher and mathematician Pythagoras already connected mathematics to questions about the origins of life and culture. "Pythagorean thought [...] first coined and systematically expressed the idea that a symbolic-mathematical source code underlies the universe and describes nature and culture alike." [9] It was and still is tempting to take this thought one step further, and presume that there is a way to manipulate this underlying source code. Various systems involving a combination of letters, words, and mathematics were conceived with the goal to recreate or change the world. Kaballa, for instance, "effectively combined the Pythagorean idea of the world being composed of numbers so that everything can be described in numerical terms and proportions, with the magical concept of language as an agent that affects matter." [10] Our faith in and awe for new technologies seems to reflect a residue of this belief in the powers of the codes we design. We have developed compositions of text and numbers that actually "do something," even if the end product is often no more than a super-calculator, or only partly and imperfectly

accomplishes what it is supposed to do. Much like a few hundred years ago, the real magic (or the magic of reality) is still unfolding in the combination of our creations and the way we use or understand them.

The presumed magical power of words was and is of course not always dependent on mathematics and calculation. Words have had far greater impact on their own, as naming, as vocalization, as becoming, and have been used as such in rituals and rites. The greatest magic achieved by words is the stimulation and sharing of memory, and through that, the generation and preservation of history. The power of words lies in the naming of situations, events, and people, and in the ability to enable a becoming of history. The creation of history is an act that is loaded with cultural and social complexities, but it is in many ways based on some simple technical facts. These facts all turn on one thing: the human body and its possibilities (or limitations).

There have not always been pen and ink, a tape recorder, or a hard disc to preserve information. Furthermore, some information was never thought of as worthy of transcription and preservation. In both cases, memory had to be preserved differently. What better way to inscribe the slow and forgetful human body with memories of its culture and people than through storytelling, repetitive incantations, and song? The endless repetition of chants and incantations in ritual is a form of self-hypnosis and learning, as much as it is a creation of new inner vistas.

In addition, the evolution of the personal computer created the possibility to let written text be closer to voice than it had ever been before, both in code and in human communication. We are no longer dealing with printed matter, with a silenced or frozen voice, but with forms of writing that are fleeting, time-based, or self-expressive.

It might seem a far leap from song to code, but both are vocal ways of enhancing memory and sharing information. They are in many ways extremes of the vocal spectrum, song being closer to primal vocal expression and code being an expression and extension of calculation and logical reasoning. However, both are also tools, or vehicles, for enhancing and preserving cultural and social expression. Their creation is rooted in the materiality of our bodies and the desire for enabling not just physical procreation, but eternal life through preserving our immaterial selves. To put it in a very blunt and short way: song and code are both means to overcome death. They both represent and prolong our immaterial selves. It seems we have designed machine languages in accordance with the needs of our own fallible, slow, physical memory.

Forbidden Fruit

If we understand programming languages as related to vocal expression, as related to our bodies, and especially as related to song, it might explain why copyright issues are particularly difficult in this area. Copyright developed from the 16th century onwards, first of all for print publications. [11] This which means that it most strongly developed in the area of written text. Copyright for music (sheet music and recorded music) developed much later, especially copyright for popular and folk music. The history of popular and folk music is, even more than that of classical music, positively filled with copies, covers, and quotations. It is largely an oral history, and as I mentioned earlier, oral history works with the limitations and possibilities of the human physical memory by using repetition and quotation. Oral history was a kind of copy-pasting avant la lettre.

The development of programming languages and code has been mostly dependent on group efforts, on shared authorship, and quotation. As such, it has more in common with song than with printed text. Copyrights mostly lean on the definition of authorship. Authorship in code is a complex matter, and it often is impossible to trace code or software back to individual authors. Personal computers and networks have only emphasized and expanded this phenomenon since the 1980s.

In addition, the evolution of the personal computer created the possibility to let written text be closer to voice than it had ever been before, both in code and in human communication. We are no longer dealing with printed matter, with a silenced or frozen voice, but with forms of writing that are fleeting, time-based, or self-expressive. It is therefore not surprising that people want to resist copyrights in the area of digital media networks: we are looking at forms of communication that are much closer to oral, social, or cultural expression and communication than printed text.

Copyright is developing in such a way that programming languages, and specifically the code underlying many pieces of software, are not only turning into illegal or elite knowledge, but start to represent the oppressed, silenced voice. Copyright is not just making words silent, but also forbidden, untouchable, unusable. This is happening at a time when popular culture is becoming infested with high-tech research and development tools and everybody, no matter what level of expertise in code, more or less has access to networks, tools and products of programmers and crackers. The combination of oppression and access produces great tempta-

tions. The turmoil surrounding new media has created new excitement, myths, and mysteries. These are two of the things that make toying with code outside of the machine (in performance, fiction, design or song, for instance) so appealing.

Pop, Explorers, and Privacy

Since the mid-90s, urban clothing has been adorned with printed text referring to cyber culture, especially clothes for men and boys. T-shirts, jackets, coats, and accessories with the words "download," "access," "network patrol," or "worldwideweb" printed on them were all over the place at the end of the 90s, at least inthe Netherlands. There was a techno-fetish boom in pop culture that is only now slowly fading away. The fetishization of new media is of course part of consumer culture, and therefore a product of the advertising frenzy surrounding the Internet and mobile telephony, that began in the early nineties. But it goes beyond that. Most of these clothes and accessories did not have the glossy look of brilliant techno futures to come, but were closer to military or "outdoor" clothing: outfits you wear for conquering the world, a street block, a mountain or when hiking in the woods. They were, so to speak, typical "men's clothes." Baggy shirts and pants with crooked looking prints seem to point more in the direction of hacker culture than the bright new clean future presented in advertising. The message in pop culture seems to be: new media turn us into explorers and warriors. For women, the clothes and accessories market created a far more glossy cyber future, at the height of which was a perfume called "Internet." Nevertheless the strong underlying message in pop culture was: new media are the New Frontier.

The hacker (explorer-warrior) aesthetic is an intrinsic part of new media culture, no matter how much the media industry has tried to suppress it. This aesthetic represents not only the dark and mysterious side of new media, but also simply represents the hidden or inner world of new media culture. I see vocalization of code as a way of affirming or celebrating the power of this inner world, but also of defending the right to "speak" in it, or to criticize it.

Copyright is developing in such a way that programming languages, and specifically the code underlying many pieces of software, are not only turning into illegal or elite knowledge, but start to represent the oppressed, silenced voice.

At the same time, programming languages have created new perspectives. Reading code has created a new type of inner voice. When reading (code or other "text"), we always use the same parts of our brain that control the muscles for speech (which actually seem to start trembling ever so slightly, see footnote 3), but now this process combines with our visual memory and imagination in order to envision the virtual processes slumbering inside the code. Not only does a linear story unfold in text or the "poetry" of programming languages, but while we read, processes and activities also occur visually and imaginatively in our minds, in real time. Code is a new kind of grammar that allows us to represent, suggest, and "see" actions, futures, and "outcomes." This grammar is often hard to follow when one hears it read aloud, but we do not need to do that in order to voice it.

Vocalizations of code so far are mostly symbolic actions, whether artistic or activist, which have little to do with informal, everyday speech. I witnessed the first reading of code, or something very close to it, at "Hacking in Progress" [12] in 1997. One of the events there was a PGP (Pretty Good Privacy, email encryption software [13]) key signing meeting, in which holders of a PGP key were invited to come and identify themselves to a small circle of people. They handed in their individual keys on a sheet of paper to the person leading the "ceremony." When this person read out people's code, they were to raise a hand to identify their personal key. After each key reading, the individual key "holder" was asked to confirm whether the reading was correct. It was late evening and the big tent was empty, except for the PGP key signing party in the middle of it. The atmosphere was serene. It had an almost religious feel to it, and it was very impressive. What this gathering revealed was the core of networking: the people behind the machines and the purpose of those machines. Even if the goal of such a meeting is to ensure that the weakest link in encryption software (humans) is strengthened as much as possible (a technical part of the whole encryption process, one might say), the meetings and exchanges also reveal and empower the human connections served by this software.

Vocalized Code in Art and Activism

Code has been turned into vocals in various ways, and there seem to be four distinctive ways in which code is vocalized: through loose vocal interpretation, through the use of artificial voices, as political pamphlet (forbidden knowledge), or by revealing the human voice in written code. The latter is not at all recognizable as the sound of the physical human voice.

The Slovenian artist Igor Stromajer started singing the HTML code of his website at new media art symposia in 1999, as a reaction against the business-style artist presentation that has become the standard at these events. He printed out the code and just improvised a

melody as he sung it. Stromajer then got permission and funds to do a project in the opera house of Ljubljana, called *Oppera Theoretica Internetika*, a wild mixture of vocal improvisation, news recordings, and reading of code, which also took place in 1999. Ever since, Stromajer has done various operas and ballets in which he performs code. He seems to poke fun at his own ideas of making code physical through song and dance as much as he mocks the seriousness of most media art. The work is humorous as well as critical. As the references to cyber culture in street fashion that are fetishizing new media in a crude way, Stromajer's work is not concerned with a correct depiction of code. These projectsare all about pose, about gesture. They are theatrical and absurd. In his last performance of *Oppera Internetika*, Stromajer did not even use his own voice, but speech software to vocalize the code. The use of speech software in performances is not uncommon. The American poet and artist Alan Sondheim, for instance, has employed speech software for performing a form of duet with a computer, "using the old Mac voices for the code stuff, and paralleling / contradicting them with live voice." In both the projects of Stromajer and Sondheim, the code seems to represent the symbolic order of the computer; it represents the myth, the dark, and the mysterious. Code is not necessarily used in a meaningful way here, but in a manner very similar to the way popular culture deals with new media in general. This is code as glitter or gloom, or code as punk or rock and roll.

Straightforward code readings have a very different purpose. This type of vocalization is closer to a form of enlightenment: code is taken from darkness into the spotlight. There is no mystification here, on the contrary: the content of the code in question is of highest importance. Italian philosopher Franco Berardi, also known as Bifo, made a statement by reading out loud the source code of the "I love you" mail virus. [14] He dedicated himself to this task with great enthusiasm: I strongly recommend you listen to it. The video of this reading was an important part of an exhibition on computer viruses, also titled "I love you" At the Museum for Applied Arts in Frankfurt, Germany. i The reading sounds like poetry, and gains in strength if one considers that this particular virus managed to cause economic damage of about 10 billion dollars and maybe even more harm in personal data loss. The use of the term "virus" for a string of code suggests that natural illnesses can infect your computer, but like common desktop software, computer viruses were designed and written by people. They have been "crafted" to express someone's thoughts, intents, or desires. Viruses, decryption, and encryption software have the potential to destabilize society and are therefore often understood as "illegal" knowledge, as forbidden text. Therefore they are powerful even when they are vocalized through a human body.

The most subtle way of vocalizing code, however, is by letting it speak for itself. By applying the rigorously rational approach of programming and mechanization to emotional human realities, the British artist Graham Harwood managed to voice the unspeakable cruelty of both code and human history at the same time: his work *Lungs* [16] is a Perl poem that calculates the lung volume of people dying under inhuman circumstances. It does so in order to finally "play" the sum total of the lung volumes of all these dead people in one blast through an air raid alarm horn. This project condenses many of the qualities of our "new voice" in one piece: the voice manifests in the new grammar of code; in Harwood's magnificent manipulation of the ancient poem *London* on which *Lungs* is based; and last but not least in the blast of the horn that plays the collected last breaths of people. The human voice has never had so many dimensions.

References:

[1] Gunther Kress, *Literacy in the New Media Age* (Routledge: New York, 2003).
[2] Adrian MacKenzie, *Transductions, Bodies and Machines at Speed* (Continuum Press, 2002).
[3] This seems to be supported by brain research. Desmond Fearnly-Sander's review of Terrence W. Deacon's *The Symbolic Species* (WW Norton & Company: New York, NY, 1997) states: "as you formulate a phrase, one of your brain activities is the motor control of tongue and larynx needed to produce the sounds, and it appears that some shadow of these processes occurs even if you don't actually speak. Processes needed for motor control appear to be used for thinking." http://human-nature.com/nibbs/02/spr.html
[4] Douglas Kahn, *Noise Water Meat, A History of Sound in the Arts* (The MIT Press: Cambridge, MA,1999)
[5] Gunther Kress, *Literacy in the New Media Age* (Routledge: New York, 2003).
[6] http://en.wikipedia.org/wiki/Programming_language
[7] Ibid.
[8] http://bak.spc.org/iod/
[9] Florian Cramer, "Words Made Flesh," Piet Zwart Instituut website, http://pzwart.wdka.hro.nl/mdr/research/fcramer/words-madeflesh/
[10] Ibid.
[11] Nicolas Barker, *Form and Meaning in the History of the Book* (British Library: London, 2003).
[12] HIP97 was a hacker festival organized by people from the former hacker organization Hacktic and the Dutch provider xs4all. http://www.hip97.nl/
[13] http://www.gnupg.org/
[14] http://epidemic.ws/love.mp3
[15] This exhibition was first shown in Frankfurt am Main, Germany in 2002, and in Berlin in 2003. In 2006 it traveled to Novi Sad and Belgrade, Serbia; http://www.digitalcraft.org/iloveyou/
[16] http://databaseimaginary.banff.org/getBioDes.php?id=9&t=3&fc=9

Towards a New Class of Being: The Extended Body

Oron Catts and Ionat Zurr

Abstract

The biomass of disassociated living cells and tissues is in the thousands of tons. These fragments do not fall under current biological or cultural classifications. The notion of the Extended Body developed by the TC&A (Tissue Culture & Art) Project can be seen as a way to define this category of life and, at the same time, an attempt to destabilize some of the rooted perceptions of the classification of living beings. The Extended Body is an amalgamation of the human extended phenotype and tissue life – a unified body for disembodied living fragments, an ontological device, set to draw attention to the need for re-examining current taxonomies and hierarchical perceptions of life. The Extended Body is a tangible metaphor for the Victimless Utopian ideal; at the same time, it paradoxically is an embodiment of the sacrifice of the victim.

The Extent of a Metaphor

A rough estimate would put the biomass of living cells and tissues, which are disassociated from the original bodies that once hosted them, in the millions of tons. In addition, there are tons of fragments of bodies (cells, tissues, organs) that are maintained in suspended animation in cryogenic conditions. All of this biomass requires an intensive technological intervention to prevent transformation to a non-living state. This type of being (or semi-being / semi-living) does not fall under current biological or even cultural classifications. The notion of the Extended Body can be seen as a way to define this category of life, maintaining the need for classification, while at the same time attempting to destabilize some of the rooted perceptions of classification of living beings. Much of this living biological matter can, in theory, be co-cultured and fused (cell fusion), or share its sterile environment (to varying degrees of success). Age, gender, race, species, and location do not play the same roles in the Extended Body as in other living bodies. Research on co-culturing animal and plant cells is currently being conducted. [1] This means that, in theory, every tissue in every living being has the potential to become part of this collection of living fragments. The Extended Body can be seen as an amalgamation of the human extended phenotype and tissue life; the fragmented body that can only survive by technological means: a unified body for disembodied living fragments, and an ontological device, set to draw attention to the need for re-examining current taxonomies and hierarchical perceptions of life. The Extended Body is by no means a fixed, scientifically binding order; it rather is a soft, artistic, and conceptual view of the subject of technologically mediated and augmented life.

The Life of Parts – The Being of the Semi-Living

> *The body cannot survive without organs and cells, but the latter two groups can survive without body.* [2]

The development of tissue culture in the early part of the 20th century ushered in a new type of being that requires a different ontology and, by extension, a different taxonomy of life. These beings are fragments of bodies kept alive with the aid of a new kind of body – a techno scientific one, in vitro (meaning within glass). Tissue culture evolved from a research field in itself (1910-1950s) to a research tool (1950s to present day), and then to a means of production (1990s to present day). The "population" of what can be referred to as partial life and semi-living entities proliferated to a vast amount of cells and tissues that are living and growing outside of the organisms from which they originated. These beings are rarely referred to as subjects; their existence (supported by the techno-scientific project) is indicative of the instrumentalism of life that manifests itself in utilitarian and economic value.

The traditional use of animals (human and non-human) cell and tissue cultures for research, diagnostic, and therapeutic (tissue engineering) ends is increasingly being surpassed by the use of cells and tissues for production of biological agents (mainly antibodies). Antibody production is now being done in large-scale bioreactors, as "demand for many antibodies is very intensive, leading companies to build more and larger manufacturing plants on the scale of tens of thousands of liters." [3] Other recent uses of tissue cultures include the attempts to grow tissue-engineered meat (sometimes wrongly referred to as violence-free meat), and the development of living toxicity sensors (Linda Griffith, MIT), experimental actuators [4], complex research models, and art. In addition, tissues, cells and organs are being harvested from recently dead and living "donors" for organ transplant, or are being stored in suspended animation in cryogenic conditions. Some of the cells and tissues are removed form the body, manipulated or only reproduced in culture, and then reintroduced into a body – not necessarily the original body or even the same species. Other semi-living entities can be found at the butchers and on the side of the road (among other places) where living cells can exist in the

bodies and parts of animals. Even without technological intervention these cells and tissues survive for hours and days after the organism is considered to be dead (meat).

The questions that arise from the existence of a large biomass consisting of living fragments of bodies are rarely addressed. And when this existence is discussed, it is almost exclusively in an anthropocentric manner. Examples are Andrews and Nelkin in *Body Bazaar* (2001) who explore the legal implications of tissue commodity [5] and Waldby & Mitchell (2006) who investigate human tissue (predominantly blood) as a waste and as a gift in the context of the global economy. [6] Squier (2004), in her book *Liminal Life* [7], is moving a bit further by looking at partial lives as "themselves" and referring to them as Liminal Lives. However, she also focuses on human tissue and human embryos and the beneficial or potentially hazardous effects of these liminal lives on human society. In certain instances, popular media does refer in a non-direct way to these partial lives as partial beings. A recent example can be found in a *New Scientist* article describing Griffith and Shuler tissue chip hybrids (or Meta Chips). While Griffith states that "our vision is building the human body on a chip", the article is entitled "Dawn of the Zombies" since "You can poke them, prod them and pump them full of drugs, and they'll never complain." [8] All of the above examples fail to give an agency or even a proto-agency to the living fragments; these examples treat the semi-living as quasi-life at best and in most cases as equal to inert objects.

Thacker is moving towards a different consideration when he refers to the semi-living as "actants;" He asks: "Can there be a politics that effectively takes into account these nonhuman actants, entities that are much more than inert objects and yet much less than autonomous organisms? How can we keep from falling into the too easy habit of reducing all actants to agential origins (e.g., the notion that, yes, there are these nonhuman machines, but ultimately humans design and operate them)?" [9] TC&A's Extended Body is a small step towards answering Thacker's question.

The Metaphysical Question

When tissue culture started at the beginning of the 20th century, it required a new way of looking at the body as a community of discreet entities that can survive independently from the body. The use of the term "cell," coined by Hook (1667), derived from the morphological resemblance, according to Hook's observation, between cork cells and the structure of a beehive. However, Canguilhem observes, "Yet who can say whether or not the human mind, consciously borrowing from the beehive this term for a part of an organism, did not unconsciously borrow as well the notion of the cooperative labor that produces the honeycomb?" He answers his own question by saying, "what is certain is that affective and social values of cooperation and association lurk more or less discreetly in the background of the developing cell theory." [10]

The example of the beehive further illustrates the complications involved in ideas of individuality. A Beehive can be seen as one organism, with the individual bees as organs / tissues / cells of that organism (E. O Wilson). However, we do have the tendency, due to the morphology and behavior of the individual bee (and due to our anthropomorphic tendencies), to perceive one bee as an independent organism.

Observations of the fragmentation of the body into individual cells, which can be kept alive as semi-autonomous beings stripped away from their original body and its complex immune system, drove Huxley, Wells, and Wells to write: "We may compare the body to a community, and the cells to the individuals of which this vast organized population is composed. It is very important to realize that this is not a merely allegorical comparison. It is a statement of fact, for – we resort here to the stress of italics – *single cells can be isolated from the rest of the body, and kept alive.*" [11]

If the body is a community of cells, how can one refer to the collection of cells that are growing outside the body? What is the "community" to which they belong?

> *Any cell – man, animal, fish, fowl, or insect – given the chance and under the right conditions, brought into contact with any other cell, however foreign, will fuse with it. Cytoplasm will flow easily from one to the other, the nuclei will combine, and it will become, for a time anyway, a single cell with two complete, alien genomes, ready to dance, ready to multiply. It is a Chimera, a Griffon, a Sphinx, a Ganesha, a Peruvian God, a Ch'i-lin, an omen of good fortune, a wish for the world.* [12]

When cells and tissues are removed from the (context of the) host body and kept alive, they are also being stripped of many other aspects of what is perceived as a living individual. They are kept alive and grown in a technological environment that acts as a surrogate body. But, in the most fundamental way, they represent the ultimate bare life. These cells and tissues change morphologically, functionally, and in relations to space / time. Most isolated cells and tissues can survive and grow alongside cells and tissues of different individuals, species and "generations." In many cases, a fairly simple procedure will temporarily open up the cells and nuclei membranes to fuse two or more cells, creating a novel chimerical being that constitutes living parts of different individuals and species. In addition, important ingredients in (mainly) the nutrients provided to cells and tissues are derived from other living beings. One such ingredient is foetal calf serum, which is used across the board to feed cultures of many cell types and origins.

It becomes obvious that the dissociated tissues and cells conform to a lowest common denominator – they are alive, they need technological support and they can coexist. Therefore, they form a kind of community. This community does not conform to common biological and cultural classifications and presents both an ontological and epistemological challenge: ontological because it calls into question the definition of being in a very basic and fundamental way; and epistemological because it questions our knowledge production from the perspective of a fragmented out-of-context collection of "kind-of-alive" beings. It also reveals new perceptions with regard to the human position within the larger ecology.

Without being a vitalist, one begins to formulate ontological questions that need to be addressed:
Does life have an intrinsic value that is different from the value of non-life?
Is life different from non-life in that it is a subject rather then an object?
Where does this Haecceity reside? [13]
Where can partial life and the semi-living be placed in the ontological and taxonomical charts?
Do all fragments of one individual, although located in different geographical locations, still have the essence of this individual? Or are they all fragments of the same species?
Is it the techno-scientific vessel that makes fragments a "one body / community" and a "one being"?

Classification

The semi-living does not seem to exist or conform to either Linnaean taxonomy or Molecular systematics (chemotaxonomy). The origin of most cells can be traced back to an organism that can be classified under these systems. Cells and tissue banks are still using this system to identity their "stock" and sometimes even add ethnicity to some human cell lines. There are cells in the collection that do not adhere to either Linnaean taxonomy or Molecular systematics (chemotaxonomy), such as the McCoy cell line, which is classified as mouse cells even though the cells' origin is identified as human. [14] In addition, the cell lines in the collection are actually sorted by unique names and catalogue numbers, partly because traditional taxonomies are not sufficient to deal with the collection.

Current taxonomy is rooted in 18th-century understandings of life and therefore carries some of the social values and scientific and ontological understandings of that time; for example, biblical understandings in which a species is defined according to morphological resemblance and the ability to give fertile offspring. Contemporary attempts at refining the system employ recombinant systematics based on data derived from DNA.

Besides enhancing current genohype [15], this system excludes some of the more puzzling entities that exist today, such as chimeras, who have a few types of tissues with different DNA; or those semi-living entities that combine parts of living beings considered distinct in current taxonomies and are supported by the technology to maintain a form of life.

However, we would like to concentrate on the other "being" that falls in-between categories of the system of taxonomy, whether based on sexual selection or recombinant systematics – that of the Extended Body. We argue for a consideration of quasi-beings that are not animal (including human) as well as not fully living. These quasi-beings are liminal lives that are getting larger in population and in significance. These semi-living entities can convey to us new understandings of life and our own position within the fabric of living and non-living environments.

Humans – Animals Compared

In the dominant discourse exploring the human position within the living world, humans are compared and contrasted with other animals. This already takes a "speciest" position as a starting point for interweaving humans in the ecological fabric. We are suggesting that, rather than falling back into familiar arguments, we should adopt a new and fresh perspective that will force us to re-examine our position within a taxonomy that is increasingly dissolved, fragmented, and inadequate.

We may want to begin taxonomizing humans together with other animals (as humans are animals) and look for another mirror image for comparison and contrast; a broken mirror image that is not necessarily so much like us, but can be, literally, part of us.

In order to explain our position we would like to investigate Heidegger's division of the world into three ontological positions – objects (such as stones) as wordless; animals as "poor in the world;" and humans as world-forming.

We would like to qualify our analysis by asserting that the purpose of this paper is not to provide an analysis of Heidegger's philosophy (we are far from qualified for such an enormous task) but rather to use Heidegger's arguments as an aid for establishing a new position from which we can explore the different beings and semi-beings in the world.

Heidegger believes that animals have radically different modes of being in the world than humans. Animals lack the ability to perceive other entities in the world as beings (but they are capable of instinctive comprehensions of textures, scent, colors etc.). As a result of this lack, animals do not perceive themselves as beings either. Therefore they are "in poverty" in the world (Heidegger did not attach any evaluation to such a position). Humans, in contrast, can perceive beings as well

as comprehend their own "being-ness."

Heidegger's arguments are based on the latest discoveries in the life sciences of his time. The empirical evidence for his philosophical argument mainly is the work of the zoologist Emanuel Radl and Jakob von Uexküll.

The Bee Experiment
As previously discussed, bees can be seen as part of an organism (the colony / the community) rather than an individual being. Cells were not just named after the beehive but can be seen as analogous to the bee (as part of a community, according to Huxley). Therefore the bee experiment described in the following can be seen as an appropriate approach to exploring the position of the Extended Body. We should note, however, that there is some danger in applying Wilson's concept of sociobiology, where he equates the construct of the social insect (colony) to human society. (This comparison is reductionist and may lead to ideological propagation.) However, as a thought experiment, one can look at metaphorical relationships between cells and bodies (i.e Huxley's community) and between humans and their extended phenotype (society, culture, technology).

Some scientific experiments have demonstrated that the worker bee is not indifferent to the scent and color of the flower from which it receives nourishment. The bee sucks honey from a flower with some particular traits (such as scent and color) and flies off. Most people will understand the latter as a conscious action performed by the bee once it realizes that the flower does not hold any more honey. Heidegger, however, questioned whether the reason why the bee stops sucking honey and flies off is in fact the bee's comprehension of the fact that honey is no longer present and available. Heidegger believed that the bee lacked any ability to be aware of the absence of honey as such.

To support his argument, Heidegger outlines an experiment in which a bee was placed in front of a bowl filled with more honey than it could consume at once. The bee began to suck the honey and, at a certain point, stopped and flew off (leaving some honey in the bowl). According to Heidegger, this behavior could be wrongly interpreted as the bee recognizing that it could not suck the whole amount of honey and therefore stopping. In another experiment, it was observed that if the bee abdomen is carefully cut away while the bee is sucking honey, the bee will continue to do so, regardless of the amount its body can accumulate (even when honey begins dripping out of the bee). This experiment led Heidegger to assert that the bee lacks the cognitive ability to conceive the existence of honey and is only acting instinctively (almost mechanically?).

This paper does not intend to discuss the flaws of the experiment or the fact that Heidegger carelessly jumps to conclusions. After all, the bee was stripped of its natural context and placed into a techno-scientific one – a bowl with a large amount of honey. The bee was also physically "reduced" through the removal of its abdomen and was therefore coping with an extreme and unfamiliar situation. To explain the behavior of the bee, without any consideration for agency, is not necessarily the right approach. Paradoxically, one could argue that the bee may have been "consciously" behaving this way because of the stressful circumstances – in order to defy them.

There are arguments that humans may exhibit similar behavior when they are interfered with both physically or emotionally (one just needs to look at our Western obesity problem to realize that some of us have lost our ability to know when it is time to stop consuming).

We would argue that this experiment did not prove in any way that animals have no agency as such; one also cannot conclude that they are different from humans on the basis of this specific experiment. It may very well be that the bee can perceive other beings as such. In turn, our own "animality constraints" may diminish our capability of perceiving other beings as beings (such as Heidegger's ability to perceive a bee as a being that is able to perceive other beings as such).

If we trace back the analogy between cells and a beehive, we can understand one bee as a whole organism or as an organ in the organism / colony forming an "individual body." In other words, experimentation performed on a single bee can be compared to experimentation with tissue cells in a petri dish. Taken from the context of the bee-colony, the bee will behave in unusual ways, just like cells removed from the body. The bee can be seen as part of an extended body.

Our argument addresses notions of different scales of size, time etc., as well as different sensual perceptions (visuals, sound, smell or texture) that are determined by our biological makeup. All "beings" are constructed according to variables of these parameters. Furthermore, beings can exist within beings, parallel to other beings, engulfing other beings, partly immersed in other beings etc. and not be aware of such "beingness."

The Extended Body is a construct that may enable us to question the classification of the world according to humans / animals / non-living entities and look at the semi-livings that are located in between human-animal (cells of humans and animals fused together), human-object (a tissue-engineered construct consisting of human cells) and animal-object (a tissue-engineered construct consisting of animal cells) etc. Furthermore, these semi-livings can fall into any of these categories and still not conform to any one of our understandings of these categories.

We are all becoming part of the Extended Body, dependent on the techno-scientific project in order to extend our survival. Fragments of our bodies are poten-

tially becoming part of the Extended Body and fusing with other semi-living beings. The Extended Body engulfs all these cells, tissues of organs that are stripped of / removed from their host bodies – cells, tissues and organs without "natural" body – and are destined to be kept alive and often even proliferate in a new body that is techno-scientific. These bits of flesh can physically grow in different configurations, together or dismembered, regardless of their original host species, race, sex etc. This ability to co-culture, and in some cases even to hybridize, stems from the context into which the fragments are introduced. Hence, they are stripped from a body with an immune system and are introduced into a new "body" yet to be defined as a specific "being" that will not reject any foreign agent who / which may want to become part of it.

The Extended Body Point of View

The flexibility and versatility (vulnerability) of the Extended Body "opens up" a niche for new semi-living semi-beings. It is our intent to take their – the Extended Body – "point of view" in order to examine new taxonomies and our new relations with the living and semi-living world around us from a fresh perspective.

Honor Fell (1900-1986), one of the pioneers in the field of tissue culture, encouraged her scientists to adopt what she referred to as "the tissue culture point of view" [16] as a way to better understand the processes and needs of cells in vitro. In TC&A, we are trying to expand this non-anthropocentric aspiration to a somewhat more complex "entity," which is not human and not non-human, but rather a semi-living being. This way we hope to open up a fresh perspective from which to discuss humans' relations to other beings.

Our position may be somewhat reductionist, however not as reductionist as taking the DNA or the code point of view (the non-living / information-based point of view). We are taking a position that is reductionist with regard to the complexity of the living being; however, this reduction to a more visceral point of view enables, at least from a symbolic perspective, the engagement with different complexities, which are defining notions of living, non-living, species, race, gender, the individual, as well as the I (Am I a discrete being? Am I an accumulation of all my cells?).

The Victimless Utopia

However, everything is not all-engulfing and harmonious in the Extended Body metaphor (or in the Extended Body community, in which scarce resources can lead to a struggle for life and death, and the chance of contamination and death is almost inevitable).

One more complication arising from the Extended Body as a manifestation of the techno-scientific project is that it may create an illusion of a victimless existence. There is a shift from "the red" in the teeth and claws of nature to a mediated nature. The victims are pushed farther away; they still exist, but are much more implicit.

Parts of the living are fragmented and taken away from the context of the host body (and this act of fragmentation is a violent act) and are introduced to a technological mediation that further "abstracts" their liveliness. By creating a new class of semi-being, which is dependent on us for survival, we are also creating a new class for exploitation.

As part of the TC&A project, we explore the ironies involved in the promise of a Victimless Utopia. In our Victimless Utopia series, we have explored the creation / construction of victimless meat in a project titled *Disembodied Cuisine*. [17] We ate, together with some brave volunteers, tiny semi-living frog steaks that were grown for more than two months in bioreactors and used not only expensive resources but also animal-derived ingredients in the nutrient media. [Fig. 1] We referred to them ironically as extreme Nouvelle Cuisine in the sense that they were luxury goods (and not necessarily tasteful ones). Still, the irony sometimes seems to be lost too easily, and now the discourse about a victimless society is being used by a university spin-off company that attempts to secure funding for tissue-engineered meat as a possibility for eating meat without killing the animal. [18]

Figure 1. The Tissue Culture & Art Project, *Disembodied Cuisine* installation, Nantes, France, 2003. Photo: Axel Heise.

We followed this project with *Victimless Leather - A Prototype of Stitch-less Jacket Grown in a Technoscientific "Body"* [19], presenting a miniature leather-like jacket grown out of immortalized cell lines (a mix of human and mouse cells) that cultured and formed a living layer of tissue supported by a biodegradable polymer matrix in a form of a miniature stitch-less coat. [Fig. 2] We were contacted by a commercial company requesting more technical information for potential commercialization of such an idea.

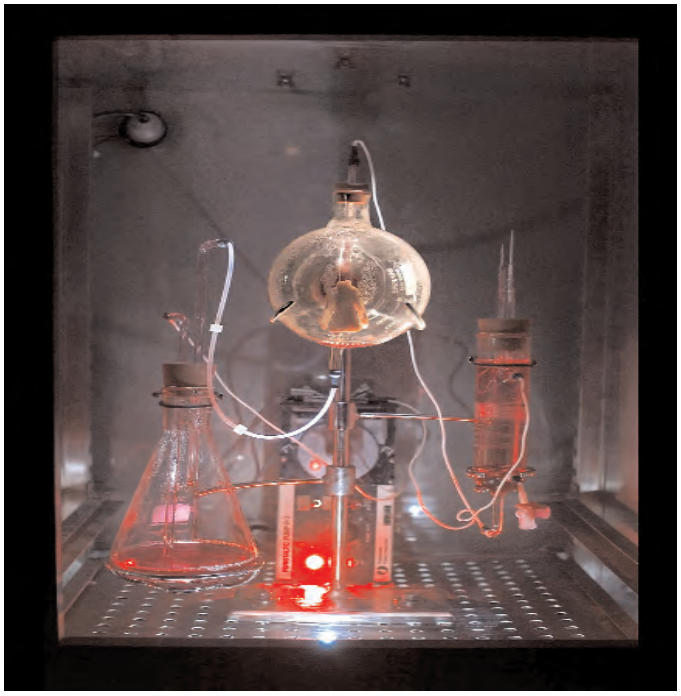


Figure 2. The Tissue Culture & Art Project, *Victimless Leather - A Prototype of Stitch-less Jacket grown in a Technoscientific "Body"* (2004). Bio-degradable polymer connective and bone cells.

This year we performed, for the first time, the *DIY De-Victimizers*, exploring the hypocrisies involved in our relationship with other living and partially living systems by taking the paradoxes and ironies involved in the production of a victimless utopia to somewhat extreme levels of absurdity.

We explored the creation of The DIY De-victimizer Kit as part of the Tissue Engineering & Art Workshop organized by "SymbioticA: the art and science collaborative research laboratory" at the School of Anatomy and Human Biology of the University of Western Australia and run in collaboration with Dr. Stuart Hodgetts. [Fig. 3]

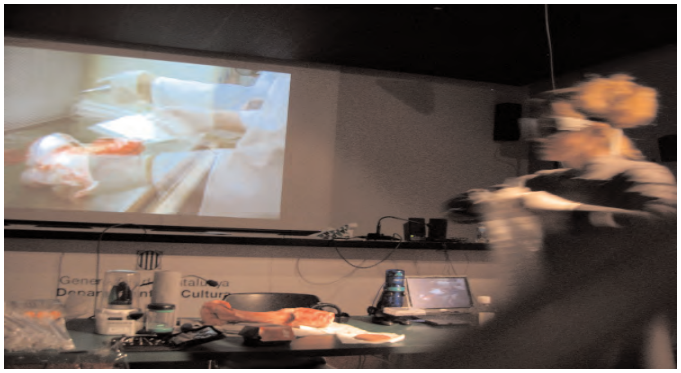


Figure 3. The Tissue Culture & Art Project, *The DIY De-victimizer* (2006). Performance.

The DIY De-victimizer Kit Mark One (DVK m1) was set up to allay some of the guilt people feel when they consume parts of dead animals (as food, for aesthetics reasons or any other purpose) or cause the accidental death of a living being (by a car, a lawnmower, or any other piece of technology). The kit can maintain and in some cases even proliferate and extend the life of parts of the deceased bodies, at least until the guilt recedes. The DIY DVK utilizes off-the-shelf items to construct a basic tissue culture facility; a few specialized nutrients are needed – some of which contain animal-derived material – but the latter is so far removed from the end user that for most people remorsefulness is usually not an issue.

We made use of the DIY DVK for a performative installation in which we experimented with bringing back to life (literally) parts of meats. We attempted to reverse the "destructive" effects of human technology by "re-life-ing" its victims and invited the audience to take an active role in the experiment by assisting us in caring for the fragments of life and making different ethical decisions with regard to these fragments' eventual fate.

Since this project had its debut in Barcelona, we felt compelled to reassess human relations to animals in the context of the Spanish bullfighting ritual. In drawing an analogy between participating in a bullfight ritual and eating McBurger, one may argue that in the bullfighting ritual, the killing of the animal for aesthetic / recreational reasons is more respectful, as it is exposed and even celebrated. However, the fate of the non-human animal is predestined. As an homage to the fighter bull, we re-lifed its tissue and grew it over a miniature replica of a tourist-shop figurine in the shape of a bull. We contrasted the tissue from the bull with that from a burger and tried to obtain viable cells for re-life-ing. We also asked the audience to choose which one they would like to "kill," that is, bring back to its cultural accepted position of dead meat.

As humans' ability to preserve ecological conditions for their survival is questionable, so is the fate of the Extended Body that is dependent on human care for its survival. The Extended Body is an extension of our own (or other living) body that takes the definition and perceptions of what a body is in different and alternative directions. The Extended Body is growing in size, presence, complexity, and versatility and can be a point of departure for addressing our limitations in the understanding of ourselves as an integral part of the ever transforming ecology.

Oron Catts and Ionat Zurr
SymbioticA
School of Anatomy & Human Biology
University of Western Australia

References:

[1] Research on two artistic projects involving the cultivation of plant and animal cells in the same environment currently is underway in SymbioticA; cell fusion between

carrot and frog cells has been achieved in the 1970 by Harris.

[2] Written by Roger Morton as a response to *The Last Word* section in the *New Scientist,* June 10, 2006, No. 2555. This quote is taken from the response to the question, "When an insect is changing inside its cocoon, and has turned to slush, is it alive? And if so, in what way is it alive?," p.57. This is an interesting example as we can categorize the insect in its cocoon stage as a semi-living. However, this case is different from other semi-living explored in this thesis, as the insect in cocoon stage is not in need of an artificial support mechanism to survive and transform to the "fully living" state.

[3] http://www.dddmag.com/ShowPR.aspx?PUBCODE=016&ACCT=1600000100&ISSUE=0510&RELTYPE=PR&ORIGRELTYPE=CEL&PRODCODE=00000000&PRODLETT=I;
Drag Discovery and Development,
http://www.dddmag.com/default.aspx

[4] http://www-personal.umich.edu/~bobden/muscle_tissue_engineering.html

[5] L. Andrews and D. Nelkin, *Body Bazaar: The Market for Human Tissue in the Biotechnology Age* (Crown Publishers: New York, NY, 2001).

[6] C. Waldby and R. Mitchell, *Tissue Economies: Blood, Organs, and Cell Lines in Late Capitalism* (Duke Universilty Press: Durham, NC, and London, UK, 2006).

[7] S. M. Squier, *Liminal Lives: Imagining the Human at Frontiers of Biomedicine* (Duke University Press: Durham, NC and London, UK, 2004).

[8] R. Orwant, "Dawn of the Zombies," *New Scientist* No. 2553, May 27 (2006), p. 40.

[9] Eugene Thacker, *The Global Genome - Biotechnology, Politics, and Culture* (The MIT Press: Cambridge, MA, 2005)

[10] François Delaporte (ed.), *A Vital Rationalist: Selected Writings from Georges Canguilhem* (Zone Books: New York, NY, 1994), p.162.

[11] H. G. Wells, Julian S. Huxley, G. P. Wells, *The Science of Life* (1929), p. 27.

[12] H. Harris, "Roots: Cell fusion" in *BioEssays 2: 4* (Wiley Periodicals, Inc., A Wiley Company, 1985), pp. 176 - 179.

[13] John Duns Scotus (vers 1266 - 1308). Haecceity (transliterated from the Latin haecceitas) is a term from medieval philosophy, first coined by Duns Scotus, which denotes the discrete qualities, properties, or characteristics of an object / person that make it a particular object / person. Haecceity is a person's or object's "thisness." Charles Peirce later used the term as a non-descriptive reference to an individual. See
http://en.wikipedia.org/wiki/Haecceity

[14] http://www.atcc.org/common/catalog/numSearch/numResults.cfm?atccNum=CRL-1696. Little descriptive information about the origin of the McCoy cells appears in literature. They were first mentioned by Pomerat et al. [26143]. The cells were reported to have originated from the synovial fluid in the knee joint of a patient suffering from degenerative arthritis. In ca. 1965, Defendi et al., showed that McCoy cells (designated McCoy A) were indeed human cells. However, another sub-line (designated McCoy B) was, in fact, of mouse origin and possessed marker chromosomes characteristic of strain L mouse fibroblasts. McCoy cells that are presumed to be human, but actually are mouse cells have been disseminated from laboratory to laboratory throughout the world. Initial interest in McCoy cells followed the demonstration by Gordon and Quan [PubMed ID: 14268619] and Gordon et al. [PubMed ID: 4110420] that ionizing radiation (cobalt-60) greatly increased the susceptibility of McCoy cells to infection by chlamydia strains. A culture of the so-called McCoy cell line was received from the Center for Disease Control, Cell Culture Department, Atlanta, GA in March, 1984. Documentation of origin or passage history was not available. The cells have been used to propagate laboratory strains of the 15 recognized serotypes of Chlamydia trachomatis. The cell line has been satisfactory for chlamydia growth for at least 43 passages at ATCC. The cells are susceptible to chlamydia strains, and can be used to propagate chlamydia. Tested and found negative for ectromelia virus (mousepox).
MCCOY AND MCCOY-PLOVDIV CELL LINES IN EXPERIMENTAL AND DIAGNOSTIC PRACTICE – PAST, PRESENT AND PERSPECTIVES, Journal of Culture Collections, National Bank for Industrial Microorganisms and Cell Cultures, ISSN: 1310-8360, Vol. 4, Num. 1 (2005), pp. 3-16

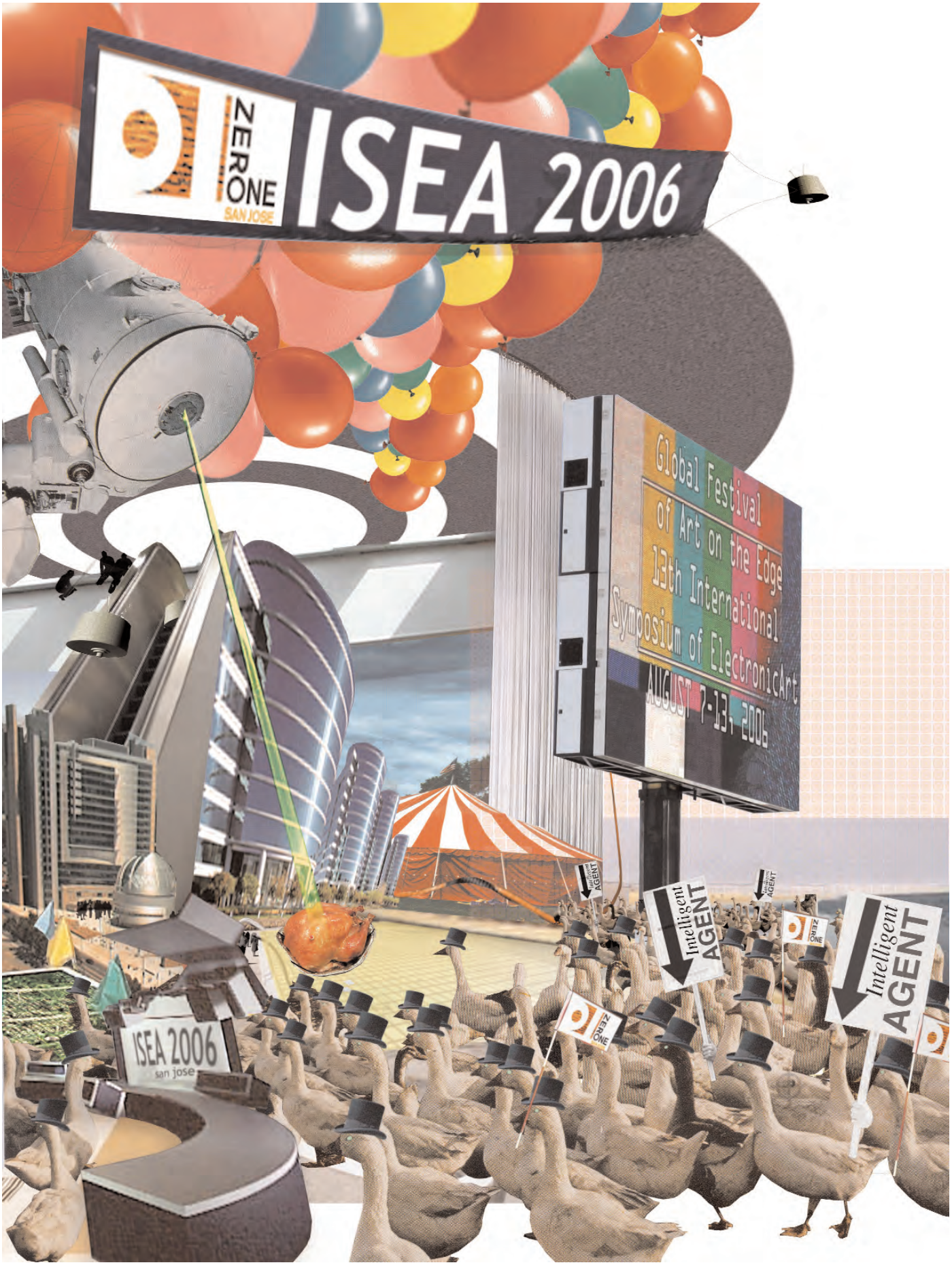
[15] See O. Catts & I. Zurr, "Big Pigs Small Wings: On Genohype and Artistic Autonomy" in M. Cooper and A. Goffey (eds.), *Culture Machine 7 – Biopolitics* (2005).

[16] Cited in S. Squier, "Life and Death at Strangways" in P. Brodwin (ed.), *Biotechnology and Culture: Bodies, Anxieties, Ethics* (Indiana University Press: Bloomington, IN, 2000).

[17] See
http://www.tca.uwa.edu.au/disembodied/dis.html

[18] See *New Harvest*, http://www.new-harvest.org/

[19] http://www.tca.uwa.edu.au/vl/vl.html



"Transvergence" by Nathaniel Murray, http://www.agency103.com/nathanielmurray/

Absence in Common: An Operator for the Inoperative Community

Kevin Hamilton

> *I have intimated that, especially in a secular context, a commonly desired ultimate foundation or ground is full unity, community, or consensus, which is often, if not typically, figured as lost or perhaps lacking, usually because of the intrusive presence of others seen as outsiders or polluters of the city or the body politic. One may, however, insist that such unity, community, or consensus is absent and that the sociopolitical problem is how to deal with that absence as well as the differences and forms of conflict that accompany it.*
> Dominick LaCapra, "Trauma, Absence, Loss" [1]

The Mojave Phone Booth. Courtesy of http://www.flickr.com/photos/eyetwist

This paper will argue for the relevance of a phenomenology of presence to a discussion of where and how a "community domain" is possible.

As an ideal within modernity, community has enjoyed remarkable staying power. Dreams of universal language, perfectly organized spaces, and augmented conversation never seem to lose their allure. But as the refuse of failed utopias mounds high, many people question whether ideals of community have not hurt more than they have helped. Among the skeptics are philosophers and political theorists, artists and historians of technology. Significant about this body of critique is that communication itself, and the technological means by which it is achieved, have emerged as an important and material way in which ideals of community are habitualized and inscribed into culture.

Community, Communication, and Communion

In *Speaking into the Air, a History of the Idea of Communication*, John Durham Peters examines communication as a historicized cultural form, one that has inhibited our ability to actually relate to one another. In Peters' history, ideal and authentic communication between individuals typically takes the form of wordless exchange, a perfect transfer in which mediation falls away to allow for fusion of souls. As far back as Plato, and driven home by modern mass communication, missed connections drive the desire for a less material form of social relations. Our ideals and technologies trap us within a cycle of utopia and dystopia. "Too often," Peters writes, "'communication' misleads us from the task of building worlds together. It invites us into a world of unions without politics, understandings without language, and souls without bodies, only to make politics, language and bodies reappear as obstacles rather than blessings." [2]

"The fully realized person of individualistic or communistic humanism is the dead person," writes Jean Luc Nancy in a related work, *The Inoperative Community*. [3] Nancy shares with Peters a concern for how often difference is treated as a barrier to be overcome, or a boundary that defines the fully realized person. Where Peters urges us to celebrate the mutable and faulted nature of language, Nancy calls for a new definition of subjecthood. As singular beings, rather than individuals, we come into being through recognizing the boundaries of the self at another. Community results not from fusion with another or through autonomous subscription to a common body, but through mutual acknowledgment of difference. Selfhood emerges only where one person ends, and another (or even death) begins. Nancy writes:

> *Communication consists before all else in this sharing and this [co-appearance] of finitude: that is, in the dislocation and in the interpellation that reveal themselves to be constitutive of being-in-common - precisely inasmuch as being-in-common is not a common being [...] Only in this communication are singular beings given - without a bond and without communion, equally distant from any notion of connection or joining from the outside and from any notion of a common and fusional interiority.* [4]

Common to the problematic ideals identified by Nancy and Peters is a failure to account for absence – the absence of being and selfhood beyond the limits of one's own sensorium. [Fig. 1] Instead of recognizing the limits of death or difference as that which we hold in common, utopian communicants attempt to transcend death through pursuit of universal language, or extension of the self into a common being that cannot abide difference.

Figure 1. An orientalized naif listens closely for a voice that will never come. *The Questioner of the Sphinx*, Elihu Vedder, 1863. Courtesy of http://www.artcyclopedia.com

Enacted Absence

Importantly for new media practitioners, Peters believes that we realize and routinize such reactions to absence through our technologies of communication. He traces a helpful and now familiar history in which 19th-century spiritualism directly influences early understanding of telegraphy, telephony, eventually satellites and even the search for extra-terrestrials. [5] Across these attempts to communicate lies a common test for presence, a test coincident with the test for limits to the self. At the seance, a medium "pings" the wooden table to see if a spirit will rap in return – contact with the world beyond is constituted through an echo, an aural mirror, but also a disjuncture of sense and belief. The presence of an other is only achievable through a break of time and space, a detachment of the senses.

Leigh Eric Schmidt demonstrates how such an epistemological break serves even secularist agendas, through a "re-education of the senses" based on enacted absence. In his book *Hearing Things: Religion, Illusion and the American Enlightenment*, Schmidt tells of scientists examining oracular statues with stethoscopes, and traveling magicians who re-create Delphi through props and speaking tubes. [6] Each performance of simulated aural revelation concluded by pulling back the curtain, allowing audience members to then speak through the mouth of a goddess.

In these histories of telepresence, absence is either quickly filled (even haunted), or left gaping to revisit as a fetishized site of trauma – the structural trauma of realizing one's own finitude, and the impossibility of community (or sometimes divinity). In his study of the concept of "ether," by which absence is often materialized, Joe Milutis quotes the early Russian radio artist Khlebnikov:

> *Where has this great stream of sound come from, this inundation of the whole country in supernatural singing, in the sound of beating wings, this broad silver stream full of whistlings and clangor and marvelous mad bells surging from somewhere we are not, mingling with children's voices singing and the sound of wings?*
>
> *Over the center of every town in the country these voices pour down, a silver shower of sound. Amazing silver bells mixed with whistlings surge down from above. Are these perhaps the voices of heaven, spirits flying low over the farmhouse roof?*
>
> *No.* [7]

Our technologies of presence set us up to expect communication and connection where it will never happen, to imagine community in ways that are bound to fail. How might telepresent technology instead acknowledge absence without fetishizing it, abhor the void without filling it? Neither Peters nor Nancy address this question in detail, though their analyses fully articulate the need. If the histories related by Schmidt and others are any indication, we will need to answer this question through practice as well as theory. First however, I would like to enlist one other area of discourse – that of trauma and memory, especially as manifest in memorial spatial, aural, and pictorial practices.

The Trauma of Absence

Failures to confront absence in communication bear a close resemblance to failures to confront and work *through* the experience of trauma. As we benefit from a large body of work analyzing material responses to trauma, perhaps we might answer the calls of Peters or Nancy through some cross-disciplinary discussion.

Telemediated experience, photography and even the recorded voice rely on some small set of data to bridge a temporal-spatial gap between persons. Likewise, recovery from trauma involves the utilization of present sensory experience to bridge a temporal gap introduced by traumatic dislocation of sense and consciousness. Victims of trauma "work through" their experience after having perceived it; as the brain cannot comprehend the event in real-time, only remnants are available for examination. As part of recovery, victims and witnesses revisit the site of trauma through material recreation or inscription.

Important to this possibly dangerous analogy, however, are some distinctions made by Dominick LaCapra. He describes recovery from trauma as a process of separating absence from *loss*, where loss involves a particular historical event, and absence the perception of something as "missing" that was never present to begin with. Conflation or confusion of these is part of traumatic experience, but could also result from inappropriate identification with another's loss, mistaking felt absence for experienced loss. Failure to properly distinguish between the two can have disastrous consequences.

> *When absence is converted into loss, one increases the likelihood of misplaced nostalgia or utopian politics in quest of a new totality or fully unified community. When loss is converted into (or encrypted in an indiscriminately generalized rhetoric of) absence, one faces the impasse of endless melancholy, impossible mourning, and interminable aporia in which any process of working through the past and its historical losses is foreclosed or prematurely aborted.* [8]

Treated as loss, absence pushes witnesses to fill voids that cannot be filled, through retaliation, or through misplaced identification with real victims. Alternately, a witness or victim may choose to preserve the void, and revisit the site of perceived historical loss with compulsive regularity.

> *To blur the distinction between, or to conflate, absence and loss may itself bear striking witness to the impact of trauma and the post-traumatic, which create a state of disorientation, agitation, or even confusion and may induce a gripping response whose power and force of attraction can be compelling. The very conflation attests to the way one remains possessed or haunted by the past, whose ghosts and shrouds resist distinctions (such as that between absence and loss). Indeed, in post-traumatic situations in which one relives (or acts out) the past, distinctions tend to collapse, including the crucial distinction between then and now wherein one is able to remember what happened to one in the past but realize one is living in the here and now with future possibilities. I would argue that the response of even secondary witnesses (including historians) to traumatic events must involve empathic unsettlement that should register in one's very mode of address in ways of revealing both similarities and differences across genres (such as history and literature). But a difficulty arises when the virtual experience involved in empathy gives way to vicarious victimhood, and empathy with the victim seems to become an identity. And a post-traumatic response of unsettlement becomes questionable when it is routinized in a methodology or style that enacts compulsive repetition, including the compulsively repetitive turn to the aporia, paradox, or impasse.* [9]

LaCapra's descriptions of conflated absence and loss are reminiscent of utopian attempts at community or communication, which typically blur distinctions between self and other, then and now, here and there. Reading Nancy or Peters through LaCapra, the absence of perfect communion with others is sometimes misconstrued as an Edenic loss, a historic Fall from which we must struggle to recover. For all three of these scholars, we ignore this void or fill it to the peril of ourselves and others. In a secularized world, there has been no golden time of communion, no perfect place of immanence and clear transfer of thought, nor will there be. Yet new media are both lauded and derided as the progenitors or destroyers of such a place. [10]

LaCapra alludes to ways in which absence misunderstood as loss can manifest itself in destructive forms of nationalism. He also identifies in such confusion a more subtle violence towards difference, through misplaced empathy that folds the other (the real victim) into the self. To violently empathize is to expand the space of the self, constructing social symmetry where there is none.

Certainly there are echoes here of the ways in which telecommunication constructs symmetrical social experiences that mask or obscure the real power dynamics at work. Alternately, if in communication we decline to fill the void of absence, we are still often predisposed to fetishizing it, revisiting the wound with compulsive regularity. We scan the stations for a signal, lift the receiver to see if anyone is on the party line, perhaps even compulsively re-check our email. Like Donnie Darko's Beckett-hero Roberta Sparrow, we spend our days pacing back and forth to see if the void is still there in the mailbox. [Fig. 2]

Figure 2. Roberta Sparrow (aka "Grandma Death") checks her mail again in *Donnie Darko.*

Representing Traumatic Loss: Space

Turning back to the comparison of absent community and trauma, what might we learn from memorial responses to traumatic loss? Remaining alert to the danger of equating absence with historical loss, what might we learn from spatial, pictorial, or aural attempts to recover from trauma?

In his book *Present Pasts: Urban Palimpsests and the Politics of Memory*, Andreas Huyssen surveys recent attempts to grapple with loss through monument and public space. With Berlin as a focus, he discusses Christo's wrapping of the Reichstag and the commercial redevelopment of a war-razed Potsdamer Platz before turning to Libeskind's Jewish Museum. Maya Lin's popular Vietnam Memorial prompted a near institutionalization of the physical void as a way of remembering loss, and Berlin has more than its share of holes. Huyssen outlines some of the dangers of preserving absence before lauding Libeskind's design, in which a jagged meander of a building is transected by a series of inaccessible spaces. Visitors encounter these humanless voids through interior windows from every floor, but can never enter. He writes:

> *There is a danger of romanticizing or naturalizing the voided center of Berlin, just as Libeskind's building may ultimately not avoid the reproach of aestheticizing or monumentalizing the void architecturally. But then the very articulation of this museal space demonstrates the architect's awareness of the dangers of monumentality: huge as the expansion is, the spectator can never see or experience it as a whole. Both the void inside and the building as perceived from outside elude the totalizing gaze upon which monumental effects are predicated.* [11]

Huyssen is aware of the dangers outlined by LaCapra, especially when manifest in the design of public space. To pretend as if there had been no loss would of course be unjust, and would inhibit recovery from trauma. On the other hand, to fetishize the void (through piles of shoes, or the glass chairs of Oklahoma City, or the reconstructed footprint-holes of the World Trade Center) is to encourage mourning that is both non-specific and too easily grasped. At best it facilitates inappropriate identification with the victims, and at worst endangers the memory of specific atrocities through abstraction.

Figure 3. A visitor looks into the void at Daniel Libeskind's Jewish Museum, Berlin.

For Huyssen, Libeskind avoids these dangers through the construction of a void that is beyond full human comprehension, but which is still visible from the periphery. [Fig. 3] Like historical loss, the void in the Jewish Museum has a finite shape and existence in the world, but it is not one easily known or ordered, appropriated. Though only a simple axis, Libeskind's void emerges unpredictably, asserting itself back into the path of the museum visitor. We are prevented from projecting ourselves fully into these spaces, as there are always some portions obscured from view – they cannot be ours. The design preserves rather than obscures the traumatic break between knowledge and perception – the real loss remains larger than we can imagine, beyond rational scale, yet we are given an analogical sensory experience that resists metonymy, and perhaps even metaphor.

Libeskind has facilitated a site for recovery from trauma that utilizes space to make loss physical, sensory, and thus seemingly obvious, yet ultimately not assumable into experience. For witnesses as distant as those born in another century and another continent, the experience still attempts to bridge a gap of sense, yet without succumbing to the ungrantable desire to know "what it was like."

Representing Traumatic Loss: Image

Where Huyssen and Libeskind seek to facilitate recovery through spatial organization, others have approached the process as temporal, through image or sound. In *Spectral Evidence*, Ulrich Baer explores the interrelated temporalities of trauma and photography, with an emphasis on representations of the Jewish Holocaust. Some pictures, according to Baer, resist conventional comprehension as a frozen moment within a stream of time. As in traumatic experience, these images seem to establish their own time, remaining apart from history, and defying contextualization. He goes on to wonder if perhaps all photography might share this quality:

> *If we analyze photographs exclusively through establishing the context of their production, we may overlook the constitutive breakdown of context that, in a structural analogy to trauma, is staged by every photograph. In some photographs, the impression of timelessness coincides with a strange temporality and contradictory sense of the present surrounding the experiences depicted. To analyze images that focus on such interruptions and loss of context, therefore, it is not sufficient to refer to the extrapictorial "social and psychic formations of the [photograph's] author / reader." Rather, we must consider such photographs in the light of what Eduardo Cadava has identified as the peculiar structure that lies between "the photographic image and any particular referent," which is, in fact, "the absence of relation." This absence of relation may come into focus when reading photography through trauma theory – and vice versa, when reading trauma theory through the startling effect of reality created by*

photography. Photographs present their referents as peculiarly severed from the time in which they were shot, thus precluding simple recourse to the contexts established by individual and collective forms of historical consciousness. [12]

Baer's account invites us to see pictures as analogous to the sensory evidence of a traumatic event. Though we may desire a reconstruction of the original event using available data, the gap between sense and history is ultimately impossible to close. A picture invites either inclusion in the present or placement in a specific past, through attachment to a particular referent. For Baer, neither is fully possible, nor desirable.

Figure 4. Untitled. Mikael Levin, from *War Story*. Courtesy of www.mikaellevin.com

For examples of this, he looks to the concentration camp photographs of Mikael Levin [Fig. 4] and Dirk Reinartz. In each case, the picture is neither conventionally picturesque nor compositionally resistant to the gaze; instead of architectural ruins or other obvious signs of trauma, we see an unremarkable yet accessible landscape. A title or published context invites closer inspection, in order to place a banal image in the context of known historical atrocities.

Because they do not contain evidence of their importance, these photographs ask to be regarded on strictly modernist terms – as if their significance and merit derived not from our knowledge of context but from intrinsic formal criteria alone. By representing the Holocaust in such stringently formal terms, Reinhartz and Levin force us to see that there is nothing to see there; and they show us that there is something in a catastrophe as vast as the Holocaust that remains inassimilable to historicist or contextual readings. Just when they posit the event as radically singular, and thus when they risk investing absence with spiritual meaning, Reinartz and Levin retract the promise that we can transcend the photographed void to reach some comprehensive, and thus consoling, meaning. [13]

We are left with a picture that refers only to absence, an absence that implicates us in our desire to assimilate another time into ours. Referring to the images more often associated with death camps, Baer writes, "The rush of moral indignation that often accompanies the encounter with other graphic pictures of atrocities may be narcissistically satisfying, but it may also free us from the responsibility of placing our own experiences in relation to something that remains, finally, incomprehensible." [14] Like the gaps between beings, like the end of self, these atrocities invite assimilation into our world, but ultimately refuse it.

Through the use of perspective and conventional pictorial composition, the photos of Reinartz and Levin invite involvement by the viewer. Textual identification of the horrible, invisible histories of these sites pushes the viewer back out again. Baer describes this tension as catching the viewer between place (belonging) and space (exclusion), leaving her to confront her own "subject-position," a phrase he borrows from LaCapra. The only ways out of this dilemma are sentimental identification with a lost victim, or restoration of sense to the image through its location within an archive. The former violently asserts subjectivity at the expense of acknowledging an unknowable loss; the latter uses objectivity as pretense for an equally violent refusal to confront the singularity of the event.

Like Nancy's "singular being," a visitor to Berlin's Jewish Museum remains no more or less isolated from others, or from loss. Likewise, viewers of Baer's photographs confront the gap between their time and that of a victim's downfall. They look, and compare, at first experiencing confusion before growing gradually more aware of their own position in a space of multiple and discontinuous times and histories. At the limit of photography, a viewer discovers her beginning.

Representing Traumatic Loss: Sound

Responsible application of memorial practice toward a technologized sensorium of beings-in-common requires that we examine the aural as well as the spatial, temporal, and pictorial. Sonic representations of traumatic loss are not hard to find; the events of September 11, 2001, yielded numerous and powerful artifacts. We could listen to the recordings of artist Stephen Vitiello, who before 9/11 captured wind noise on a window of the World Trade Center's 91st floor; or to Mark Bain's record of the sounds of impact and collapse via seismic recordings made in Manhattan; Janet Cardiff's *40 Part Motet*, coincidently on display at P.S.1, became a de facto monument to loss for many; the aspirationally democratic *Sonic Memorial* collected audio artifacts in an online archive; we might even listen to recently-released

recordings of emergency calls by stranded Trade Center workers. In these eerie "cut-ups," the victims' voices have been edited out by court order, though breathing is still audible over the responses of dispatchers.

Ultimately, however, the most applicable artifacts for our project are the unlikely sonic monuments of Richard Basinski's *The Disintegration Loops*. [Fig. 5] What began as a formal exercise in private melancholy suddenly found enormous public resonance, eventually reaching critical acclaim and unheard-of popularity for an avant-garde experiment.

Figure 5. Poster for a film version of Basinski's *The Disintegration Loops*. Courtesy of http://www.mmlxii.com/

During August and September of 2001, Basinski digitally recorded the degradation of decades-old magnetic tape loops, remnants of former projects. On each track, a simple and pastoral musical phrase repeats regularly, dirge-like and elegeic, for as little as 12 minutes or as long as an hour, until the tape loop presumably falls apart. Gaps and distortions grow progressively worse – to play these fragile loops was literally to destroy them, and we are hearing their last performance. Already a poignant meditation on ephemerality and the passing of one form to another at millenium's end, *The Disintegration Loops* found a whole new function on September 11. As the artist worked that day, he watched the planes hit and the towers fall through his window in Brooklyn. Basinski and friends then went to the roof, where he finished the project as the smoke continued to rise, and the world sank into a whole new political dynamic.

The four compact disks of *The Disintegration Loops* are incredibly and surprisingly moving. Each disk's cover contains the same image at different stages of dusk, a view from afar of the World Financial Center dome, visible beneath a plume of smoke in the growing darkness. Like Baer's chosen photographs, Basinski's tracks invite an unverifiable association through contextual narrative. Listening to the recordings, we hear nothing to indicate the presence of the burning pile across the river. As the piece is more musical than pictorial, we lack even the benefit of perspectival space to invite us in. In its place, however, we are offered sentiment, the sentiment of Satie-like melodies, of Eno's ambience, and two decades or more of moody electronic synthesis. The phrases invite emotion, constructing safety through repetition and assuring chords.

As each loop breaks down, however, two things happen – the music forms an analogical relation to the Trade Center and the lives lost, and we are literally prevented from listening to it. The closer *Disintegration Loops* comes to closing the gap between representation and referent, the more impossible it is for us to hear it.

Less satisfactory examples reveal the power of Basinski's project. Compare this work to the equally repetitive video clips on network news at the time, or to the sensational sound collage that begins Michael Moore's *Fahrenheit 9/11*. In the former, repetition compulsively preserves the traumatic site of perceptual disjuncture; in the latter, an attempt at reconstructive representation invites us to imagine that day in vivid detail, yet without a space for mourning or reflection.

The Disintegration Loops preserve absence without fetishizing or colonizing it; they leave the gap of sense and consciousness intact, but facilitate mourning through separation of absence from loss. The people and places of the World Trade Center were lost, along with perhaps a particular identity for New York. We may feel that we lost other things –security, for example, or a continuous and rational sense of time, or a reliable sensorium in which perception results in comprehension – but these were never present to begin with. Critic David Keenan wrote in his review of the project for *The Wire*:

> *Its process of (de)composition mirrors one way people work through their memories of disaster. Basinski describes both processes as simply "letting go of the important sustains." But the music speaks for itself and in much more poignant terms than any act of 'auto-destructive' art for art's sake. Subjected to the uncontrollable chance factor of tape decay, The Disintegration Loops is sound as matter being seized by time, the remorseless logic of its destruction counterpointing the staggered decay of memory.* [15]

Among the most unsettling qualities of Basinski's project is that once each loop has died, we can push a button to replay the digital record, resurrecting the dead only to re-experience the process of passing. Though the tendencies toward unhelpful preservation of absence through repetition are there, this discontinuity also maintains distance between the representation and referent – the loops, in the end, were simply tape; the listener-subject imagines any other connection.

Design for a Phenomenology of Acknowledged Absence

Nancy and Peters only begin to demonstrate the destructive effects of expecting community or communion where there can be none; indeed some of the more traumatic events of the past century can be linked to just such utopias.

In the end, though, comparison of failed communication to trauma functions better at the level of structural and phenomenological experience than at the political or even moral levels. Particularly in the example of telecommunication, both trauma and communication involve a temporal or spatial break, in which present phenomena provide the only bridge to "the other side" as well as confirmation of the impossibility of closing the gap.

This paper's cited examples demonstrate ways in which this gap may be negotiated using built space or the technologies of recorded sound or image. We require bodily, sensory manifestations of felt absence, as a way of enacting the limits to communication, and of reminding ourselves about difference. We also need to be wary of the dangers of abstracting such absences, preserving them solely for the purposes of vicarious participation in the suffering of others, or of re-experiencing trauma as way of realizing autonomy.

Based on this brief survey of embodied memorial practices, I would venture the following guidelines for constructing more constructive and progressive telepresent experiences:

1. Create an experience that is bigger than the body's sensory capacities, but not so big as to be perceived as monumental or ineffable.
2. Work through synchronization, simultaneity or spatial illusion to facilitate perceived co-presence, but do not leave this illusion undisturbed.
3. Design for specific ruptures and breaks at the levels of form, content or context. Take care not to let these ruptures form the focus or end of the work.

Certainly these suggestions resemble familiar modernist approaches to media as simultaneously transparent and opaque, "hot" and "cool." Heeding LaCapra's warning, however, I discourage such reflexivity or remediation solely in the service of paradox. There are a myriad ways in which two persons might share a space, a time, a perceptual set, without pretending to union, or retreating to isolation. For Jean Luc Nancy's *Inoperative Community*, reflexivity constitutes acknowledgment of the Other, not the self.

We need interfaces and networks that facilitate just this sort of connection, and we need them to appear unexpectedly, not in the safe spaces of the gallery or festival. Others have examined how the human operator-experts of our networks once functioned in this way, as agents or mediums through which information flowed with varying degrees of ease and attention to the process. Even apart from the politics of placing persons in such a position, we are certainly beyond the technological need for such a labor-dependent network. Perhaps, however, as our artificial agents and operators grow smarter, we might train them to facilitate remote connection with more attention to the need for resistance, for reminders of the chasms that constitute community.

Appendix / Application

Unfortunately, examples of new media projects that demonstrate constructive acknowledgment of absence are hard to find. Since negative examples could serve an applied discourse as well, I will offer here a brief discussion of some better and worse attempts at telemediated "community domain." Any of these works would merit a longer examination – this effort is intended to briefly demonstrate application of this paper's premise.

PostSecret

http://postsecret.blogspot.com
Frank Warren
On this blog, Frank Warren posts, without comment, the handmade, mailed postcards of anonymous people who wish to share a "secret." Whether or not the project originated in a new media discourse, *PostSecret* applies a strategy that is quite common in explicitly social applications of digital media. As in any number of projects, viewers are invited to contribute to the perceived shared space of a webpage; one at a time, strangers get a chance at the podium of a weekly blog post, where they share a secret no one else has heard. (These participants have certainly found an audience – as I write, the project in book form ranks at #75 on Amazon's popularity list.)

The problem with this strategy, as in many such works, lies in the identification and production of subjectivity with self-contained difference, through formal variation. Each postcard's distinguishing hand-made qualities metonymously represent the speaker, lend authenticity to the secret, and lend the project an appearance of inclusivity and diversity. A particular "community domain" is here comprised of an atomistic archive in which no individual stands in different relation to any other. Though Warren provides links to a suicide hotline, and even a testimonial as to how the page helps others "know that they are not alone in their secrets," I would argue that such projects ultimately fetishize solitude and compound the pain of isolation. The project facilitates no substantive interrelation between contributors, or between contributors and readers, despite the painful, polemical and politicized content of some of the secrets. In a departure from normative blog practice, not even comments are allowed.

PostSecret almost perfectly captures the non-participatory status of representative democracy in the United States, and the role of formalism or style as a substitute for subjectivity in capitalism. Like the worst attempts at memorializing public loss, Warren's domain ignores a gaping absence of discourse under the guise of facilitating a safe public space, and encourages vicarious participation in the pain of others. *PostSecret* relies on fear of communication between familiars as motivation for participation in a "community" of strangers that owe each other nothing, and yet appear to be part of something. Here one gets the appearance of filled absence, without surrendering the fetishized void.

IN Network

http://turbulence.org/Works/innetwork/
Michael Mandiberg and Julia Steinmetz
Commissioned by Turbulence.org, *IN Network* consisted of a month-long multimedia blog. For all of March 2005, the couple Michael Mandiberg and Julia Steinmetz posted every image, text message, or phone conversation shared between them. As they had been recently separated by Mandiberg's move to New York, this was no small amount of information; the pair pushed their service-provider's offer of free "in network" calls past the limit, including at least one night spent sleeping "together" over a live cellular connection.

The project presents a curious intersection of alienation and banality. Like most surveillance footage, there is almost nothing of interest here for the voyeur, and in fact the invitation into another couple's world is quite exclusionary. Seemingly no recognition of an outside audience takes place – we do not know what they are talking about half the time, and even the text messages are presented just as sent, in abbreviated and opaque IM-speak. Due to the original deployment of the project through podcasts and RSS feeds, reception after the fact takes some *Memento*-like reconstruction – the posts appear in reverse order for each day. The opacity and insularity of the project begs the question of why they made the exchange public at all.

IN Network is an elaborate fiction – by never alluding to the presumably watching public, but purposely pushing everything (except e-mails) out there for us to see, Steinmetz and Mandiberg construct an opaque (and fairly boring) narrative for us. What do they achieve for themselves and others? Admittedly, I have not listened to every sound file, but it troubles me that they never seem to explicitly address their relationship to each other or to us as determined and shaped by these chosen media. Beyond some cloying exchanges about "how many seconds" remain until they are re-united, we see no overt comparison of telemediated experience to shared physical experience, and so I assume they must be content with the product offered them by commerce. It is hard not to see the couple as blithe to the impact of absence on relationships.

The two might have better included the audience through a more structured performance, or a more overt and faulted exploration of their own limits. By refusing to do so, these artists demonstrate utopian faith in the power of networks to supply surrogate presence. The month's documentation becomes like one giant *Postsecret* card, dismissable as the sentiment of an isolated couple who believe themselves to be one despite the geographical gap between them. If their demographic did not represent a dominant power (young, white, cosmopolitan, and mobile), the project could be accused of exoticization through refusal to address the function of public display. Otherness is left totally unexamined, through their own lack of mutual exploration and their neglect of our role in the process.

This project could learn a thing or two from Coco Fusco and Guillermo Gomez-Pena's *Couple in the Cage*, or even Dan Graham's *Past Future / Split Attention*.

Mojave Phone Booth

http://www.deuceofclubs.com/moj/mojave.htm
(760) 733-9969
N35'17'07.3" W115'41'04.2"
The *Mojave Phone Booth* [Fig. 6] was an accidental telemediated experience, a highly unusual physical and virtual destination for a few years until the Park Service removed it. The remnant of a once-busy mining community, the functional phone booth appeared as a dream-like apparition of urban infrastructure in the middle of a remote desert landscape. Boosted by word-of-mouth and early Internet exposure, the phone became a busy hub of activity for callers and drivers from around the world. Through incoming calls from people who found the number online or in print, or through outgoing calls from tourists on the hunt for a legend, the desert payphone sometimes stayed busy around the clock. Visitors to the booth often camped out all night, taking shifts answering anonymous calls.

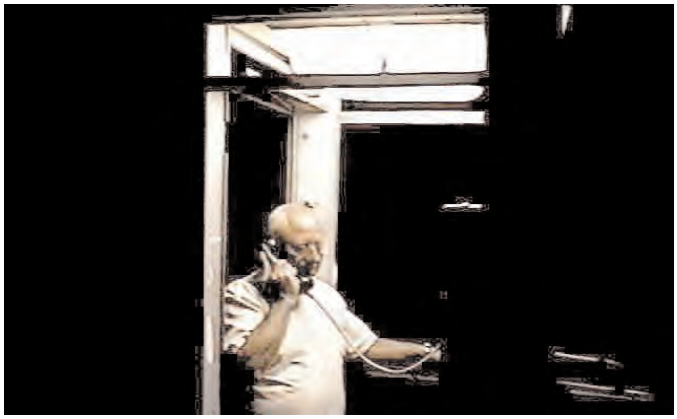


Figure 6. Charlie on the line at the *Mojave Phone Booth*. Image courtesy of Desert Tripper.

The site held a beautifully complex, yet finite nexus of communicative scenarios. Consider all of the possible callers:

- The person who calls from outside and has visited the booth
- The person who calls from outside and has never visited the booth
- The person who answers the phone on site
- The call out from the booth to friends or family who have never visited (or perhaps even heard of) the booth
- The call out from the booth to friends or family who have visited the booth
- The person who calls out from the booth to a stranger
- The call to the booth answered
- The call to the booth unanswered
- The call from the booth answered
- The call from the booth unanswered

Consider all the combinations therein, the ways in which each completed or incompleted call varies. Every case involves some combination of familiar and unfamiliar, known and unknown, for the caller and the receiver. As gathered from the documentary Mojave Mirage, a typical scenario might go like this:

> [phone rings, someone standing around the booth answers]
> Caller: "Am I really calling a phone booth in the middle of a desert?"
> Receiver: "Yes, believe me, I'm right here, it's crazy, you wouldn't believe it if you saw it – who is this, where are you calling from?"
> Caller: "Germany, in Berlin!"
> Receiver: "(laughs) No way! For real? I've never talked to anyone from Germany, what's it like?"

The project retains a perceptual rupture – neither caller can really imagine what the other is seeing, and perhaps even doubts the veracity of the claim. Telemediated conversations between strangers or familiars alternate between attention to the medium ("Can you believe this thing? It's surreal!") and attention to the other person or site through description or questions. Of course, as in any such opportunity for anonymous and distanced interaction with strangers, callers on either end explored and crossed lines of intimacy. Here, however, the recipient of an unwanted advance held the full and public power to respond through hanging up, cutting off the other from access to the experience, before sharing the experience with others. ("What did he say? .... Ewww, what a pig!")

Callers and visitors describe achieving a sense of *communitas*, of elated and temporary belonging. (One caller is quoted: "It helps make people, people again!") The *Mojave Phone Booth* fulfilled the desire for connection, for community, for communication, without pretending to remove the gaps and differences between persons. Each call brought home the contrast between two spaces and two people, but that disparity became a subject of wonderment that propelled conversations forward. Simultaneous and heterogeneous networks grew over at least two forms of telecommunication, intersecting with and embedded in the physical world. These networks were temporary and ephemeral but not dystopian, contingent, and even vulnerable without aestheticizing the void.

Transitions

http://www.fusedspace.org/show_contribution.php?id=96
Ulrika Wachtmeister
This project exists only as a proposal, but still serves as a useful example. The winning entry from 2004's Fusedspace competition, *Transitions* asks us to imagine a particular epistemological, social, spatial scenario, one that richly engages absence between strangers as a site for contemplating loss.

Wachtmeister's project identifies an important need in the process of separating absence from loss after the death of a loved one. Those who grieve without a specific and finite space for social, public remembrance risk forgetting historical loss, leaving only the absence of a companion or family member. For those who choose secular means of burial, in particular through the dispersion of cremains to the wind, earth, or sea, no such space exists.

Transitions imagines a new company that meets this need in two parts: one physical / geographical, the other virtual. Through provision of online memorials via websites, Pepparholm Ltd. invites survivors to engage in "personal memorial pages, condolences, correspondence, [and] support-groups." Where this virtual space serves as a finite destination for intentional visitors, the coterminous physical site consists solely of transitory anonymous encounters. There, Wachtmeister proposes a field of solar-powered lamps that light up on occasion of a visit to one of the virtual memorials. She locates this field on the artificial island of Pepparholm, which currently hosts only a transition from bridge to tunnel for commuters between Copenhagen and Malmo; no one may stop on Pepparholm, they only pass through.

A passenger or driver passing through Pepparholm at night glimpses a lit lamp before vanishing into a tunnel. Assuming she is aware of the project, we can imagine her thoughts going to at least two absent persons – the grieved and the grieving. Both are strangers to her, but were familiar to each other. Both are absent from our commuter's perception; one by an immeasurable and unknowable distance of time and space, the other by an immeasurable physical distance but a finite temporal gap. She knows where and when in virtual space the grieving survivor is located; this knowledge is reciprocated through the survivor's awareness of a public manifestation on Pepparholm. The two share a moment, as well as a constructively asymmetrical experience of absence.

The commuter experiences death in this project only as an abstraction, but is aware that an unreachable specificity is painfully clear to another person. As if the names on Maya Lin's monument were visible only to the families of the lost, Transitions forgoes creation of unfounded empathy or connection with others in favor of mutual recognition of the distance caused by loss.

Spanning memorial and communicative practices, Transitions employs telemediation and multiple physical and virtual spaces to produce an assymetrical and temporary connection between strangers. Founded on loss, but refusing anyone a permanent stay, Wachtmeister's connection is another helpful example of founding community on the impossibility of communion.

Isophone

http://web.media.mit.edu/~stefan/hc/projects/isophone/
Human Connectedness Group, MIT Media Lab Europe
James Auger, Jimmy Loizeau, Stefan Agamanolis
Isophone originated within a research group of the now defunct European branch of the MIT Media Lab. The mission and projects of this group, now a static archive, bear deep examination in light of this paper's premise. Much of the work represents a likely application of "acknowledged absence" to telemediated experiences, and finds continued resonance in other research efforts. Examination and historicization of the lab's rhetoric and products would assuredly help hone an applied phenomenology of absence; ultimately, however, many of the projects fall prey to utopian and individualist ideals.

LaCapra offers a sobering warning against misplaced desire in the form of limitless pursuit of "an infinite series of displacements in quest of a surrogate for what has presumably been lost." Such pursuit inevitably takes the form of melancholy:

When absence, approximated to loss, becomes the object of mourning, the mourning may (perhaps must) become impossible and turn continually back into endless melancholy. The approximation or even conflation of absence and loss induces a melancholic or impossibly mournful response to the closure of metaphysics, a generalized "hauntology," and even a dubious assimilation (or at least an insufficiently differentiated treatment) of other problems (notably a limit-event such as the Holocaust and its effects on victims) with respect to a metaphysical or meta-metaphysical frame of reference. [16]

This description uncannily captures the collected projects of the Human Connectedness group (and admittedly, of the more dangerous applications of this paper), particularly when examined in light of the group's location within a research-driven consumerist economy. Isophone is among the most captivating of their efforts, as well as the most sobering.

For this project, illustrated in a melancholic video, two individuals separated by great distance are united via a symmetrical telemediated experience. Each person (in this case, perhaps a woman and her ex-boyfriend) enters a swimming pool and dons a singular piece of headgear. The *Isophone* helmet wholly encloses the face and head, obscuring vision and supplying a live audio connection with the other communicant. Three attached buoys allow the user to hang from the helmet like a noose, an arrangement that looks surprisingly comfortable on video.

Here, sensory deprivation appears to create a common space, a perceptual bridge intended to parallel the telephonic link. Isophone's creators describe it as "a telephonic communication space of heightened purity and focus." On the video, the reunited couple catches up on where each of them lives, which friends they are in touch with. As in IN Network, we are invited (for the sake of documentation) to observe one couple's attempt at connection; also like that project, the effort appears to be a success ("We should try to do this more often," she concludes.)

It is an uncomfortable experience to watch for very different reasons. The camera is forced to choose between views of the head or views of the swimsuit-clad body beneath the surface, an uncanny and objectifying gesture that colors any understanding of the concept. We watch two mobile young white people willingly adopt stances of immobility as an attempt to bridge absence, in a weird inversion of contemporary torture techniques, in which prisoners are forced to stand immobile as a way of creating self-inflicted solitude.

Though *Isophone*'s relation to absence would likely vary depending on context of use, it depends on an unpromising sensory premise – that any input from the present world is merely a distraction to achieving union with another. More contingent, even agitational conditions might help prevent this couple from sinking into the melancholy of the video's accompanying electronica soundtrack. Sensory isolation sets *Isophone*'s users up for a fall, through an initial promise of common space that eventually slams them back into knowing nothing but what they hear, what they depend on from technology.

Kevin Hamilton
Assistant Professor, Painting and New Media
School of Art and Design
University of Illinois, Urbana-Champaign
408 East Peabody Drive
Champaign, IL 61820
217-390-4619
kham@thing.net
http://kevinhamilton.org

References:

[1] Dominick LaCapra, "Trauma, Absence, Loss," *Critical Inquiry 25* (1999), pp. 696-727.

[2] John Durham Peters, *Speaking into the Air, a History of the Idea of Communication* (University of Chicago Press: Chicago, IL, 1999), p. 30.

[3] Jean-Luc-Nancy, *The Inoperative Community* (University of Minnesota Press: Minneapolis, MN, 1991), p. 13.

[4] Ibid., p. 29.

[5] Jeffrey Sconce, *Haunted Media* (Duke Univer*sity Press: Durham, NC, 2000); Leigh Eric Schmidt, Hearing Things: Religion, Illusion and the American Enlightenment* (Harvard University Press: Cambridge, MA, 2000); Craig Baldwin, *Spectres of the Spectrum*, DVD (Other Cinema: San Francisco, CA, 2001); Avital Ronell, *The Telephone Book: Technology, Schizophrenia, Electric Speech* (University of Nebraska Press, Lincoln, NE, 1989).

[6] Leigh Eric Schmidt, *Hearing Things: Religion, Illusion and the American Enlightenment* (Harvard University Press: Cambridge, MA, 2000).

[7] Joe Milutis, *Ether: the Nothing that Connects Everything* (University of Minnesota Press: Minneapolis, MN, 2006).

[8] Dominick LaCapra, "Trauma, Absence, Loss," *Critical Inquiry 25* (1999), p. 698.

[9] Ibid., p. 699

[10] Doreen Massey, "A Global Sense of Place," in D. Massey (ed.), *Space, Place and Gender* (University of Minnesota Press: Minneapolis, MN, 1994).

[11] Andreas Huyssen, *Present Pasts: Urban Palimpsests and the Politics of Memory* (Stanford University Press: Stanford, CA, 2003), p. 69.

[12] Ulrich Baer, *Spectral Evidence: the Photography of Trauma* (The MIT Press: Cambridge, MA, 2002)

[13] Ibid., pp. 66-67.

[14] Ibid., p. 84.

[15] David Keenan, *review of The Distintegration Loops, The Wire* (August 2002).

[16] Dominick LaCapra, "Trauma, Absence, Loss," *Critical Inquiry 25* (1999), p. 708.

Indigenous Domain: Pilgrims, Permaculture and Perl

Joline Blais

There are two ways to conceive of the Commons. Either it functions within a larger regime of property and capital, or it functions as leverage against it. In Free Culture, Larry Lessig champions the Internet as an "innovation commons" where creative individuals can remix cultural artifacts to produce new knowledge, culture, and civil disobedience. This commons functions as a kind of anonymous resource in which individuals can freely take materials without permission, ethical responsibilities or social contract. No payment or gift is required, no relationship is established, and no genealogy is produced. While this commons creates a kind of "cultural reservation" that might protect artists from the rapacity of corporate greed – as Indian reservations were supposed to protect Native Americans from the rapacity of settlers – in the long run, like its colonial predecessor, it may end up as an exception that proves the rule of property. Since the Creative Commons licenses are meant to mesh with existing commercial and copyright regimes, they ultimately risk re-inscribing a colonial view of culture, one that offers no radical critique of the market and its effects on human culture and nature. These limitations are most apparent when intellectual property laws are imposed on cultural production outside the US, especially in the case of indigenous and peasant production. Unfortunately, as Christen claims, "The rhetoric of freedom – free of restrictions – replays the structure of enclosure, open for some closed for others." [1] The variety of forms of authorship, collaboration, and resource sharing across cultures provides a formidable challenge for this culturally specific definition of creativity and value.

Despite the cultural limitations of the Creative Commons concept, the gesture of claiming this creative ground during a pernicious corporate resource grab has at least two beneficial effects: first, it alerts us to this newest round of enclosure by the forces of capital; and second, it provides a training ground for experimenting with alternate practices. It is unclear whether these two will be sufficient to propel this work beyond colonial regimes of property. For the forces of enclosure are neither new, nor are they contained. Both historically and globally, they siphon natural and human resources into the machine of capital that is so effective at producing wealth for the few and poverty for the masses of humanity.

Parallel movements in indigenous culture, permaculture, and digital culture claim a far more radical ground, and suggest an alternative to the intellectual property regime at the base of colonial cultures. And indeed recent research on the forgotten forest provisions of the Magna Carta suggests that the reclaiming of the commons may well require a reversal of the nearly thousand-year history of colonization. If the Forest Charter provisions could reverse 200 years of Norman appropriation of Anglo forests and return them to the commoners, then perhaps these movements can help their respective groups reclaim their own digital and physical commons, or at least the right to engage with cultural artifacts and natural resources in their own culturally specific ways.

The variety of forms of authorship, collaboration, and resource sharing across cultures provides a formidable challenge for this culturally specific definition of creativity and value.

Pumpkins

Pilgrims

The intertwining of these three cultural responses to the Intellectual Property regimes is complex, but we might begin tracing their development by telling a story about pumpkins. First is the Native American pumpkin, one of the first New World foods brought to Europe, and symbol of a supposed Thanksgiving harvest celebrated by Pilgrims and Native Americans. Behind the myth is a history of two related but disparate commons, both at risk in the narrative of progress unleashed in North America – the commons of the Native Americans who saved the Pilgrims by teaching them how to survive in the Northeast, and the dwindling commons in Britain whose defenders were rioting against the enclosures enacted by their own Puritan elite. One of the Native American commons was the free sharing of information about planting, navigation, fishing, medicine and local dangers that Tisquantum, a Patuxet Indian, taught the Pilgrims during his year living with them. This commons also included the land gift of Tisquantum's former Native village of Patuxet to the Pilgrims who renamed it Plymouth.

While this sharing of information and land ensured the Pilgrims' survival in the New World, it proved insufficient for a people who believed they had been sent to subdue the heathen and spread god's kingdom over the satanic savages in the wilderness. The natural and customary rules that would suggest a return of gifts or resources

from the Pilgrims to the Natives never occurred. By 1636, under pressure of an exploding settler population, the Pilgrims triggered King Phillip's war with the massacre of 600 Narragansett villagers, a war which was to be the bloodiest in New England history, a war that eroded the New World commons as effectively as Cromwell's purge of Levellers from the New Model Army eradicated the British commons. [2]

During the settler land-grab in the Americas, a similar land grab was occurring in England in the centuries old battle for the control of the forest commons, a right guaranteed by the Magna Carta. Resisters of enclosure, the Blacks and Levellers were described as "rough and savage in their Dispositions." In Peter Linebaugh's analysis of the links between race, slavery and the commons, he notes that these Commoners were considered to be a "sordid race" and "compared to the Indian, to the savage, to the buccaneer, and to the Arab." [3]

During the 17th and 18th century, both sets of commoners with a survival stake in the lands they shared would lose their ground. In both cases, lands were enclosed and privatized, and in the US, citizenship and thus freedom for the settlers would be tied to the ownership of this stolen land.

Permaculture

A reincarnation of the Thanksgiving pumpkin might be found in the permaculture pumpkin patch: a plant guild composed of corn, squashes or pumpkins, and beans. While Northeast Native Americans were early practitioners of sustainable forms of agriculture that included the Three Sisters plant guild, some settler cultures, eventually transformed by the lands they occupied, began to recognize the benefits of these practices. Drawing on both indigenous knowledge and long-term and close observation of nature, Australians Bill Mollison and David Holmgren devised intensive, but sustainable methods of agriculture, social organization, and self-government that became the permaculture movement. Based on systems thinking and on replicating patterns found in nature, permaculture stresses interdependent relationships, like those found among companion plants, plant guilds, plant communities, local ecosystems, ecotones and bioregions – moving from local to regional.

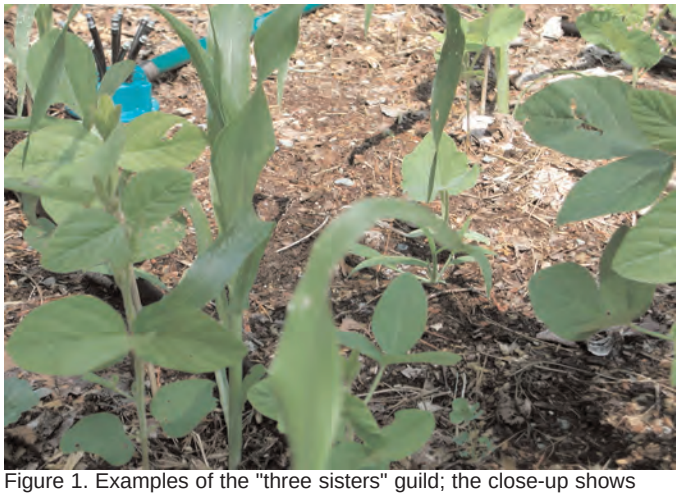


Figure 1. Examples of the "three sisters" guild; the close-up shows Hookers heirloom corn, Edamame butterbeans, and delicata squash-plants. Photos by the author.

In the Three Sisters guild.corn, squash (including pumpkins), and beans grow together in a synergistic and mutually beneficial system. [Fig. 1] The beans feed the corn with much needed nitrogen, the corn provides a structure for the beans to climb, and the squash with its lush, prickled foliage acts as a natural mulch and pest inhibitor, keeping insects, slugs, and raccoons from eating the ripened corn. Each member of the guild both gives and takes something from the community, and in the end the soil itself is nourished rather than depleted as it is in single-yield, industrial monoculture. Guilds, plant communities, food forests, herb spirals, water and energy catchment – most of the methods popularized in permaculture can be found in peasant and indigenous communities, which have forged complex relations to the ecosystems around them – relations that have ensured survival over ten of thousands of years. Placed beside the provisions of the forest charter, which provides for sustainable uses of the forest by local people – for herbage, pannage, eyries etc. – they look very familiar. [4]

Compare the integrated management of permaculture with article 12 of the forest charter of the Magna Carta: "Henceforth every freeman, in his wood or on his land that he has in the forest, may with impunity make a mill, fish-preserve, pond, marl-pit, ditch, or arable in cultivat-

ed land outside coverts, provided that no injury is thereby given to any neighbour." Two principles stand out here: 1) usage produces no injury, neither to the forest, nor to the neighbor – there is clearly a complex web of relations here that ties neighbors to forest resources; 2) usage is local, and its effects are related to a neighbor. [5] Under this provision there would be no drilling for oil in the Arctic National Wildlife Refuge, because the benefits go to non-local agents who have no care or relationship to the land, and furthermore the damage affects both natural and human neighbors. Thus the Forest Charter refers to customary usage – which predates nobility, legal system, and governments – customs which reflect both ethical and community concerns, though already diluted from the complex forms of interdependence found in the New World. Permaculture communities seek to rebuild these, or similar, sustainable customary practices in a modern context. They depend on local solutions rather than centralized, global bureaucracies – whether political or economic – for meeting human needs. And they may very well be the mammals that survive the dinosaurs of industry and capital.

Perl

The indigenous and permaculture communities have curious allies in the digital community. The digital "patch pumpkin," a token of trust and a method of self-government found in the digital commons of open source software, may be an emergent form of these evolutionarily learned human impulses. How does a "patch pumpkin" resemble its metaphoric siblings? Most notably, the patch pumpkin helps establish social, political, and economic protocols for collaborative work. Perl programmers do this by passing around the "patch pumpkin." Whoever has the pumpkin is in charge of managing the workflow. As the story goes, the name originated in the Perl community with Chip Salzenberg and co-worker David Cory. At one of David Cory's previous jobs, many systems relied on a tape drive for backup. "But instead of some high-tech exclusion software, they used a low-tech method to prevent multiple simultaneous backups: a stuffed pumpkin. No one was allowed to make backups unless they had the 'backup pumpkin.'" [6] During one Perl work session Chip asked, "Who has the patch pumpkin?" And, as "patching" is the term used for controlling workflow in Perl – i.e. making a patch, testing a patch, incorporating a patch; a patch being a module of code – the name stuck.

What is worth noting about this patch pumpkin is that it is a low-tech solution for developing trust among a group of programmers, that it initially depended on face-to-face meetings and physical distribution of a stuffed pumpkin to establish a trust metric, and that responsibility passed around the group, ensuring a kind of working democracy. All of this was operating in a gift economy in which programmers contributed to and benefited from a common project, from which they developed a sense of both community and identity. This emerging digital commons builds meaningful relationships around non-coercive work in a context of self-government, all conspicuously absent from the nature of paid work in our culture. Against this model, paid work begins to look like the wage-slavery described by the YES MEN in their anti-globalization campaigns, a slavery that became necessary during the enclosure of the commons in Europe and North America, an enclosure that continues to be forced on indigenous and peasant people around the world in the name of progress and free trade. [7]

So we have three kinds of pumpkins, each suggesting to us movements towards reclaiming the commons, not as an endangered preserve in a regime of property, but as complex economic, social, and political alternatives to that regime. These complex networks of relationships, resources, and practices are designed to perpetuate fertility and abundance in the communities that form them. The Eden that Europeans described when they reached North America was not a wilderness, but a well-managed resource, a complex combination of nature and culture, ecology and economy, a system so subtle and effective that it eluded the settlers who saw only natural wealth free for the taking. The result of this land grab in North America is that only 2% of the land is now wild, its major rivers are polluted, its lakes have caught fire, and its forests are dying from the top down. The tragedy of this commons was that it never really was a commons after colonization, but was surrendered to plunder, privatization, and exploitation in the name of Manifest Destiny and progress. [8]

To return to a tribal commons, both for contemporary land management and its digital counterpart will demand reevaluating some of the so-called freedoms of the colonial commons. Consumerism has taught us that free culture is detachable: I can download, consume, and remix a Creative Commons-licensed MP3 without ever contacting its author. Free culture is also presumed to be disposable: I can drag that MP3 to the trash when I'm done with it – and do the same with my laptop once I upgrade to a better one. Detachment and disposability depend on disinterest: in place of entertainment monopolies like Sony and Time Warner, free culture proposes a "free market of ideas" where a democratic process selects which cultural artifacts gain support and endure – with the side effect, of course, that all artifacts that don't garner acclaim pass into oblivion.

But free culture's tropes of detachment, disposability, and disinterest are not the only possible foundation for an alternative to monopolistic cultural production. Indigenous culture, permaculture, and digital culture offer three different and powerful dynamics: catchment, circles, and care.

Indigenous Culture

The following examples from Native practices can help

us move beyond the commons as a free resource pool to a social practice in which creativity and kinship are intertwined.

Catchment in Papua New Guinea

The term catchment derives from permaculture, where we will see it has a specific meaning. In an indigenous context, however, catchment is a useful antithesis for the economic detachment required for a globalized market. The production of Malanggan cloth in Papua New Guinea follows a logic of ownership that entangles rather than detaching its object from the context of its making. To produce a new design, an artist must "purchase" an already existing design, by viewing this design in a public showing. After this brief showing, the artist must hold the design element in memory until a compelling experience triggers a significant revision of the original. But in order to realize the new vision the "owner" of the element must find a carver or weaver to realize it, since people do not "materialize their own images." [9] The new image (both original and derivative at the same time) emerges as a collaboration among a number of sources – the original owner, the new owner, the fabricator, and ultimately the owner in the next generation who will similarly modify it.

This kind of multiple ownership creates a legal nightmare for IP law. But among the craftspeople of Papua New Guinea, it produces a dense network of relationships, as well as serving as a metaphor for cultural preservation and loss at each generation. The Malanggan, a distributed object, produces identities dispersed across time and space. This means that the creativity lies not in the object, but in the technologies of distribution, which create genealogies similar to those produced in *The Pool*, an online environment which fosters artistic collaboration by encouraging and tracing trajectories of creation. [10] Malanggan unites the synchronous collaboration of image holder and maker, as well as the asynchronous collaboration of past, present and future images. As Leach observes, ownership in these conditions connects people rather than separating them as it does in the West. And these connections are critical to the "preservation of the social conditions of creativity itself." [11]

Circles in the Plains

In *I Become Part of It*, Joseph Epes Brown, an anthropologist who lived and worked with Lakota Medicine Man, Black Elk, describes the practices that characterize tribal life in many parts of North America, practices that help us understand the confusion between Tisquantum's generosity and the Pilgrims' rapacity in the face of common resources. [12] In tribal life, art is not separated from craft, but permeates all of life. The value of art, then, cannot precipitate into an art object that can be sold or placed in a museum, but rather its value lies in the entire activity of production and distribution. The aid and land given to the Pilgrims was a way to build alliances and share knowledge, not an exchange of commodities. Similarly, to make a basket, a Native woman gathering grasses prays and makes offerings for the resources she takes; when she moistens the grass with her lips, she also "gives her life breath" [13], and these sacred dimensions create relationships linking her to the place and time of gathering, the grasses, and the person to whom she will give the basket. The making of the basket establishes kinship bonds that weave the natural and cultural world together. In these examples, nature is not a resource to be exploited for creative or commercial uses, but a set of material relationships that sustains sacred and material life.

Brown points to the Lakota tipi as a microcosm of the world, for example, with the fire in the center representing Wakan Tanka, the Great Mysterious. Hanging in a museum, without the central fire drawing the gaze of the children while the elders tell stories, the tipi becomes an inert object. [14] Similarly, in "It's Where You Put Your Eyes," Sam Gill talks about the power of masks coming from the inside view, the view the wearer has when he dons the mask and sees the faces of those who behold it. [15] He quotes the Navajo Emory Sekaquaptewa performing as a kachina: "the use of the mask in the kachina ceremony has more than just an aesthetic purpose […] when he [the performer] dons the mask he loses his identity and actually becomes what he is representing…the audience becomes his personal self. He tries to express to himself his own conceptions about the spiritual ideals that he sees in the kachina." [16] And in doing so he does not represent the spiritual world, but rather he becomes the spirit he is seeking. [17] Thus, once a mask is placed in a museum, so viewers can appreciate its "aesthetic" qualities, it has lost its real cultural power.[18] The "executable power" of this art requires participation and interaction, just as digital forms do. [19]

What is interesting to note is that while Native conceptions of the sacred embrace all of Creation, the articulation of spiritual life is very specific and local, based closely on the particularities of the seasons, the flora and fauna, and the geography of their homelands. So the power of cultural practices is contextual and local, rather than universal. Not being universal, they are hard to commodify and dispose of in a system of abstract and equal exchange value.

Leach describes an interesting example of these local practices in his discussion of the "purchase" of the tunes, words, and carvings of a Tambaran spirit in Papua New Guinea: "One aspect of Tambaran is a male musical cult with secret ritual paraphernalia. The tunes and designs […] have a named owner. Yet this ownership does not give the right of disposal. They are not 'property,' yet they are transacted." [20] In Papua New Guinea, the transaction of a Tambaran spirit requires elaborate rituals, including contact between the "purchasers" and ten of the Tambaran owners, and offerings of a pig, cooked and distributed by the sellers in a public

recognition of the transfer of the spirit.

Payment, however, does not give the new owners complete rights to do anything they want, as is the case with purchase of goods or lands in much of the developed world. Once purchased, the new "owners" must maintain respect and honor for the spirit, including following elaborate rules for its development within the new context and ensuring its propagation to future generations. [21] Furthermore, what differentiates this "purchase" from a commodity purchase is that there is no object to own. Rather what has been purchased is a particular kind of relationship with specific spirits, that is, the right to practice a kind of sacred ritual that recognizes prior relations between that spirit and a particular community. This is very different from disposability.

The notion that creation entails responsibility, that creators may not be entirely free to "dispose" of their inventions however they like – is anathema to our society's rabid obsession with turning every conceivable scientific discovery into a cash cow. The right to turn culture into cash derives from John Locke's view that cultural value accrues to natural resources when they are manipulated by the labor of the maker. The artist's labor becomes the mark of authorship and guarantor of ownership. In this view, Nature in itself has no value until it is used, developed, commodified, or put through the mill of human labor and industrialization. Its value, then, becomes an abstract sale value – how much profit it can bring the maker. In a "free market" where natural resources are free for the taking or available to the highest bidder, clean water, clean air, forests, beaches, wetlands, and arctic refuges exist outside a cultural or even natural network of relationships, can be modified or manipulated at the owner's discretion, because in themselves, they add nothing to the GNP. In such an economy, Nature is merely a resource, and has no inherent economic value. Following New Zealand MP Marilyn Waring's analysis of free market economics, the destruction accompanying the Exxon Valdez oil spill is terrific for GNP, so is prostitution of ten-year old girls in Thailand; whereas the Arctic National Wildlife refuge is worth nothing until compromised in the process of oil extraction [22], and the pristine Passamaquoddy bay in Northern Maine is worth more to the local community if its natural resources are compromised for the processing of Liquefied Natural Gas. [23]

By contrast to the disposability inherent in capital accounting methods, Brown claims that reciprocity "permeates so many aspects of North American cultures." [24] He defines reciprocity as a "process wherein if you receive or take away you must always give back." This view conceives of time and life as permeated by circles, of processes that repeat and return. "Everything comes back upon itself." Providing inspiration for the permaculturists that would follow, Native people were close observers of nature, which is where they perceived these living cycles, "the birds build their nests in circular form, foxes have their dens in circles, the wind in its greatest power moves in a circle." [25]

Compare this to the linear view of history that places "Man" at the center, and views the changes attendant upon expanding colonization and globalization as "progress." In the developed world, despite Ptolemy's confirmation that the world is a sphere, and Galileo's proofs that the earth revolves around the sun, economists still boldly claim that *The World is Flat* [26], and that the universe revolves around humans, who are the pinnacle of a linear evolution. Without these ideological supports, the notion of property would collapse, and the appropriation of Native culture and natural resources that drive globalization would lose their main ideological foundations. Without these foundations, the destruction of nature, and the enslavement and exploitation of human beings would appear as the abomination that it is in Native eyes. And when the machine of globalization is prevented from consuming what is left of the natural and cultural resources of the world, then the unsustainable systems that this intensive feeding supports will collapse under their own weight, and new more equitable and sustainable systems will replace them – a view that resonates in Native Culture, Permaculture, and Digital Culture. [27]

Care among the Pintupi

In Papua New Guinea, as in many tribal societies, cultural production – what some descriptions of open source refer to as "gift-giving" – is "an action performed within the context of reciprocity and expectations of return – status, rights, or more gifts." [28] It is not altruism – which is motivated at some level by ego – that produces these complex structures, but rather a kind of enlightened self-interest, one that recognizes the self as part of many, larger networks upon which the self depends for its livelihood. The similarities between collaborative production in tribal societies and in the digital economy are not trivial. Though the former measures its age in millennia and the latter in decades, "both are based on the self-interested participation of individuals and communities linked by a complex web of rights and obligations." [29] In both, cultural production can be viewed as the formation of kinship patterns (with people, natural world, land, resources, fellow programmers) that are economically viable. What their example suggests is that if you have the right kind of kinship-family, community, and land – you do not need a job. In fact, if you extend these kinship structures far enough, as Native Americans did, and as McLuhan predicted would happen with electronic media, you no longer need the nation. [30]

IP regimes have notoriously failed indigenous peoples trying to preserve and practice their cultural life in the context of colonization and globalization. [31] Partly this is because these regimes offer only simple alternatives of closed proprietary models, or open libertarian models. [32] Neither addresses the nuances of indigenous cul-

tural production, where information does not necessarily want to be free, but where it may require care. Myers describes such a dynamic among the Australian Pintupi whose words for property, *walytja* and *yapunta*, describe types of relationship that resemble family ties more than commodity rights. [33] *Walytja* signifies relative, whereas *yapunta* signifies an orphan, one who is not cared for. Similarly, someone who 'steals' the cultural artifact of another kin group in Papua New Guinea is assumed to be signaling a desire to be included in the kinship group from which he is stealing, and thus through elaborate ritual is brought into the fold. [34] These examples suggest that cultural practice may depend not on ownership, authorship and its attendant rights, but on kinship, belonging, and the rituals of inclusion – all hallmarks of care.

Permaculture

The aim of permaculture is simple: create wealth without doing damage. [35] In order to accomplish this, permaculture envisions nature as a complex network in which humans collaborate with other life forms – much as plants in a guild cooperate – to produce harmonious and sustainable energy systems. The approach is glocal: emergent bottom-up local solutions produced through trial and observation and cognizant of larger, global forces, both natural and cultural. By stimulating interdependence locally, permaculture moves away from centralized models of production and consumption that require massive energy input, institutions and technology to manage. By reversing current centralizing and globalizing trends and practices, humans can halt the resource destruction that produces financial capital and move toward resource creation in the form of natural and human capital.

Catchment in the Sand

Catchment, nature's method of wealth accumulation and energy storage is permaculture's alternative to capital. Where capital is centralized accumulation that resists redistribution, catchment is a system for accumulating a critical mass of a needed resource, like water or soil minerals, in order to trigger self-organizing system, i.e. life forms, that then spread over the landscape. Some natural examples of catchment include the sun, plant carbohydrates, bodies of water, geothermal energy, and plate tectonics. [Fig. 2]

Figure 2. Three stages of catchment, as demonstrated by views of the Nahal Zin keyline in Israel's mountainous northern Negev Desert, which drains into the Dead Sea. Photos courtesy of Hydrology, University of Freiburg, Germany.

How does catchment work? Since the "driving force behind all natural systems" is energy [36], catchment focuses on ways to capture naturally occurring flows of energy in such a way as to maximize the yield over time and space. As we know, entropy is the natural tendency to disorder, but it is balance by an opposing tendency toward self-organization – or what we call life. This kind of self-organization happens "whenever energy flows are sufficient to generate storages." [37] Even small storages of energy can trigger an explosion of life.

Like capital, catchment proceeds via an initial concentration of resources. How those two systems distribute resources in the long run, however, is very different. In capital, positions initially favored with power and wealth continue to aggrandize the latter through reinvestment of profit, and over time the rich only get richer relative to the poor. While capitalist's apologists claim that the elevation of the rich eventually raises the standard of living for all, history demonstrates that the gap between rich and poor only steepens with time.

If the metaphor of capitalism is building a pyramid on the desert, the metaphor of catchment is growing a forest from the desert. In his film *Planting in Drylands* [38], Bill Mollison shows a small rolling device that forms tiny divots over the desert floor. These small depressions in an otherwise flat surface collect dew and stray seed, so that over a surprisingly short amount of time, small sprouts shoot up, which in turn are able to collect more dew and hold more water in the soil. Under the right conditions, this positive feedback loop can actually turn a desert path to a living one with minimal human intervention – not even the need to sow seeds. Whether the result is a grassland or forest, the terrain moves from a handful of green spots to a terrain so evenly covered with life that it is no longer possible to find the spots where the wealth was initially concentrated. Nature is the original Leveller. In contrast, capital's initial concentrations of "green" are conspicuous – just look for the mansions and sports cars that herald a tycoon at the top of his pyramid.

Unlike capital, whose increase is measured only in financial terms, catchment wealth is measured in terms of real wealth. It replaces short-term, centralized profit, with "long-term asset building for the benefit of future generations." [39] The real wealth assets here refer to soil fertility, seed saving, reforestation, keyline water harvesting, and carbon, water and nutrient storage in the landscape. Natural capital like water, living soil, trees, and seed help insure low-energy sustainability because they are 1) self-maintaining; 2) have low depreciation rate; 3) are easily tapped with simple technology; and 4) resist monopolization, theft and violence. So in addition to long-term real wealth accumulation, catchment also produces long-term security, first by eliminating the need for energy-based resource wars like the current Iraq war, and second, by building local stores of wealth that are distributed across the landscape and locked in ecosystems and thus hard to steal without mobilization of armies against the local community – which unfortunately is the pattern of current enclosure in the developing world.

While catchment in nature and in permaculture has clear payoffs, there are more pressing reasons to adopt this technique in place of the dominant capital model of wealth creation. Under current free market economics, "we have been living by consuming global capital in a reckless manner that would send any business bankrupt." [40] The results are resource wars; destruction of independent, sustainable lifestyles and replacement with dependent pauperization; destruction of ecosystems worldwide; global warming; and collapsing political structures that erode the very freedoms upon which they are based.

Circles on the Farm

If the poetry of Native cultures lies in circles and cycles, the poetry of permaculture lies in feedback loops. In nature negative feedback mechanisms, like predators, natural disasters and parasites have the effect of keeping populations healthy and their numbers under control. They also discourage unsustainable behaviors. Positive feedback loops are the kind we saw in guilds and plant communities where synergies develop between species in particular microclimates. In a massively centralized economy, where basic needs are produced far from where they are consumed, it is very difficult for people to note the effects of the systems that sustain them. When a river is polluted, few people hold up their newspapers as the culprit, when ground waters are contaminated no one holds up the dinner plate laded with pesticide-produced produce. In the local ecosystems of permaculture, it is much easier to identify negative feedback and to make adjustments. When the family dog dies an early and unnatural death, the farmer may re-evaluate the heavy use of pesticides on his crops. Taking responsibility for the state of the world is, for permaculturists, the first step toward empowerment and change.

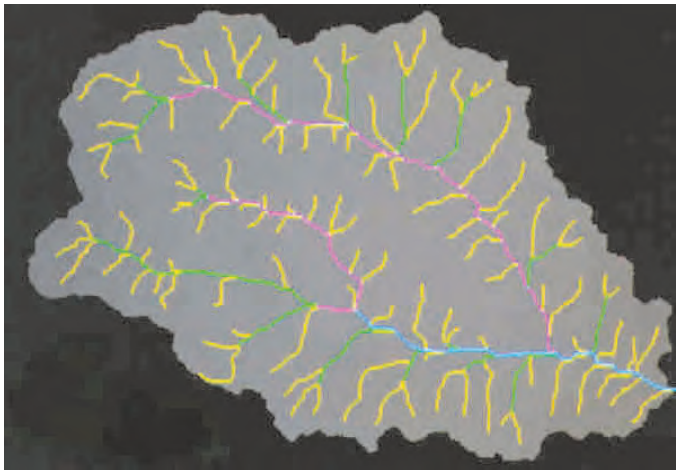
One of the ways of responding to feedback is to take personal responsibility for the choices we make that lead to effects we don't like in the world. There a number of ways permaculture encourages personal responsibility. Not only does exercising responsibility often replace despair with hope, it supports many permaculture values. Like a blocked Internet packet, Permaculture does not resist the source of blockage, but rather, routes around it. While the rest of the culture is busy working long hours to pay for consumer goods, permaculturists shorten their work hours and consume less. Because they organize as small groups and communities, they can respond to change much faster than large institutions, governments or markets; and so they are far more effective at initiating social change. "There is little point in spending your life trying to persuade other people that they are wrong. If there is a better way of doing things, and you know what it is, the do it. If it is really better […] other people will try it too." [41] This argument may sound like some of the utopian rhetoric of early adopters of the Internet and its virtual communities. However, unlike immigrants who abandoned "meatspace" for a better world in cyberspace, permaculturalists seek not to abandon this planet but to embrace it, not to hide from a society they cannot support but to model a more sustainable paradigm for it.

Care for the River

As David Holmgren, one of the founders explains, "It's the conversations you have with your neighbor over the garden fence which saves the world, and if you want to know what the news is, go outside and look." [42] In principle these sentiments sound very much like those of Free Software guru Richard Stallman, who claims "globalization is a very inefficient way of raising living standards of people overseas" and that a much better economic system would decentralize power and resources. [43] Holmgren situates this practice not in altruism but in clear-sighted common interest. And he

refers to the historical record to confirm that caring for the self required caring for land and natural resources. In his view, permaculture "asks you to see yourself as one with the universe, and to measure its wonder for your mutual benefit. You and the rest of creation have the same interest at heart – survival – so you should look after each other." This invitation to care for self, family, community and neighbors in the widest possible sense – as we see in Native culture – reinserts humans into the Web of Life.

Like nature, permaculture rarely centralizes wealth because of the amount of poverty created in its wake. In nature a river might meander back and forth across a



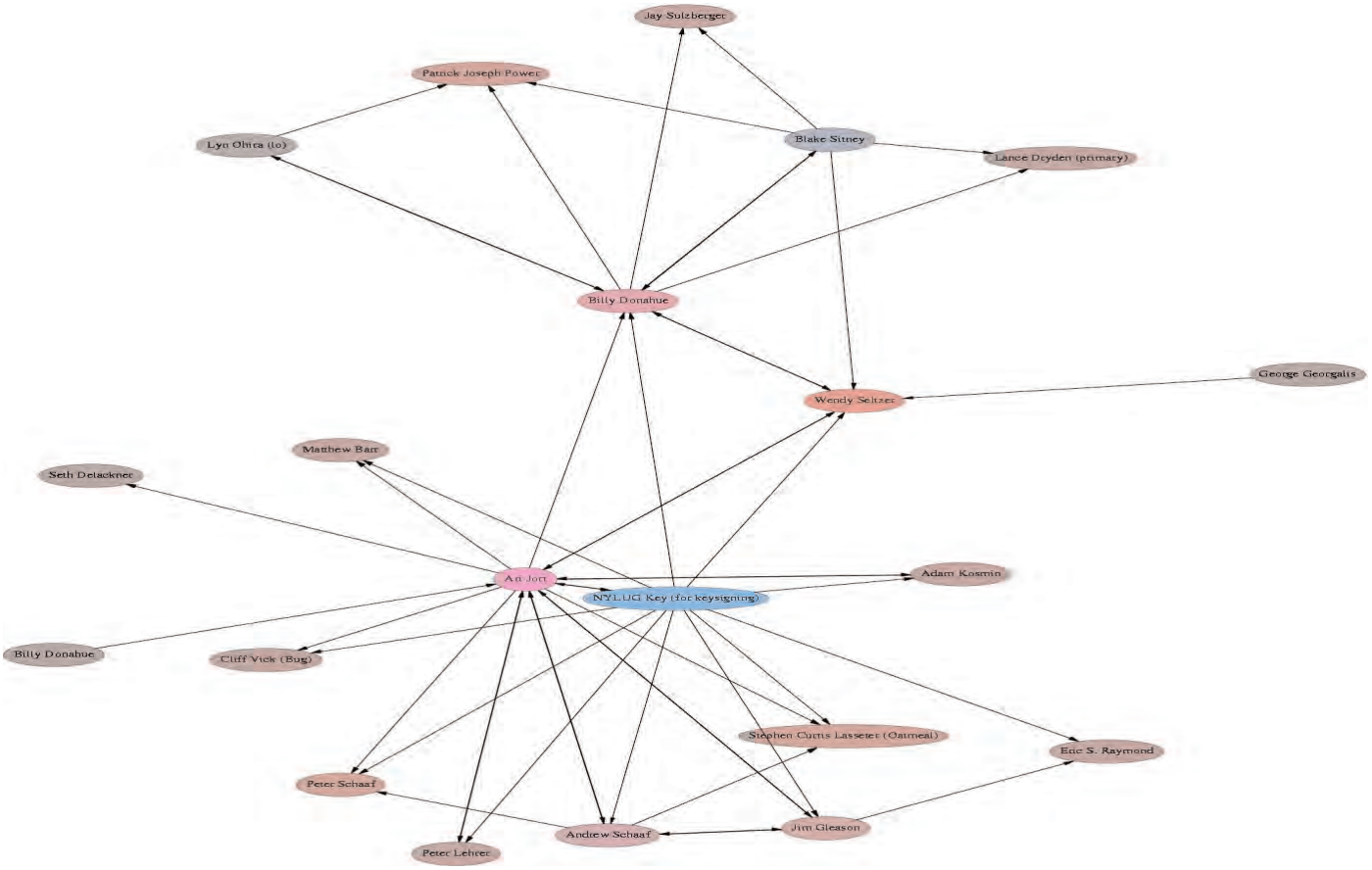


Figure 3. Top: A simulated catchment network generated by TOPAZ (Topographic Parameterization Software), produced cooperatively by the Agricultural Research Service, U.S. Department of Agriculture, USA; and the Department of Geography, University of Saskatchewan, Canada.
Bottom: The Web of Trust of the New York Linux Users Group, as diagrammed by the sig2dot Keyring Graph Generator. Image courtesy NY Linux Users Group.

landscape bringing water to huge tracts of forest or arable lands. Likewise, permaculture constructs small-scale swales and keyline irrigation, to control small amounts of water flow over larger areas, leaving just enough wealth in each area to trigger healthy plant growth, which in turn spills over to unirrigated areas. Such modest, gravity-fed irrigation system could be found in Ladakh, in the high Himalayas before the area was developed. In Ladakh, such catchment of water irrigated entire arid areas with limited mountain runoff, using elaborate sharing schemes across households to produce rich and abundant crops and clean drinking water. After development – fed by an ideology that trusts to a disinterested "invisible hand" instead of the common interest of local villagers – the water became polluted, and staple crops were imported once local agriculture and ways of life were displaced by wage labor and the media and material attractions of capital. [44]

Digital Culture

"Changes in the way we think, especially the emergence of design thinking, are more fundamental to the information economy than the hardware and software we use." [45] Although this is a permaculture principle, it

might apply to the free and open software movement and the development of online communities; these are practice grounds for the kind of community development that permaculture activists seek. If Internet spaces function like practice grounds, it is because these areas are not fully colonized economically, legally or politically, though the colonial paradigm still influences our limited understanding of the digital commons. [46] For permaculture, the landscape is the textbook [47]; so to with digital culture though the landscape is virtual and made up of networks of human communication. What can this textbook teach us about human community, about ways to manage resources that move beyond the private / public dichotomy and into complex emergent social patterns that are sustainable?

Many critics of closed, hierarchic institutions have recently turned toward the open software movement for an alternative model. While these critics applaud the sharing and openness of these seemingly global communities of software developers, they rarely look beyond the virtual veneer to analyze the specific mechanisms behind their success. Coders of open software are often more tribal than global. [48] The "free culture" model notwithstanding, a coder cannot simply refactor a module of the GNU/Linux kernel without the permission of other trusted developers. While open software communities do not resort to the command-and-control hierarchies of corporate and military structures, they do exercise a form of management, but one with surprising resonances to the forms of entanglement found in indigenous and permaculture communities.

Catchment in Webs of Trust

Local trust (or lack thereof) is easy to establish when members share an ecosystem or physical community. But how do you build a community in a virtual space where members have no prior relationship? Furthermore, how do you communicate with co-workers or family and friends in a way that is secure from sniffing software like FBI's Carnivore?

While Certification Authorities like Verisign have emerged as third-party guarantors of net identity, many open software programmers prefer to roll their own identity via public key encryption, which can operate via peer-to-peer networks rather than a centralized structure. PGP ("Pretty Good Privacy") is one of the most popular systems for verifying network identity among groups of people who will be working together. PGP verification begins with face-to-face contact at key signing parties [49], gatherings of people who verify each other's identity by checking ID cards, faces, and anecdotal evidence ("This is my husband, Jim"). Once identities are confirmed face to face, users sign each other's public keys, effectively hinging one developer's credibility on that of another developer – more catchment than detachment. [Fig. 3]

As if to echo Holmgren's belittlement of hardware and software, computers are forbidden at such meetings because they could compromise security. [50] If people used a computer to sign keys at the party, it would be hard to tell if the machine was compromised, or set up to capture the PGP information, or even infect it with a virus. It's interesting that key signers seem more concerned about exchanging computer viruses than biological ones, despite all the hand shaking and card swapping; for this "virtual community," physical intimacy is not a liability but a sign of their interdependence and a prerequisite of the mutual trust they need to do their work. When key signers stand in a line to receive each other's identity written on a piece of paper, it is a ritualistic echo of the Powhiri ceremony by which the Maori greet newcomers, standing opposite each other in a line and touching foreheads so as to receive each other's breath in the hongi greeting.

Circles of Credibility

The more signings a public key gets – the more attached it becomes to other public keys – the more trusted it becomes. When the party is over, when identity is confirmed, people sign each other's public keys, thereby increasing their credibility. When an encrypted email message arrives in an email box – signed by one very credible public key, or three fairly trusted public keys – then the receiver can be almost certainly the message was sent by the person who claims to have sent it. The receiver can then use her private key to decrypt the message. Ironically this makes digital signatures more trustworthy than paper ones, which are easily forged. Paper signatures on treaties are useful for colonial powers, because they seem to command trust, but in the end, as repeated Native American experience confirms, these paper signatures are not worth the paper they were written on, certainly nowhere near the power face-to-face trust originally had in Native communities.

The best way to develop and expand webs of trust for secure communication over the Internet is to hold as many key-signing parties as possible. Frequent meetings ensure that the web of trust is "deep and tightly interlinked," thus making it harder to crack. PGP protects the parties involved in a communication as well as ensuring the integrity of the software produced. Though used extensively by open software developers to check out software modules and/or sign off on approved modules, PGP guarantees can also safeguard the passing of any kind of information among users in a web of trust. The more people use encryption, the less information can be sniffed by government or corporate software, and the more thoughtful they become about the kind of information they casually distribute via any technology. [51] Practicing PGP is a constant reminder that "not all information wants to be free."

Care for Kin and Beyond

Beyond creating security, PGP parties also generate

real local political communities since they involve face-to-face meetings by people who often share political and ethical concerns including civil liberties, the future of cryptography, and Internet regulation – all attempts to prevent the enclosure of emerging digital commons. In the digital as well as real worlds these are basic freedoms that generate passionate support. Furthermore, holding PGP parties allows a local area to configure its servers and technology to run PGP, making it available for others to use. Building this infrastructure across the Internet through local webs of trust creates a communication system that looks less like a global net and more like strongly linked local nodes with ties to other local nodes. This is not a global village, but a tribal web.

This new kind of kinship may seem abstract to those who haven't been to a key signing, but its emergence is easy to see in diagrams of webs of trust. Applications such as Sig2dot.pl, a PGP key ring graph generator, can produce a graph of all of the signature relationships in a GPG/PGP key ring, including the network developed at PGP party. "Graphing the web of trust in your local area as you build it can help motivate people to participate as well as giving everyone a clear sense of what's being accomplished as things progress." [52] The correlation of visual diagrams with the establishment of kinship patterns sounds remarkably like the protocols in Papua New Guinea for Malanggan. The idea that creativity and cultural production depend on and are correlated with the social safety net of kinship groups is a digital recuperation of an indigenous wisdom about social wealth. While peer-to-peer culture is relatively new by comparison to indigenous cultures, these "natives of cyberspace" [53] may be able to re-imagine a lost common heritage more readily than those of us still burdened by the tropes of print and visual culture.

In fact, geeks – for all their obsession with protocol, syntax and patches – can demonstrate a sophisticated grasp of current political dangers and issues when they care about them. Because our culture is increasingly mediated through lines of code, programmers are in a privileged position to watch the effects of such mediation on the consuming public – so we can hope that as their awareness grows, programmers will expand their concerns beyond bugs in the latest Debian distribution to include broader issues like child prostitution or deforestation.

Curiously, a humorous allusion to a political mission surfaces in the middle of "Notes on handling the Perl Patch Pumpkin," which explains protocol for contributing a patch to a development team. Near the end of this online document is a section called "How to Save the World." While the instructions are prosaic – "You should definitely announce your patch on the perl5-porters list," "You should make it quite clear that a subversion is not a production release" [54] – the humorous linking of participation of the production of a shared resource with the saving of the world is far from naïve. In fact it is a wake-up call from the cultural propaganda that proclaims that, in Stallman's words, "sharing with your neighbor is the moral equivalent of attacking a ship." [55] Of course if we recall that many pirate ships were precisely dispossessed people such as peasants and African slaves taking back a commons that had been "criminalized" [56], then piracy itself appears as a commoner's logical response to enclosure of land and body. [57]

Sovereignty

While it may not be surprising that programmers are concerned with the securing of "individual liberties" that once motivated piracy, it is interesting to see key signing parties dwell on a discussion of "sovereignty," [58] an issue that grounds Native political struggles. Used by Native Americans, sovereignty signifies their right to enter into treaties with other nations, and to be recognized and respected with full rights accruing to nations. The US government takes pains to associate national security and cryptography, regulating the latter's export. But neither Native tribes nor key signers are ultimately interested in national sovereignty so much as individual and tribal sovereignty. [59] This concern is echoed in David Berry's summary of "Libre" culture – a sort of Creative Commons with an ethical slant: "Political struggle will no doubt be oriented towards the nation state […] but it cannot remain there alone […] Creativity is at once too small and too large. Political action and the struggle for true democracy will have to be aimed simultaneously at local and global levels." [60]

Berry goes on to propose a "treaty obligation" to prevent "the commodification of human DNA and life itself. Or a UN protectorate to defend the sanctity of ideas and concepts. We might picture something akin to Bruno Latour's 'Parliament of Things,' a space where not just the human is represented, but all of life has a defender, all of life has a voice." Of course, this kind of community voice – one that speaks for all living things – already exists among indigenous peoples. When the UN established the Geneva Convention on human rights after World War II, the Six Nations and the Lakota suggested they were leaving something out:

> *There is a hue and cry for human rights – human rights, they said, for all people. And the indigenous people said: What are the rights of the natural world? Where is the seat for the buffalo or the eagle? Who is representing them here in this forum? Who is speaking for the waters of the earth? Who is speaking for the trees and the forests?* [61]

The parallels in understanding between the Libre Society and Native culture, the acknowledgement of a Web of Life to which we all belong, points to an economic and political practice that moves beyond the limited freedoms established by the commons, either traditional or digital. While we may yearn for a long-lost com-

mons where humans were landkeepers, where they cared for all living things, what we need now must move beyond the logic of common/enclosed, of free/private. For in today's context, any commons is only respite from a larger cultural model of property, theft, enclosure, and loss of political liberty for all humans and exploitation of all life. To move beyond human rights toward the rights of all living things, what Leach calls "common rights" [62], we need the commons to become the rule of human culture rather than the exception. That human beings in Native culture, Permaculture and digital culture are trying to protect and reclaim some common ground, some space for remembering and reinventing sustainable cultures, is a message of hope in otherwise dismal times.

References:

[1] K. Christen, "Gone Digital: Aboriginal Remix and the Cultural Commons," *International Journal of Cultural Property 12* (2005), pp. 315-345.

[2] Levellers, whose power base was in the New Model Army, upheld common rights, until their leaders were executed and their followers cashiered by the Grandees. "The Grandees were represented by Henry Ireton (son-in-law of Oliver Cromwell), Oliver Cromwell, and some others. Each party put forward a pamphlet to lay out their position. The Levellers' pamphlet, written by civilians, was entitled Agreement of the People. The Grandees' pamphlet, endorsed by the General Council of the Army, was written by Henry Ireton, and entitled The Heads of the Proposals. It put forward a constitutional manifesto which included the preservation of property rights and maintenance of the privileges of the gentry;" http://en.wikipedia.org/wiki/Levellers

[3] P. Linebaugh, "Charters of Liberty in Black Face and White face: Race, Slavery and the Commons," *Mute* (2005), http://www.metamute.org/en/node/5602, accessed May 18, 2006, p. 4.

[4] See Forest Charter at: http://www.constitution.org/sech/sech_045.htm

[5] Gentry and Clergy are prohibited in the forest charter, since they are not local, both because a number came from France with the Normans, and also because others did not live in close proximity of the forests. "17. Now these liberties with regard to the forest we have granted to all, saving to the archbishops, bishops, abbots, priors, earls, barons, knights, and other persons both ecclesiastical and lay, [also] to the Templars and the Hospitallers, the liberties and free customs in forests and outside them, in warrens and in other things, that they earlier had. Moreover, all these aforesaid liberties and customs, which we have granted to be observed, in so far as concerns us, toward our men, all persons of our kingdom, both clergy and laity, shall, in so far as concerns them, observe toward their men."

[6] http://www.perl.com/doc/manual/html/Porting/pumpkin.html

[7] Some theorists claim that the major conflict of our time is not between "democracy" and "terror," but between civilized cultures and indigenous cultures, the latter holding all the evolutionary knowledge needed to live sustainable in each of the areas they inhabit. See "Traditional Culture Strikes Back,"http://www.iht.com/articles/2005/07/20/news/edpfaff.php#

[8] The Dawes Act 1887, which turned communally held Native American land into private property, ostensibly to speed assimilation and help Natives become self-sufficient, had disastrous effects leading to massive loss of land and culture: "some sixty million acres (240,000 km) of treaty land (almost half) were opened to settlement by non-Indians. The Act had one of the most substantial impacts on Natives, most significantly affecting Native gender roles. This Act broke up the reservation lands into privately owned parcels of property [given to men]. In this way, the legislators hoped to complete the assimilation process by deteriorating the communal lifestyle of the Native societies and impose values of strengthening the nuclear family and values of economic dependency strictly within this small household. Legislators' opinions of communal living saw the extended family as "needy" since the Indigenous ideas of wealth contrasted and disagreed with Western ideas of wealth. Indigenous people valued generosity and received status by being generous. Western values form around individual wealth and surplus and status is gained from these same values. The kin-network, which was the base of economic and social reproduction in Indigenous societies, split and the reservation became a checkerboard pattern… The Act forced Native people onto small tracts of land distant from their kin relations. Traditionally, in most Indigenous societies, women were the agriculturists while the men were the hunters and warriors. The Allotment policy depleted the land base, ending hunting as a means of subsistence. According to Victorian ideals, the men were forced into the fields to take on the woman's role and the women were domesticated. This Act imposed a patrilineal nuclear household onto many traditional matrilineal Native societies. Native gender roles and relations quickly changed with this policy since communal living shaped the social order of Native communities. Women were no longer the caretakers of the land and they were no longer valued in the public political sphere." See: http://en.wikipedia.org/wiki/Dawes_Act and http://www.csusm.edu/nadp/a1887.htm. One might compare this modern enclosure with the enclosures in Europe in the previous centuries.

[9] M. Strathern, "Imagined Collectivities and Multiple Authorship" in R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005), p. 18.

[10] See: http://pool.newmedia.umaine.edu/

[11] J. Leach, "Modes of Creativity and the Register of Ownership" in R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005), p. 37.

[12] J.E. Brown, "Becoming Part of It" in D. M. Dooling, P. Jordan-Smith (eds.), *I Become Part of It: Sacred Dimensions in Native American Life* (Parabola: New York, 2002).

[13] Ibid., p. 15.

[14] Ibid., p. 20.

[15] S. Gill, "It's Where You Put Your Eyes" in D. M. Dooling, P. Jordan-Smith (eds.), *I Become Part of It: Sacred Dimensions in Native American Life* (Parabola: New York, 2002).

[16] Ibid., p. 83.

[17] Compare this to Leach's (2005) description of how creativity produces both children and spirits: "creativity, understood as the regeneration of people and places through the work of family groups…Children, like spirit designs, are generated in the specific productive partnerships of kin groups."

[18] Ibid., [15].

[19] See Blais & Ippolito, At *The Edge of Art*, for a description of executable art, art which has an effect in the material world: http://at-the-edge-of-art.com/

[20] Ibid. [11], p. 33.

[21] Ibid., [9], p. 20.

[22] M. Waring, *If Women Counted: A New Feminist Economics* (Harper Collins: New York, NY 1990).

[23] See http://www.savepassamaquoddybay.org/ and Ntulankeyutmonen Nkihtaqmikon (We take care of the homeland), http://penbay.org/sipayik/

[24] Ibid. [12], p. 12.

[25] Ibid., p. 12.

[26] T. L. Friedman, *The World is Flat*, (Farrar, Straus and Giroux: New York, NY, 2005)

[27] gkisedtanamoogk, "Miingignoti-Keteaoag: Decolonizing Justice and Sovereignty" (1997), http://www.geocities.com/CapitolHill/9118/gkis10.html. D. Holmgren, *Permaculture: Principles & Pathways Beyond Sustainability* (Holmgren Design Services: Hepburn, Australia, 2002).

Richard Stallman, "Copyright and Globalization in the Age of Computer Networks" in R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005).

[28] R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005), p. 7.

[29] Ibid., p. 7.

[30] See Stallman: "The centralization and economy of scale introduced by the printing press and similar technologies is going away." And McLuhan (1962): "What we have called 'nations' in recent centuries did not, and could not, precede the advent of Gutenberg technology anymore than they can survive the advent of electric circuitry with its power of totally involving all people in all other people."

[31] B. Boateng, “Square Pegs in Round Holes? Cultural Production, Intellectual Property Frameworks, and Discourses of Power,” in R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005), pp. 61-74; A. Seeger, “Who Got Left Out of the Property Grab Again: Oral Traditions, Indigenous Rights, and Valuable Old Knowledge,” in R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005), pp. 75-84; K. Warren, and J. Jackson, (Eds.) *Indigenous Movements, Self-Representation, and the State in Latin America.* (Univ. of Texas Press: Austin, TX 2002).

[32] GPL offers an interesting mix of these two, not entirely successful from an indigenous perspective, but certainly effective as anti-enclosure device. Discussion of the complex ways GPL thwarts colonial paradigms of property is beyond the scope of this paper.

[33] F. Myers, "Some Properties of Culture and Persons," in R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005), pp. 45-60.

[34] Ibid. [11], p. 34.

[35] G. Bell, *The Permaculture Way* (Chelsea Green: While River Junction, VT, 1992), p. 17.

[36] D. Holmgren, *Permaculture: Principles & Pathways Beyond Sustainability* (Holmgren Design Services: Hepburn, Australia, 2002), p. 27.

[37] Ibid., p. 15.

[38] More on Mollison's film at http://www.networkearth.org/perma/culture.html. Permaculture co-founder (with Mollison) David Holmgren's own rhetoric occasionally falls back on the

pyramid metaphor, but other discussions suggest he believes the strength of permaculture lies precisely in its potential for offering a non-hierarchic ontology.

[39] Ibid., p. 51.

[40] Ibid., p. 27.

[41] Ibid. [35], p. 212.

[42] Ibid. [36].

[43] Richard Stallman, "Copyright and Globalization in the Age of Computer Networks" in R. A. Ghosh (ed.), *CODE: Collaborative Ownership in the Digital Economy* (The MIT Press: Cambridge, MA, 2005), p. 331.

[44] H. Norberg-Hodge, *Ancient Futures: Learning from Ladakh* (Sierra Club Books: San Francisco, CA, 1992).

[45] Ibid. [36], p. 14.

[46] See Blais, "In the Presence of the Sacred: Indigenous Alternatives to Colonized Cyberspace," forthcoming in M. Stewart and P. Wilson (eds.), *Indigenous Media* (Duke University Press: Durham, NC 2006).

[47] Ibid. [36], p. 15.

[48] Margaretha Haughwout, "A Reflecting and/or Refracting Pool: When a Community Becomes Autonomous Online," *First Monday 11, no. 4* (April 2006), Retrieved April 27, 2006 from http://www.firstmonday.org/issues/issue11_4/haughwout/

[49] See: http://www.cryptnet.net/fdp/crypto/gpg-party.html

[50] Computers are a problem at PGP meetings because "binary replacement or system modifications are very easy ways to compromise PGP systems." See: http://www.cryptnet.net/fdp/crypto/gpg-party.html

[51] This is especially true when that information is a matter of life and death, as it was when Patrick Ball, open-source programmer-cum-human-rights activist, was gathering evidence for the war-crimes trial of ex-Yugoslavia's leader Slobodan Milosevic. His statistics proved that killings and refugee flows in Kosovo were independent of military activity by NATO or the Kosovo Liberation Army but tied directly to Serb attacks. While the information he needed might have been sent by email, there were obvious security risks for all involved. The evidence based on interviews, government records, and testimony by Albanian border guards was often provided by face-to-face-contact with people who passed on the information in the form of tapes, disks, or other media. This verification of information through human contact, whether crime data on a diskette or a patch pumpkin on a string, suggests that true security depends on human relationships, regardless of the sophistication of our military technology. It is not the database that saves lives, but the human network through which the data passes on its way to the database. Patrick Ball's "sneakernet" not only provided information under more secure conditions, but it also afforded the kind of face-to-face verification upon which PGP security is based.

[52] Advice from the GPG key signing party "How To" page at http://www.chaosreigns.com/code/sig2dot/

[53] J.P. Barlow, "Art after virtual reality," paper presented at a meeting at the Guggenheim Museum Soho, New York, October 27, 1993.

[54] http://www.perl.com/doc/manual/html/Porting/pumpkin.html#Help_Save_the_World

[55] Ibid. [43], p. 325.

[56] Waltham Black Act of 1722 effectively criminalized the commons.

[57] Ibid. [3]. Linebaugh claims that "the crisis of the commons began as a financial crisis which itself arose from slaving, and that piracy was "multiracial and it was against the slave trade […] Sixty of Blackbeard's crew of one hundred were black."

[58] "GPG keysigning Party HOW TO," http://www.cryptnet.net/fdp/crypto/gpg-party.html#ss1.4)

[59] "The idea of the nation in contemporary Latin America is based on the negation of indigenous cultures." [My translation from the Spanish] Rudolfo Stavenhagen in A. Ramos, "Cutting Through State and Class" in K. Warren and J. Jackson (eds.), *Indigenous Movements, Self-Representation, and the State in Latin America* (University of Texas Press: Austin, TX, 2002).

[60] D. Berry & G. Moss (2006), http://www.freesoftwaremagazine.com

[61] O. Lyons, "Our Mother Earth" in D. M. Dooling, P. Jordan-Smith (eds.), *I Become Part of It: Sacred Dimensions in Native American Life* (Parabola: New York, 2002), pp. 273-4.

[62] Ibid. [11].

Media References – Knowledge Networks in Experimental Arts

Mara Traumane

My ideas on the topic of media art and self-reference emerged from my research on strategies of analogue media art practices and their parallels with structures and approaches in today's new media art field. My research materials from Moscow, Russia, and Riga, Latvia, (early 1980s) included some examples of samizdat publications – texts and tape recordings. Among the works were a poetic absurdist novel [1] and a re-published documentation and discussion of collective performative actions. [2] Both editions were typed or recorded and transcribed in a collaborative effort by a group of people, manually copied, and distributed (or intended for distribution) as *samizdat*, hand to hand. I also discovered examples of collaborative creative practices of documentation and reflection on the margins of the Western art canon – *12 dialogues, 1962–1963* [3], featuring dialogues by Carl Andre and Hollis Frampton dedicated to their own fellow artists' practice, and *Filmmakers* by Takahiko Iimura (1966 / 69), which portrays the experimental filmmakers scene in the U.S. I think that some features of these collaborative creative experiments are similar to characteristics of new media and indie publishing and can also be traced in the growing participatory culture and collaborative writing practice emerging in wikis and blogs. In the following, I will try to sketch out some of these parallels, although I have not yet arrived at a comprehensive, elaborate summary of them. The topic raised several questions about the self-definition of experimental arts practices; the references that provide historical and contemporary context for these initiatives; their methods of discussion and documentation, and the role of media in this process. In a discussion of collective work, it is interesting to see what effect locality has on the scene, at what point practices become adopted in a wider social context, and how the autonomy of these practices is defined. I see these sets of questions not so much as institutional but as organizational.

Self-reference can be understood as one of the features of discursive practices related to media. However, over the last few years the use of the term in connection with media art has been mostly dismissive, describing formal and hermetic properties of the work, practice, or scene rather than a set of approaches to communication, discussions, and documentation that compose a historical narrative. In his article "Mapping the limits of new media" [4], Geert Lovink writes, "What in positive terms could be described as the heroic fight for the establishment of the self-referential new media arts system through a frantic differentiation of works, concepts and traditions may as well be classified as a dead-end street." The authors' critical comment is directed at the art institutions that presumably fail to participate in the process of redefining the roles and strategies of tactical media and media art in the post 9/11 environment of informational fatigue and disillusionment: "The majority of the new media organizations such as ZKM, the Ars Electronica Centre, ISEA, ICC or ACMI are hopeless in their techno innocence, being neither critical nor radically utopian in their approach." Importantly, these comments stress the link between self-reference and the establishment of an institutional structure. However, they also raise the question whether one can expect a radically utopian approach from the "systems" of institutional bodies that are expected to ensure continuity and establish and represent – i.e. filter – practices in the field. Instead one could focus on informal networks and initiatives within which the experimental approaches have been originally created, tested, distributed, and developed. The practices of involvement, information sharing, reviewing, and documenting have been crucial in shaping the history of experimental art movements as it is known now. Still, what are the conditions that would allow to revive the theme of self-reference?

Self-reference can be understood as one of the features of discursive practices related to media. However, over the last few years the use of the term in connection with media art has been mostly dismissive, describing formal and hermetic properties of the work, practice, or scene rather than a set of approaches to communication, discussions, and documentation that compose a historical narrative.

Twin Languages – Methods and Messages

It may be appropriate to take a look back at the analogue samizdat practices of the 70s and 80s. These examples of creative writing have resulted in the invention or creative appropriation of new formal structures – intentional typos, subjective grammar amendments,

abbreviations, compositional shifts between poetry, interview, and real or fictional dialogue and text. One could also speak about the "invention" of a new language – new terminology within these structures. As an example or result of such a process of "invention of language," I could mention the *Glossary of the terms of Moscow Conceptualist School* [5], which was published as a summary of "words and expressions" created by this school; another example would be publications by Riga artists who invaded the mass media, which ended up discussing the terms invented and appropriated by them, and provided informational background on their activities. It is important to mention that most of these new metaphors and verbal structures were intended to describe an approach, to name a new mode of or guideline for action / perception within a cultural context.

The form of the collective glossary or vocabulary – an explanation of certain terms applied in the field – already is a symptomatic structure of the collaborative discourses related to both analogue and digital media. The process of "explanation" and redefining strategies is a constituent of the scene. I remember including a glossary of specific terms and concepts adopted by the new media scene in an article about new media developments in Riga, Latvia. Since then, I have been noticing similar explanations of glocal terminology and "manufacturing concepts" [6] in other publications devoted to media art. One could add a historical perspective by mentioning the vocabularies and redefinitions brought into the art field by the Situationist International, Dada, or Surrealism. New vocabularies are discursive and indicate an intention (or ambition) to link creative, and perhaps partly invented, language to recognized knowledge systems, such as academic writing.

Different tools of expression produce different structures of discourse, for example, hierarchical, instrumental, or non-hierarchical and collaborative. 0ne example of this type of framing within textual culture – by integrating issues of authorship, participation, and control of information distribution – can be found in the comparison between the popular but historically young genre of the interview [7] and the classical, seemingly obsolete, tradition of the dialogue. Despite "delegating" part of the speech act, interviews are still culturally affirmative of the figure of the author and of the power of editing and often imply contention or hierarchy between the interviewer and interviewee. As an instrument of mass media, the interview assumes a mediated one-way information flow. In contrast, dialogue or conversation (etymologically: flowing through the meaning; to converse through) presupposes equal or close to equal roles within the exchange. One could speculate that an interview presupposes a certain translation while dialogue is based on the possibility of communicating on a comparable level of language and argumentation.

This reveals two connected layers that form media-based languages, one being discourse or content, the other being the method of mediation, which, when used for creative purposes, undergoes similar revisions as narrative or argumentation. This argument relates to Friedrich Kittler's definition of "Discourse Networks." In his book *Discourse Networks* 1800-1900 (the original German title being *Aufschreibesysteme*, "notation systems" in a literal translation), he defines the discourse network as "the network of the techniques and institutions that provide a certain culture with the possibility of addressing, saving, and processing of the relevant data." [8] In another essay he remarks, "At best one differentiates between language, on the one hand, and technology, on the other, between communicative and instrumental action, as European writing would prove that there is no communication without the message technology." [9] I do not see discourse as being subordinated to technology, but rather understand the two as interrelated parts forming a narrative and affecting its reading, as twin languages.

Different tools of expression produce different structures of discourse, for example, hierarchical, instrumental, or non-hierarchical and collaborative. 0ne example of this type of framing within textual culture – by integrating issues of authorship, participation, and control of information distribution – can be found in the comparison between the popular but historically young genre of the interview ... and the classical, seemingly obsolete, tradition of the dialogue.

The emergence of technological tools does not only structurally affect narratives; it repositions the powers of and reshapes the relations between the inventor, user, and distributor. Even if we avoid moral judgements, technology cannot be understood as neutral, since it conditions its usage and its underlying social relations. The language of applications can be analyzed in a similar way as the vocabulary used in theoretical propositions. Not only the text itself but also its structure and distribution are inscribed with an agenda. From this point of view, it is interesting to analyze not only the forms and ambitions of Manifestos of avant-garde artists, but also the declaration and distribution methods of different copyright policies. The emphasis is shifted from structural data hierarchies within media (such as hypertext or database) to the hierarchies stablished by models of access.

In recent (July 2006) posts on Nettime – an e-mail list of

"international, networked discourse" – one could follow a debate that started with the posting of a report on the "Nettime_North_America gathering." The ensuing argument that was soon described as "generationalist" [10], i.e. unfolding between an "older" generation of people from the "tactical media" field and founders of Nettime, and a "younger" generation, some of which were so-called "lurkers" (subscribers reading posts without posting themselves). The latter group posed a set of questions regarding the general openness of majordomo mailinglists; exclusive standards of "highbrow theory" in postings on the list; and the legitimation of authority within the self-organized mailling list system, condensed in the question, "Who owns Nettime?" What resulted was a rather orthodox revolutionary tension between the "will for change" among the initiators of the discussion and the "impossibility of change" within the current mailinglist structure, which many (including myself) still recognize as a valuable form of media with "the status of a book." The discussion on several occasions positioned Nettime in opposition to the fragmented Blogosphere; at the conclusion of the debate, a group of people started to engage in developing "web-based applications that could be developed alongside email-based communication" and started a wiki.

The discussion showed that the mailinglist model has to some extent failed in its promise to provide a participatory structure and has now been relegated to the position of "older" media, leaving the arena open to new challengers – structures such as blogs and wikis. The debate also disclosed the difficulties of reconciling the current discourse on the list, being closer to that of a book, with the different discussion format that would be brought about by a formal upgrade through the use of more current technologies. In addition, an upgrade of the list seemed to have its "social" limits, as there apparently was little enthusiasm among the subscribers to take on the role of moderators. This conflicting situation perhaps illustrates the gap between a certain form of discourse and the "aging" tools for its distribution – visions of possible models for a more balanced content distribution in the end relied on the same wiki applications that were previously criticized on the list.

Licenses for new technological solutions and tools have only recently been created or are still in the process of being developed and adopted. In the current development of participatory technologies and social software, the freedoms of their use are compared to the freedoms we have enjoyed in verbal or written languages. The terminology surrounding Web 2.0 – such as "semantic web" or "taxonomy" – or even the encyclopaedic build-up of the Wikipedia are strongly linked to basic concepts of linguistics, which provide the support for an analogy between freedom of speech and "freedom to use, study, copy, modify, and redistribute computer software, and to defend the rights of Free Software users." [11]

Mnemotechniques, Solidarity, and Localization

The history and theory of experimental practices has traditionally been explored and shaped predominantly by the artists and activists working in the field. Technological solutions in the arts are often linked to technological conditioning, the influence of the commercial industries, and consumer culture. However, it is difficult to find industries that engage with the broader context of the field; the spectrum of engagement remains limited, in a rather modernist sense, to pragmatics, policies of brand protection, and the industries' perceived need to distance themselves from what might be seen as unappealing aspects, such as the military history and context of media, experiments in arts and science or their wider cultural impact. An exploration of the field of history – not limited by scientific or political agendas – has been left largely to individual efforts in creating social platforms for public discussion; to individual contributions by people working on "discourse archaeology."

Michel Foucault has been writing about the condition of "ties between care of the self and lack of education." [12] The field of media art is "generational" – generations of inventors, users, and artists are distanced from each other not so much by time spans but, despite interdisciplinarity, by the "age-specificity" of the media in which they work (video art, experimental film, text art, computer art, net art), and there are few bridges crossing these gaps. Yet these differences and gaps probably prevented the emergence of a homogenous, consensual history of the field. Artists have often been pioneers in establishing subjective interdisciplinary links between the histories of sciences, humanities, and arts, treating these domains as fields of reference open to variation and reinterpretation. Technological gaps are bridged through discourse – through experimental investigations in the history of the respective field and through discussing rediscovered references. This might be the reason why a generational gap is less noticeable in independent broadcast media, which tend to operate on the assumption of a utopian axis of convergent distribution channels with a "universal reach." Autonomous histories in experimental arts are close to the project of academia, which produces a frequent fusion of these fields. The genealogy of technology is tied to the creative and social ideas behind it.

In his book *Contingency, Irony, Solidarity*, Richard Rorty – taking a rather postmodern stance towards the definition of self and knowledge production – explores possibilities of reconciling the "private" concept of self-creation with his vision of solidarity and utopian liberalism and points to the contingency of language. Referring to philosophies of language – Ludwig Wittgenstein and Donald Davidson – he argues that we have to abandon the idea of discovering universal knowledge since knowledge is continuously being created in a contingent process of the invention of new vocabularies that affect

both selfhood and society. "The method is to redescribe lots and lots of things in new ways, until you have created a pattern of linguistic behaviour which will tempt the rising generations to adopt it, thereby causing them to look for appropriate new forms of non-linguistic behaviour." [13] Recognition of the "contingency of language" is seen as an indicator of a general turn from theory to narrative. "Solidarity is not discovered by reflection but created. It is created by increasing our sensitivity to the particular details of the pain and humiliation of other. […] This is the task not for theory but for genres such as ethnography, the journalist's report, the comic book, the docudrama, and especially the novel." Rorty elaborates on this through a variety of references, among them Nietzsche's description of "truth" as a "mobile army of metaphors;" he refers to the role of the poet as that of an inventor of vocabulary and introduces the figure of the historic, contingency-aware "liberal ironist" who reconciles a private awareness of the contingency of language with social empathy. For Rorty, writing in the form of both literature and ethnography (journalism) is important for constituting a link between self-creation and solidarity; "detailed descriptions of particular varieties of pain and humiliation (in e.g. novels and ethnographies), rather than philosophical or religious treatises, were the modern intellectual's principal contributions to moral progress." [14]

One could compare this proposition with a statement from the community-based "Cybermohalla" project by Sarai / Ankur:

What would be the role of an artist in the age of participatory culture? Maybe, as in the age of samizdat, not a progressive but rather an exploratory one – both samizdat and subsequent media arts were not so much concerned with the space of media as with the space "beyond" media, or possibilities of expression (and action) beyond conventional models.

> *Diaries have the potential to evolve newer languages that further displace dominant discourses because they are situated and personal, outside of the domain of the 'expert,' and the technocratic language, that 'expert'ese entails. Hence, Diaries can create the possibility of forms of narratives other than those that exist in mainstream narrative culture. Written across dimensions of space, time, specific contexts and subjectivities, diaries can also be seen as databases of multiple narrative strands, as a plurality of comment, observation, word-play and reflection; as adventitious micro-histories of the present.* [15]

Given the new and sometimes non-linguistic mechanisms for publishing and reporting – the grassroots journalism of the Blogosphere, wikis as a collaborative tool enabling the collective creation of text and vocabularies – one might assume that we have arrived at creating conditions for this new age of "description" and for the eventual rise of solidarity. Social software applications tend to establish themselves as a global language while their content becomes more localized, individualized, community-based. Weblogs and wikis in local languages, free and open source software, locative media, folksonomy, and wifi systems have contributeda to a shift that brings the geographical peripheries back into focus. The utopian creative and social model of the mid-90s' technological "communication space" has been transformed into a pragmatic but still visionary media channel that is far more bound to physical space. There are various examples of this development – among them Wireless London [16], Île Sans Fil [17], Loca [18], or Dorkbot networks [19], which, through technologies and ad-hoc networking, appeal to real-space communities. On the other hand, initiatives that started as online experiments have grown into organizations developing projects, local language publications, and local infrastructures – RIXC [20] (Latvia), kuda.org [21] (Serbia), mi2 [22] (Croatia) or Intermundos [23] (Columbia) could be mentioned as examples. These projects involve small local networks and revise collaboration models in real space. "Global" tools are applied within the context of locality and are borrowed to realize localized, specific agendas and coin site-specific argumentation and strategies.

Discourses striving to address global conditions and solutions seem to have lost their credibility during the course of the 20th century, the last disappointment being the post-9/11 political environment. Information space is saturated with fragmented descriptions and narratives, and we now possess more efficient and egalitarian (in the computerized world) tools for their distribution and publication. But, at the same time, we can see the expansion of standardized applications and media language conventions. This tendency seems to continue the general trajectory of globalization and its international application of conventional organizational models (i.e. tools), such as copyright legislation, institutional models, software solutions, or even subculture trends.

Is this a promising picture for net culture? Maybe, if net culture will find new ways to create tactical collaboration nodes and surpass the binary Marxist model of the base and superstructure, and its associated representational attitudes. Participation is related to the models of consumer culture within existing systems; what seems to be dangerous is contempt for "participatory" aspects and

obedience with regard to established social technologies. Contentwise, "empty" applications have their bias and tend to be "filled" with political and commercial ideologies; as in the case of terminology, where dead conventions are often refilled with dull and repetitive meanings created by politics, or in the case of argumentation in the field of copyright policies.

What would be the role of an artist in the age of participatory culture? Maybe, as in the age of samizdat, not a progressive but rather an exploratory one – both samizdat and subsequent media arts were not so much concerned with the space of media as with the space "beyond" media, or possibilities of expression (and action) beyond conventional models. However, this requires a review of the current language, references, and hierarchical systems in society and of the set-up and structure of movements themselves. When textual mass culture saturated with ideology, the possibilities of an alternative inscription of text, image, and work in the non-autocratic systems were revised. The collaborative writing experiments mentioned in the beginning of this article reconnected their practice with discourse analysis, reflecting on and reinterpreting their activities. The artists' choice was to modify available media and find a new language and collaborative mode for analysis. New media art, as any other self-organized movement, has always been self-referential and self-reflexive, which has been a rather constructive aspect of its development.

At this point, one could probably make a U-turn towards Francisco Varelas' distinction between the interactions of "control" and "living system." Varela distinguishes between two interaction systems: interaction through control, and interaction through autonomy. Interaction through instructions – characterized by "consumption, input and output, the definition of identity through the other" and resulting in mistakes in the case of failure – is compared to an autonomous, self-referential, autopoetic living system that represents "production, regulation and self-defined identity" and entails interaction through conversation or incomprehension (in the case of failure). [24] This raises ethical questions regarding the complexity of relations to the living system.

Maybe it is possible to propose a vision of unpredictable, productive hermeneutics that ensures the development of a "living" scene. In this context, self-reference might be an analytical and ironic power rather than a stagnant element. In the end, even "convergent" media are highly self-referential, not only on a narrative but also on a technological level – sampling, encoding, processing, browsing or reporting on media, and complementing them with links to source sites is different from writing an off-line text. Projects such as *GWEI* [25], *Human Browser* [26] or *Textz.com* can be seen as "ironic media experts" and manipulators of self-referential systems.

In philosophy, self-reference is associated with the paradox of inclusion, exclusion, and autonomy. To mention an example from the Wikipedia: "The Barber paradox supposes a barber who shaves everyone who does not shave himself, and no one else. When one thinks about whether the barber should shave himself or not, the paradox begins to emerge." The elimination of self-reference in new media and experimental arts would probably raise more questions than the acceptance of self-reference.

References:

[1] Juris Boiko and Hardijs Ledins, *ZUN* (1978 / 79) (Riga, 2004).
[2] Коллективные·действия by the group Поездки·за·город (1976 – 1989), (Ad Marginem: Moscow, 1998).
[3] *12 Dialogues 1962-1963* (Nova Scotia College of Art and Design: Halifax, 1981).
[4] *The Absolute Report: Time Space Code Memory* (Springerin / Revolver: Vienna, Austria, 2006), http://www.apsolutno.org/production/projects.htm#
[5] *Glossary of the terms of Moscow Conceptualist School* (Ad Marginem: Moscow, 1999).
[6] Term borrowed from "Dictionary of war – collaborative platform for creating 100 concepts on the issue of war, to be invented, arranged and presented by scientists, artists, theorists and activists," http://dictionary-ofwar.org
[7] According to *Websters International Dictionary* (1893), "the first formal notice of the practice under that name" can be found in an article on interviewing in *The Nation*, Jan. 28, 1864.
[8] Friedrich A. Kittler, *Aufschreibesysteme* 1800 - 1900 (Wilhelm Fink Verlag:Munich, Germany, 1995).
[9] Friedrich A. Kittler, *Short Cuts* (Frankfurt, 2002), p.130 [Translation by the author].
[10] Brian Holmes posting 06.06.06.
[11] http://gnu.org/
[12] *Technologies of the Self: A Seminar With Michel Foucault* (University of Massachusetts Press: Amherst, MA 1988).
[13] Richard Rorty, *Contingency, Irony, Solidarity* (Cambridge Univerity Press: Cambridge, 1989).
[14] Ibid.
[15] http://www.sarai.net/cybermohalla/cybermohalla.htm
[16] http://wirelesslondon.info
[17] http://www.ilesansfil.org/
[18] http://loca–lab.org
[19] http://dorkbot.org
[20] http://rixc.lv
[21] http://kuda.org
[22] http://www.mi2.hr
[23] http://www.intermundos.org
[24] Francisco Varela, "Autonomie und Autopoesie" in *Der Diskurs des Radikalen Konstruktivismus* (Suhrkamp: Frankfurt am Main,1994).
[25] "Google Will Eat Itself," http://www.gwei.org
[26] http://www.iterature.com/human–browser/fr/hb_sollertis_1.php

The Public Secret: Information and Social Knowledge

Sharon Daniel

Abstract

As the number of prisons increases, so does the level of secrecy about what goes on inside them. The secret of the abuses perpetrated by the Criminal Justice System and Prison Industrial Complex can be heard in many stories told by many narrators, but only when they are allowed to speak. After a series of news stories and lawsuits documenting egregious mistreatment of prisoners in 1993, the California Department of Corrections imposed a media ban on all of its facilities. This ongoing ban prohibits journalists from face-to-face interviews, eliminates prisoners rights to confidential correspondence with media representatives, and bars the use of cameras, recording devices, and writing instruments when conducting interviews. For the past three years, I have intentionally circumvented the California Prison media ban, gaining access to the incarcerated women by posing as a legal advocate. I have collaborated with non-profit, human rights organization, *Justice Now*.[1] Together we have been documenting conversations with women prisoners at the Central California Women's Facility (CCWF) in Chowchilla, CA, the largest female correctional facility in the United States, and publishing their statements online at http://improbablevoices.net.[2] The existence of the Prison Industrial Complex, its pervasive network of monopolies, its human rights abuses, are all extremely well documented yet wholly submerged and repressed. The growth of the prison industrial complex and the unimpeded violation of human rights within it are irrefutable testimony to the power of the *public secret*.[3]

The Public Secret

Truth is not a matter of exposure which destroys the secret, but a revelation that does justice to it.
Walter Benjamin, *The Origin of German Tragic Drama*[4]

If secrecy is fascinating, still more so is the public secret into which all secrets secrete …
Michael Taussig, *Defacement*[5]

Don't ask, don't tell
Bill Clinton, Public Law 103-160 prohibiting openly gay people from serving in the United States armed forces.

Secrets are the opposite of information. A secret is not open or public. Information is knowledge revealed. Information may be something (a message, a picture), which justifies change in a given construct. Secrets may be inexplicable, incomprehensible. True, or not, neither secrets nor information necessarily conform to what is real or just.

There are secrets that are kept from the public and then there are "public secrets" – secrets that the public chooses to keep safe from itself, like, "don't ask, don't tell." The injustices of the war on drugs, the criminal justice system, and the Prison Industrial Complex are "public secrets."

The trick to the public secret is in knowing what not to know. This is the most powerful form of social knowledge. Such shared secrets sustain social and political institutions. "[K]nowing what not to know lies at the heart of a vast range of social powers and knowledges intertwined with those powers, such that the clumsy hybrid of power/knowledge comes at last into meaningful focus, it being not that knowledge is power but rather that active not-knowing makes it so."[6] We fall silent, slip into denial, when faced with massive sociological phenomenon such as racism, poverty, addiction, abuse, torture, or economic and political forces like globalization, privatization, and militarization. We are troubled by our own complicity but we do not speak because we know that "without such shared secrets any and all social institutions – workplace, marketplace, state and family – would founder. […] Where ever there is power there is secrecy, except it is not only secrecy that lies at the core of power, but public secrecy."[7]

The growth of the prison industrial complex and the unimpeded violation of human rights within it are irrefutable testimony to the power of the public secret.

The public perception of justice – the figure of its appearance – relies on the public not acknowledging that which is generally known. Stolen elections, illegal wars, and state violence could be described as "unknown knowns" – the unstated fourth term of Donald Rumsfeld's "redundant formulations."[8]

As we know,
There are known knowns.
There are things we know we know.
We also know
There are known unknowns.
That is to say
We know there are some things
We do not know.
But there are also unknown unknowns,
The ones we don't know
We don't know.
Donald Rumsfeld – Feb. 12, 2002, Department of Defense news briefing

Logically, Rumsfeld failed to mention "unknown knowns" – the ones we know but won't know we know, the public secrets.

What is known
Knowledge is the psychological result of perception, learning and reasoning. Knowledge, subordinated to the logic of capitalism, is commodified, manipulated, and exploited, as information. In an information society, such as is pre-dominant in the contemporary first-world, the creation, distribution and manipulation of information is a significant, if not the most significant, economic activity and politics trades in perception. Politics is located at the intersection of information and interpretation.

"Perception management" is a term originated by the U. S. military. The U.S. Department of Defense (DOD) gives this definition:

> *Perception management – Actions to convey and/or deny selected information and indicators to foreign audiences to influence their emotions, motives, and objective reasoning as well as to intelligence systems and leaders at all levels to influence official estimates, ultimately resulting in foreign behaviors and official actions favorable to the originator's objectives. In various ways, perception management combines truth projection, operations security, cover and deception, and psychological operations.*[9]

Perception management is prevalent in the realm of domestic politics as well.

Ronald Reagan destroyed public perception of the program previously known as *Aid to Families with Dependent Children* with the tainted image of the "welfare queen."

Don Novey, president of the California Correctional Peace Officers Association (the prison guards union), exploited the public's horror at the abduction of young Polly Klaas from her white, middle class suburban home to produce the political hysteria and paranoia behind California's "three strikes and you're out" legislation. "Three strikes" mandates a sentence of 25 years to life for any third felony conviction, not only kidnapping and murder, but crimes as minor as growing a marijuana plant or shoplifting a pair of boxer shorts.

As the United States continues to send terror suspects to be interrogated in countries known to practice torture, George W. Bush refuses to repatriate Guantánamo detainees (who he has unceremoniously stripped of their civil and human rights, tortured and abused) until he can be certain they will be "treated humanely in their home countries."[10]

There have been 41 suicide attempts by 25 detainees since the Guantánamo facility opened in 2002. Tragically, on June 10, 2006, three prisoners succeeded. They hanged themselves in their cells with nooses made of sheets and clothing. In late 2003, military officials at Guantánamo began to re-classify many of the suicide attempts as "manipulative, self-injurious behavior." Military officials have suggested that the three suicides were a form of a coordinated protest. "They are smart, they are creative, they are committed." Rear Adm. Harry B. Harris, Jr., the commander of the detention camp at Guantánamo, told reporters "They have no regard for life, neither ours nor their own. I believe this was not an act of desperation, but an act of asymmetrical warfare waged against us."[11]

Perception Management – there is a secret to it; if you can tell an outrageous lie without flinching (you must keep a straight face, and be willing to tell it over and over again), it won't be effectively contradicted.

"State power today is no longer founded on the monopoly of the legitimate use of violence – a monopoly that states share increasingly willingly with other non-sovereign organizations,"[12] for example, multi-national corporations. State power is founded above all on the control of appearance and on terror.

The public secret is a reconfiguration of repression, an aporia,

> *… a state of doubleness of social being in which one moves in bursts between somehow accepting the situation as normal only to be thrown into a panic or shocked into disorientation by an event, a rumor, a sight, something said or not said – something that even while it requires the normal in order to make its impact, destroys it. You find this with the terrible poverty in a Third World society and now in the centers of US cities too, such as Manhattan; [and San Jose] people like you and me close their eyes to it, in a manner of speaking, but suddenly an unanticipated event occurs, perhaps a dramatic or poignant or ugly one, and the normality of the abnormal is shown for what it is. Then it passes away, terror as usual, in a staggering of position that lends itself to survival as well as despair.*[13]

The public secret is an aporia – an irresolvable internal contradiction – between power and knowledge, between information and denial, between the task of politics "to cause appearance itself to appear"[14] and the goals of an open society, one in which the state is expected to act for the people as guarantor of human and civil rights.

The Public

Any interpretation of the political meaning of the term people ought to start from the peculiar fact that in modern European languages this term always indicated also the poor, the underprivileged and the excluded. The same term names the constitutive political subject as well as the class that is excluded – defacto, if not de jure – from politics… naked life (people) and political existence (People), exclusion and inclusion, zoë and bios.[15]

Where, traditionally, we have understood the political subject through the figure of the citizen of a sovereign nation-state, in our world at this moment the figure of the citizen is eclipsed by that of the consumer – the most powerful minority in a world population dominated by other figures,

the refugee
the homeless
the hiv positive
the addict
the squatter
the internally displaced
the impoverished
the queer
the black
the prisoner
the other

These figures – regarded as marginal – have become, as Giorgio Agamben says, "the decisive factor of the modern nation-state by breaking the nexus between human being and citizen."[16]

> *That there is no autonomous space in the political order of the nation-state for something like the pure human in itself is evident at the very least from the fact that, even in the best of cases, the status of refugee has always been considered a temporary condition that ought to lead either to naturalization or to repatriation. A stable statute for the human in itself is inconceivable in the law of the nation-state.*[17]

The term “Nation-state” is derived from *nascita* – meaning “nativity” or birth. The trinity of nation–state–territory is founded on the principle of nativity or birth as pre-requisite for citizenship and justification of sovereignty. The refugee, the undocumented worker, the immigrant, the racial other, the impoverish and now the prisoner, all of the small "p" people who are oppressed and excluded, produce a fundamental "bio-political fracture" - they fall outside the circle of nascita – and thus bring the originary fiction of sovereignty into crisis.[18] Like the "final solution," the prison industrial complex (successor to the institution of slavery) attempts to resolve this crisis by disenfranchising, de-nationalizing, de-subjectifying, enslaving and essentially 'disappearing' the unassimilable and unrepresentable other – the secret third world within the first world that exemplifies inclusive exclusion. This excluded other is reduced to what Agamben calls "bare" or "naked" life.

In Agamben's analysis, the state can only assert its power and affirm itself by separating "naked life" or biological life from its "forms-of-life" or social and political agency – reducing the subject to a biological entity – a bare life preserved only as an expression of sovereign power. The prisoner is the quintessential example of "naked life." The prisoner is de-subjectified – in every sense of the word ‘subject' – political, psychological, and philosophical. She is denied agency, stripped of her individuality, subjected to cruel and inhumane treatment, and quite literally objectified.

A prisoner's body becomes the property of the state. In California, a prisoner who attempts suicide unsuccessfully can actually be charged with destruction of state property. The prisoner's body is kept alive to represent state power – to both absorb and reflect state violence – proving that the state has the power to force the prisoner to live under any conditions.

Homo Sacre

> *When their rights are no longer the rights of the citizen, that is when human beings are truly sacred, in the sense that this term used to have in the Roman law of the archaic period; doomed to death.*
> Giorgio Agamben, *Means Without End: Notes on Politics*

Josephine Moore, CCWF has been in prison on a sentence of 15-to-life since 1977:

> *My family and children have gone on about their lives. I don't blame them after three decades – but I still cannot conceive of my life, of living, without the possibility of parole – I never thought I would be in prison this long – I took a plea bargain and the judge said I would be out in seven years… part of it is my own fault – I've learned everything negative, using drugs, everything, in prison – everything… but then again, I've been clean and straight since 1991 – 15 years – and I've been found suitable [for parole] twice [by the parole board] – but in 2003 [Governor] Davis said "no" and in 2004 Arnold [Governor Schwarzenegger] said “no” – I don't know*

what they want from me – its like, I give up, I don't know what they want… people doing life have nothing… its like they put us in an empty room and say here, sit, forever, with nothing… I am tired, I am so tired.

A prisoner, regardless of the severity of their sentence, no matter how minor their legal infraction, is reduced from political life to biological life. The prisoner is kept alive, but barely, as naked life – a status that is tautologous with the deprivation of their human rights. Prisoners are thus ideologically acceptable victims of mal-treatment, neglect and abuse.

Information about the torture and abuse of prisoners at Guantánamo Bay and other US "detention centers" for enemy combatants has been well documented and widely disseminated. Detainees at Guantánamo have no rights, no recourse. They know, we all know, that they can be detained there, indefinitely, forever – for whatever reason, or for no reason at all – all at the will or whim of the state. This is a most extreme example of bare-life rendered ideologically appropriate as "terror" and a blatant example of state violence. Only 10 of the roughly 465 men held at Guantánamo since 2002 have been charged before military tribunals, and recently released documents indicate that many have never been accused even in administrative proceedings of belonging to Al Qaeda or attacking the United States. It is no wonder that over one eight-day period in August 2003, 23 detainees tried to hang or strangle themselves, including 10 on a single day. Hunger strikers have been force fed in restraint chairs.[19] As many detainees repeatedly attempt to take their own lives – medical personnel rush in to revive them – the state has the power to force the prisoner to live under any conditions.

Biomedical subjects

When universal access to adequate health care does not exist outside prisons – medical malpractice and neglect are easily justified inside them. An investigation of the California Department of Corrections in 2005 determined that the prison medical service was killing an average of one inmate a week through malpractice or neglect. The federal judge who, last summer, ordered the system into receivership was so shocked by testimony that he characterized the attitude and behavior of medical staff toward prisoners as "at times outright depravity."[20]

Prison Doctors and medical staff regularly mis-treat or ignore prisoners' medical needs because they choose not to believe prisoners' accounts of their own symptoms. Doctors and staff consistently characterize prisoners as "drug-seeking,"[21] "malingering," or simply not worthy of attention. In many cases a minor condition, which goes untreated escalates into a tragic loss. Medical malpractice and malfeasance can result in the defacto conversion of a prison sentence to a sentence of death.

At least one Doctor in the CDC system is currently under investigation for performing unnecessary surgery on a number of women prisoners over a period of several years. Genea Scott was a victim of one such unnecessary procedure (removal of a lymph gland) and suffered complications. She is a type 1 diabetic. Diabetes is a serious, degenerative disease that can affect every organ in the body. A diabetic must keep her blood sugar in balance to avoid or delay the onset of severe complications such as kidney failure, heart disease, blindness, nerve damage, and loss of circulation. The balance of blood sugar can only be controlled by measured and timely use of insulin in relation to a strictly controlled diet. In California, diabetics in prison are not offered a diabetic diet and insulin doses are frequently delayed or withheld. Diabetic prisoners are not allowed to handle needles to inject themselves so they must wait for medical staff. There are approximately 100 insulin dependent diabetics at CCWF.

Genea's prison job, cutting cloth strips that are sewn into American Flags, requires her to stand in place all day on a concrete floor. A diabetic's circulatory system deteriorates when the blood sugar spikes and drops leaving the extremities vulnerable to sores, injury and infection. Genea's blood sugar level is extremely volatile given the prison diet and lack of control over her own insulin doses. She has developed sores on her feet, diabetic ulcers, and has been advised by medical staff to purchase special protective and ventilated shoes for diabetics. The $55.00 price of the shoes (which must be ordered through the prison industries catalogue) is more than three months worth her total salary in the flag factory.

I'm getting calluses and sores standing in the med line so long – an hour and 15 minutes waiting for my insulin – [a guard told me I can go for a day without my insulin and survive, he doesn't know] – by then my sugar would be dropped all the way down and I'd be comatose – I still haven't gotten my special shoes …. They told me I'd have to buy them myself – I have no money – how the hell am I going to get myself those special shoes…I have a diabetic ulcer on my toe. The same thing F_____ had. So, yes, I'm scared. Right now it's getting to the point that I don't even tie my shoes up its hurting so bad… They told me I have neuropathy… I don't have enough circulation points in my toes – that's why I have this sore on my toe. I don't want my leg to end up like F_____'s. I was in the infirmary with her when they did that to her. Yeah, they cut off her toe. It didn't heal. Then they said they would have to cut off her foot. She said "no." Then he talked her into it – he told her they would just take another small part of her foot. And when she woke up they had cut off her leg. They cut off her leg. Then they told her it was her fault…

Bare life is a form of life that is only survival; the prisoner has no agency and the state and its agents are free to ignore their ethical responsibility to her. This freedom is an expression of the power of the state; it can force the prisoner to live under any conditions – the conditions of the state of exception.

The Secret

States of Exception

> *Walter Benjamin wrote, "The tradition of the oppressed teaches us that the 'state of emergency' in which we live is not the exception but the rule." The state of exception is the temporary suspension of the rule of law that is revealed instead to constitute the fundamental structure of the legal system itself.*
> Agamben, *Means Without End: Notes on Politics*

State violence of every possible variety is enacted within the space of the prison – where anything is possible. Consider, Guantánamo, "rendition," the "Detainee Treatment Act," the "secure boarder initiative," and the permanent "global war on terror" but also consider corruption and exploitation in post-Katrina "reconstruction," as well as emergency measures in the domestic "war on crime" like "three strikes and you're out" sentencing legislation and the California state prison media ban – all are emergency exceptions to the legal protection of human and civil rights, primarily those of people of color.

Although blacks account for only 12 percent of the U.S. population, 44 percent of all prisoners in the United States are black. One in four prisoners in the United States is serving time for a non-violent drug law violation. These are prisoners of war – the US war on drugs – which is essentially a war on race, a war on gender, a war against the socio-economic "other."

The state of exception has become a permanent arrangement through which the state can insure its pure nativity and sovereignty. This addresses so-called "problems" of immigration and so-called "problems" of race and class – "problems" that have to do with inside and outside, identification and transgression. “It is in jurisdiction – the doctrine governing who has power to decide what and where – that the public/private distinction finds its natural home."[22] This is the line that includes by excluding. "A state is a sovereign. This means that it is defined by a public / private line at its border, which is principally territorial, such that what happens within is private, meaning that it is the exclusive domain of the patriarchal order called government."[23] One of the most common mistakes "is the tacit confusion of ethical categories and juridical categories. […] As jurists well know, law is not directed toward the establishment of justice. Nor is it directed toward the verification of truth. Law is solely directed toward judgment, independent of truth and justice."[24]

In the US, there is little or no difference between the prison and the camp – violence and right – the arbitrary enforcement of the state of exception is the only rule.

"Because of the persistent power of racism, 'criminals' are, in the collective imagination, fantasized as people of color."[25] In poor communities of color, prison sentences – especially for young people – are an inevitable fact of life. For poor persons of color, the violation of their human rights – to economic security, personal safety, education, housing, privacy, adequate medical care – leads to crimes of poverty, frequent engagement with regimes of enforcement, and subsequent high rates of incarceration.

Prisons in the United States are monuments to the criminalization of poverty, and human repositories where the public secrets of economic and political power are kept safe.

The "prison industrial complex," like its namesake – the military industrial complex – is collaboration between the state and multi-national corporations, the corporate-state. While the military industrial complex promotes imperialist aggression for the purpose of financial gain, the prison industrial complex is designed to profit from the incarceration of marginalized communities on a massive scale, and to enforce their continual political disenfranchisement by law – thus assuming the role historically played by the institution of slavery.

Although blacks account for only 12 percent of the U.S. population, 44 percent of all prisoners in the United States are black. One in four prisoners in the United States is serving time for a non-violent drug law violation. These are prisoners of war – the US war on drugs – which is essentially a war on race, a war on gender, a war against the socio-economic "other." "This is the ideological work that prison performs – it relieves us from the responsibility of seriously engaging with the problems of our society, especially those produced by racism and, increasingly, global capitalism."[26] The prison is the space that opens up when the state of exception becomes the rule…

The ideological space of the prison

> *... where the arbitrariness of power butts the legitimation of authority, where reason and violence do their little duet.*
> Michael Taussig, *The Nervous System*[27]

The prison is the "materialization" of the state of exception that can only be understood as a "topological perforation" like a mobius strip or a Klien bottle where exterior and interior "in-determine" each other.[28] The prison as a "political space" is both a hole – like a sinkhole – and a mobius-like protrusion. Experiencing this doubleness of perception is much like encountering an anamorphosis, for example, the "memento mori" in Holbein's painting *The Ambassadors*, in which a smear, or "blot"[29] mars or perforates the illusion of three-dimensional space. Yet, when seen from the *proper* perspective – a specific physical location outside the space depicted in the painting – this "blot," or smear (hole or protrusion) resolves into the image of a skull. Recognition of the blot-as-skull skews the symbolic order of the painting (exposing the nullity of the objects of art and knowledge represented therein) unmasking its truth "in a manner that does justice to it."[30]

The space of the prison is the space of emptiness and exile – sinkhole and protrusion – a no-man's land that perforates the space of the state, acting back into it. Anyone, prisoner or police, who enters the space of the prison "moves about in a zone of indistinction between outside and inside, exception and rule, licit and illicit, in which every juridical protection had disappeared."[31] It is the space of the state of exception where anything or nothing is possible depending on where you stand.

> *In as much as its inhabitants have been stripped of every political status and reduced completely to naked life, the [prison] is also the most absolute biopolitical space that has ever been realized – a space in which power confronts nothing other than pure biological life without any mediation.*[32]

A three-million-dollar razor wire fence separates California Correctional Women's Facility from the middle of nowhere – its site is an agri-business desert. "The State bought devalued rural land – mostly formerly irrigated agricultural land and assured small depressed towns now shadowed by prisons that the new recession proof, non-polluting industry would jump-start local redevelopment."[33] Between the metal detector at the fence and the visiting room there is an uncannily suburban, perfectly manicured, lawn complete with a rose-lined path and built in sprinkler system – it is like a mirage surrounded by razor wire glinting in the relentless heat, a perforation, an anamorphic image intended to reinscribe the symbolic order of the space of the prison as a safe, calm, domesticated space. You can only see it if you are coming in from the outside – a specific political location as well as a physical one – like that necessary to interpret the anamorphosis in the Holbein painting. Inside, beyond the visiting room, where visitors never go, the yards are treeless, there are no roses, no grass or shade, no sprinkler system. Despite the razor wire inside and outside "indetermine" each other. This is apparent in the way the prison "acts back on" the space outside it – beyond the edge of agri-desert impoverished communities of color are eviscerated, and the prison industrial complex expands.

Guards and prisoners alike are brutalized in the ideological space of the prison.

> *… the police – contrary to public opinion – are not merely an administrative function of law enforcement; rather, the police are perhaps the place where the proximity […] between violence and right that characterizes the figure of the sovereign is shown more nakedly and clearly than anywhere else. […] The rationales of "public order" and "security" on which the police have to decide on a case-by-case basis define an area of indistinction between violence and right that is exactly symmetrical to that of sovereignty.*[34]

A recent headline in The *New York Times* "US agent dies in shootout with Prison Guard" tops the story of a federal grand jury indictment against five prison guards accused of engaging in a "sex ring" – in which the guards traded drugs, alcohol and money for sex with female inmates. These guards threatened to plant contraband in inmates' belongings if they did not participate or have them sent to other institutions farther from their families. They monitored inmates' telephone calls in order to identify and then intimidate anyone who attempted to report their conduct; showed prisoners information about themselves and other prisoners on Bureau of Prison computers to prove that they could be tracked anywhere within the BOP system; and used what the indictment called "cleaning products" to destroy evidence of sexual contact.[35] The story in *The Times* focused on a shootout between the guards and Federal agents at the prison. When federal agents attempted to arrest the indicted guards one of them pulled a "personal weapon," shot, and killed one of the arresting agents. A federal agent then killed the shooter and another prison guard was wounded in the crossfire – high noon at the OK corral. These deaths are certainly shocking and tragic. The offenses detailed in the indictment are equally shocking and tragically common in prisons and detention centers across the nation, and rarely revealed.

During a prison visit at CCWF two days after the Florida shootout made headlines an inmate laughed ironically, "maybe that will slow the guys here down a little … they may start to think they actually need to watch their backs." The story is so common, the details so atrocious. Guards bring in drugs and alcohol, sneak in cell phones cameras, and take surreptitious photos of

female prisoners, coerce prisoners into sexual slavery, and promote violence for their own amusement. Prisoners who are subjected to such treatment have little recourse. A woman at CCWF recounted that for months she was forced to have sex with a guard under threat of a false accusation, which would have resulted in an extension of her sentence. First he accused her of hitting him. Then he told her he would drop the charge in exchange for sex. It was his word against hers. As the frequency and brutality of the guard's sexual demands increased the woman collected physical evidence, what she hoped would prove to be DNA evidence to support a complaint. As a prisoner she was forced to first file a complaint through the prison administration. Once the paper work was filed, her abuser knew that she had physical evidence. Guards have the option of searching and destroying any prisoner's personal belongings at any time. Her room and her locker were searched and all of her evidence was destroyed. As Benjamin puts it,

> *The assertion that the ends of police violence are always identical or even connected to those of general law is entirely untrue. Rather, the "law" of the police really marks the point at which the state… can no longer guarantee through the legal system the empirical ends that it desires at any price to attain.*[36]

The regulation of prisoners, their rights, and their living conditions is left to state governments who appoint governing boards to oversee prison administrations. Prisoners' lives are in the hands of politicians, prison administrators and guards – "interested parties" who are economically dependent upon the growth of the prison industrial complex. Both inside and outside the prison, the fox is guarding the hen house.

A market economy for prisons has led to a market demand for prisoners (a strong lobby for ever-tougher sentencing to satisfy the need for more cheap labour and maintain the corrections economy):

> *Companies that service the criminal justices system need sufficient quantities of raw materials to guarantee long-term growth. […] In the criminal justice field the raw material is prisoners, and industry will do what is necessary to guarantee a steady supply. For the supply of prisoners to grow, criminal justice policies must ensure a sufficient number of incarcerated Americans regardless of whether crime is rising or the incarceration is necessary.*[37]

Coincident with the boom in prison construction in the 1980s, there was a dramatic shift in attitude toward crime and punishment in the US. Despite an overall decrease in crime, crime became an emergency and victims' rights were seen as justification for emergency measures. Lawmakers dismantled programs designed to help rehabilitate criminals and passed new sentencing laws that put more people in prison for lesser crimes and for longer periods of time.

As a result of California's "three strikes and you're out" law, inmate populations have expanded exponentially and so has the prison industrial complex.[38] Prisons are "serviced" by giant corporations, like MCI and Marriott, with monopoly contracts for catering, telephone service and medical care. For example, families of prisoners in California must have MCI as their long-distance carrier if they want to receive collect calls. If they have MCI available in their neighbourhood and have the credit rating required for account activation their calls are interrupted every 15 seconds by a recording reminding them that they are speaking to a prisoner of the CDC. MCI's rates for collect calls from prisons are 7 times the normal cost of a collect call from anywhere else in the state.

Symbolic Labor

The fundamental premises and goals of the institution of slavery are now realized though the prison industrial complex. Inmates in state and federal prisons are often employed by private corporations for extremely low pay. In California, many inmates are employed by the Prison Industry Authority. PIA operates over 60 industries at 22 of California's prisons. PIA's revenue comes from the sale of its products and services. At CCWF PIA operates a textile factory for the production of California and United States flags. On January 1, the 254th anniversary of Betsy Ross's birth, Beverly Henry, who works in the PIA flag factory, wrote the following:

> *Like Betsy Ross, I sew American flags. But I do my work for 55 cents an hour in an assembly line inside the Central California Women's Facility, one of the largest women's prisons in the world. I was sentenced to prison for 15 years after being convicted of selling $20 worth of heroin to an undercover cop. I sew flags to buy toiletries and food.*
>
> *From the time I was a little girl, I was taught to put my hand over my heart when pledging allegiance to the flag. I emphatically believed in the values of independence, freedom and equality the flag represents. But as time went on and I grew older, I learned that these values do not apply equally to all Americans. As a black girl, I attended segregated schools without enough resources to provide a quality education. As an adult, I struggled continuously with drug addiction, but there were no resources available for me to get help. Instead, I was sent to prison. […] America has become a country that imprisons those it fails, blaming poverty, drug addiction or homelessness on individuals rather than recognizing and addressing the conditions that give rise to them. In California, more than 70 percent of women in prison are serving time for nonviolent, property or drug-related offenses. The 3,000 women*

in my prison are disproportionately poor and minority. Prison marks the separation in our society between the haves and the have-nots, between those who walk free and those of us held captive…. Betsy Ross sewed a flag that represented a vision of an equal and just society. And we, as Americans, pledge allegiance to a flag I sew, dedicating ourselves to "one nation, under God, indivisible, with liberty and justice for all." To honor this flag we must resolve to make America a country where all people can thrive.

Despite the slave-labor conditions under which Beverly sews the flag, it still symbolizes, for her and many others, something beyond (or perhaps, above) the sovereignty of the nation-state, "liberty and justice for all" – ***all***. Beverly does not enjoy the status of a citizen, like many others who work for slave wages in textile "sweatshops" around the world. Her status is alien, "illegal," un-representable in the symbolic order depicted by the flag she sews – outside the lines of "justice for all."

The symbolic order of the flag (sovereignty), "status" (the legality or illegality of persons), and labor are inextricably bound together as an aporia.

Recently on NPR's "Talk of the Nation" the topic was the previous day's national demonstrations against pending immigration legislation:

> "We have a caller on the line, Tara (from Las Vegas, Nevada)"
>
> "I was just calling because I used to support the immigrants who are here now becoming legalized – after these demonstrations – if they want to flash Mexican – carry Mexican flags – flash gang signs – they can take the proper steps to become legal immigrants – I'd have respected them more if they had burned the American flag because at least they're exercising their right of free speech – our government and the corporations have allowed them to be here for the last 25 years without taking action – and if they want to be Americans fine it was the American constitution that gives them the right to protest – their act is so disrespectful – and I'm not alone – a lot of folks – I told my senator, yeah, I want the tough restrictions – I want them to be sent back – if they are going to keep doing it without becoming legal – they can go to jail."

On the same day the AP reported:

> "House conservatives said … that prisoners rather than illegal farm workers should pick America's crops and denounced the use of Mexican flags by protesters. 'I say let the prisoners pick the fruits,' said Rep. Dana Rohrabacher of California, one of more than a dozen Republicans who took turns condemning a Senate bill that offers an estimated 11 million illegal immigrants an opportunity for citizenship."

Rohrabacher later claimed his suggestion was serious, not sardonic. "It is not in the interest of our country to legalize the status of anyone who is in the country illegally," he said. "We have a massive resource with prisoners. Prisons quite often are near agricultural areas." Even Democrats, like Diane Feinstein, who rejected the proposal because she claimed that farmers do not want "rapists and murderers" in their fields, near their families, did not bother to register alarm at the image it evokes and the historical parallel – the disproportionately high black prisoner population forced to pick the crops, black men and women in chains, under guard, laboring in the fields.

The paradoxical doubleness, the aporia of the public secret, is embodied in this anecdotal evidence. Such stories produce a montage of contradictions and connections between labor, the flag, prisoners, and immigrants; between symbolic labor and slave labor; between small "p" people and big "P" people. What sort of symbolic economy is required to sustain the status quo of the sovereign state of emergency? It seems to come down to a question of "security." The suffering and mental breakdown (and subsequent suicides) of tortured detainees in Guantánamo, the transformation of poor and racially dominated individuals into imprisoned bodies-for-profit, the exploitation and criminalization of immigrants, are all traded in the balance against the "security" and sovereignty of the state and a false image of safety and well-being in middle-and-corporate America.[39]

How could we not think that a system that can no longer function at all except on the basis of emergency would not also be interested in preserving such an emergency at any price?[40] The emergency requires that the poor, the prisoner, the immigrant, the refugee must be pushed outside the law and polity and thus reduced to the barest biological existence – "one that can be ignored and neglected, or extinguished with impunity precisely because it is the law that renders it expendable."[41] In her introduction to *Are Women Human?*, Catherine MacKinnon sums up, with razor sharp precision, the process by which the law and perception management collude in the public secret:

> *Before atrocities are recognized as such, they are authoritatively regarded as either too extraordinary to be believable of too ordinary to be atrocious. If the events are socially considered unusual, the fact that they happened is denied in specific instances; if they are regarded as usual the fact that they are violating is denied: if it's happening, it's not so bad, and if it's really bad, it isn't happening. The given status of certain people is seen as tautologous with, even justified by the deprivations of their human rights. Law often collaborates by making an unusual*

or extreme form of a common violation illegal, so that what is illegal almost never happens, yet the law appears to stand against the violation. Victims are thereby ideologically rendered appropriate to their treatment, the unequal treatment serving to confirm their ontological status as lesser humans. When nothing is done, the treatment and social status accordingly, confirm and create who one is. […] While disbelief and associated impunity rein, the violated are – systemically and effectively speaking – rendered not fully human legally or socially. When and where this denial is overcome and rights against the extreme and the normal are recognized, the treatment is defined as inhuman and the victims human.[42]

The public secret masks an oscillation between denial and amazement – amazement that such atrocities are "still" possible and denial of that which is apparently impossible to address. The injustices of the justice system, the existence of the prison industrial complex – its pervasive network of monopolies and its human rights abuses – are extremely well documented yet wholly submerged and repressed. Everyone knows, and knows they know, but then, "How could things be otherwise?"

Utopias

Utopias are non-fictional even though they are non-existent.
Fredric Jameson, "Politics of Utopia"

Jameson points out that, if utopia no longer has a social function, it is because of the

extraordinary historical dissociation into two distinct worlds, which characterizes globalization today. In one of these worlds the disintegration of the social is so absolute – misery, poverty, unemployment, starvation, squalor, violence, and death – that the intricately elaborated social schemes of utopian thinkers become as frivolous as they are irrelevant. In the other unparalleled wealth, computerized production, scientific and medical discoveries unimaginable a century ago as well as an endless variety of commercial and cultural pleasures, seem to have rendered utopian fantasy and speculation as boring and antiquated as pre-technological narratives of space flight.[43]

In his recent essay on the "Politics of Utopia" for the *New Left Review*, Frederick Jameson claims, "'the system' at its most stable is the best context for the imaginative speculation of the most powerless in resistance to it."[44] This certainly describes the relation of the prison industrial complex and its inmates. How, then, can prisoners, their families resist? How can we imagine a world without prisons? How can we imagine "a system in which punishment is not allowed to become the source of corporate profit? How can we imagine a society in which race and class are not primary determinants of punishment? Or one in which punishment itself is no longer the central concern in the making of justice?"[45]

Jane Dorotik, a prisoner at CCWF wrote,

A world that doesn't rely on prisons would require a culture shift and social, behavior changes. Our society is pretty much choked by fear and domination – and this mindset is simply magnified in prison. We need to shift toward an underlying culture of partnership and trust and away from a culture of domination. […] It's well documented that the incidence of violence is significantly decreased in countries that have highly developed social support systems – welfare, health care, etc. – until we as a society give up the idea of 'judge and punish' for a more humanitarian 'support, nurture and rehabilitate' [approach] we'll continue to build prisons. I think every member of society needs to be helped to have his or her needs met so that he or she can make a contribution that will be judged worthy by society. So… I think that we have to … help people to understand that there is a big difference between keeping society safe and locking up people who might have made a mistake – a lot of the mistakes that we lock people up for are societal mistakes. That is what we have to change.

Our most radical demand should be decarceration.

Jane Dorotik's suggested shift from a "culture of domination" to a "culture of participation" opens up a utopian imaginary. The fundamental premise of systems is that the one thing that cannot be challenged or changed is the system itself. The function of a utopian imaginary is to "reveal the ideological closure of the system in which we are somehow trapped and confined and thus prompt us to make the most radical demands we can possibly make on our own system."[46] To fulfill this demand for a culture of participation would transform "the system" beyond recognition and engender "a society structurally distinct from this one in every conceivable way, from the psychological to the sociological, from the cultural to the political."[47]

Our most radical demand should be decarceration. Decarceration means:

– disarticulating crime and punishment, race and punishment and gender and punishment;
– decriminalizing poverty, addiction, sex-work, and autonomous immigration;

– demilitarizing schools and neighborhoods;
– developing a justice system based on reparation and reconciliation instead of retribution and punishment, and a constellation of free community based drug, alcohol, mental health and domestic violence treatment programs;
– using the funding currently spent on prisons to establish job, living wage and community recreations programs;
– contesting racial profiling and other practices of social domination that result in race and class based disparities in arrest and imprisonment rates
– decriminalizing communities that have been criminalized because of their race and class;
– and finally, disallowing economic and for-profit relationships among policing and correction systems, transnational corporations, media conglomerates, guard's unions, the courts, and law-makers.

The "topological perforation" which is the ideological space of the prison "acts back" on the state, twisting and turning inside out, background to foreground – like an anamorphosis – the thing that make sense of that which it ruptures or obscures.

> *Only in a world in which the spaces of states have been thus perforated and topologically deformed and in which the citizen has been able to recognize the refugee [or prisoner] that he or she is – only in such a world is the political survival of humankind today thinkable.*[48]

Sharon Daniel
Film and Digital Media
University of California Santa Cruz

References:

[1] *Justice Now* is a human rights organization that works with women in prison and local communities to build a safe, compassionate world without prisons; http://jnow.org

[2] All quotes and stories by and about women prisoners in the body of the text were recorded or heard by the author and are incorporated in the online audio archive. Currently this archive is available at http://improbablevoices.net. A new, expanded site, titled Public Secrets will be launched in November, 2006, in the fourth issue of *Vectors Journal of Culture and Technology in a Dynamic Vernacular* at http://vectors.iml.annenberg.edu/

[3] My discussion of the "public secret" owes much to Michael Taussig's *Defacement: Public Secrecy and the Labor of the Negative* (Stanford University Press: Stanford, 1999).

[4] Walter Benjamin, *The Origin of German Tragic Drama*, trans. John Osborn (New Left Books: London, 1977).

[5] Michael Taussig, *Defacement: Public Secrecy and the Labor of the Negative* (Stanford University Press: Stanford, 1999).

[6] Ibid., p. 5.

[7] Ibid., p. 5.

[8] Katherine Hayles, "Narrating Bits," *Vectors: Journal of Culture and Technology in a Dynamic Vernacular, Issue 1* (Winter 05),http://vectors.iml.annenberg.edu/index.php?page=7&projectCurrent=Narrating%20Bits&projectId=6&issueCurrent=1

[9] "Perception management," Wikipedia: The Free Encyclopedia, http://en.wikipedia.org/wiki/Perception_management; accessed July 1, 2006.

[10] Tim Golden, "U.S. Says It Fears Detainee Abuse in Repatriation," *New York Times*, April 30, 2006, http://www.nytimes.com/2006/04/30/world/30gitmo.html?_r=1&th=&oref=slogin&emc=th&pagewanted=print

[11] Tim Golden and James Risen, "3 Prisoners Commit Suicide at Guantánamo," *New York Times,* June 11, 2006, http://select.nytimes.com/gst/abstract.html?res=F10812F739550C728DDDAF0894DE404482

[12] Giorgio Agamben, *Means Without End: Notes on Politics*, trans. Vincenzo Binetti and Cesare Casarino (University of Minnesota Press: Minneapolis, MN, 2000), p. 95.

[13] Michael Taussig, *The Nervous System* (Routledge: New York, NY, 1992), p. 18.

[14] Ibid. [12].

[15] Ibid., pp. 31-32.

[16] Ibid., p. X.

[17] Ibid., p. 20.

[18] Ibid., p. 21.

[19] Ibid. [11].

[20] James Sterngold, "U.S. seizes state prison health care. Judge cites preventable deaths of inmates, 'depravity' of system," *San Francisco Chronicle*, July 1, 2005, http://www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2005/07/01/MNGOCDHPP71.DTL; accessed July 1, 2006.

[21] Psychotropic drugs, however, are readily available and dispensed liberally as means of controlling behavior. There is a significant increase in prisoners with mental health disorders but the use of psychotropic drugs exceeds this demand and has increased since the ban on smoking was put in place. These issues will be addressed in detail via statements made by women in the expanded audio database *Public Secrets* in *Vectors Journal of Culture and Technology in a Dynamic Vernacular* at http://vectors.iml.annenberg.edu/, which will launch in November 2006.

[22] Catherine A. MacKinnon, *Are Women Human? And Other International Dialogues* (Harvard University Press: Cambridge, 2006).

[23] Ibid.

[24] Giorgio Agamben, *Remnants of Auschwitz: The Witness and the Archive*, trans. Daniel Heller-Roazen (Zone Books: New York, NY, 2002), p. 18.

[25] Angela Y. Davis, *Are Prisons Obsolete?* (Seven Stories Press: New York, NY, 2003), p. 15.

[26] Ibid.

[27] Michael Taussig, *The Nervous System* (Routledge: New York, NY, 1992), p. 9.

[28] Giorgio Agamben, *Means Without End: Notes on Politics*, trans. Vincenzo Binetti and Cesare Casarino (University of Minnesota Press: Minneapolis, MN, 2000), p. 25.

[29] The use of the term "blot" for anamorphosis comes from Slavoj Zizek, "The Hitchcockian Blot" in *Looking Awry: An Introduction to Jacques Lacan Through Popular Culture* (The MIT Press: Cambridge, 1992), pp. 89-91.

[30] Walter Benjamin, *The Origin of German Tragic Drama*, trans. John Osborn (New Left Books: London, 1977), p. 31.

[31] Giorgio Agamben, *Means Without End: Notes on Politics*, trans. Vincenzo Binetti and Cesare Casarino (University of Minnesota Press: Minneapolis, MN, 2000), pp. 40-41.

[32] Ibid., p. 41.

[33] Gilmore, qtd. in Angela Y. Davis, *Are Prisons Obsolete?* (Seven Stories Press: New York, NY, 2003), p. 14.

[34] Ibid. [31], pp. 104-5.

[35] Details come from the Indictment filed in US District Court for the Northern District of Florida, Tallahassee Division, Case 4:06-cr-00036-RH-WCS, Document 1 Filed 06/20/2006, http://www.cbsnews.com/htdocs/pdf/062106indictment.pdf

[36] Walter Benjamin, *Reflections*, trans. Edmund Jephcott (Schocken Books: New York, NY, 1986), p. 312.

[37] Steven Donziger, qtd. in Angela Y. Davis, *Are Prisons Obsolete?* (Seven Stories Press: New York, NY, 2003), p. 94.

[38] Under "three strikes," a person who commits a felony and has one previous "violent" or "serious" felony conviction (which includes burglary of an unoccupied dwelling, possession of a controlled substance, solicitation for prostitution, check-kiting etc.) is sentenced to twice the term prescribed by law for each new felony. If the person has two previous violent or serious felony convictions, he or she is sentenced to life.

[39] See Susan Willis, "Logics of Guantánamo," *New Left Review 39* (May /June 2006), pp. 123-131, for discussion of "intelligence" as prison labor and the "symbolic economy" of Guantánamo.

[40] Giorgio Agamben, *Means Without End: Notes on Politics*, trans. Vincenzo Binetti and Cesare Casarino (University of Minnesota Press: Minneapolis, MN, 2000), p 6.

[41] Eduardo Mendieta, Introduction to Angela Y. Davis, *Abolition Democracy: Beyond Empire, Prisons, and Torture* (Seven Stories Press: New York, NY, 2005).

[42] Catherine A. MacKinnon, *Are Women Human? And Other International Dialogues* (Harvard University Press: Cambridge, 2006), p. 3.

[43] Fredric Jameson, "Politics of Utopia," *New Left Review 25* (Jan/Feb 2004), p. 35.

[44] Ibid., p. 46.

[45] Angela Y. Davis, *Are Prisons Obsolete?* (Seven Stories Press: New York, NY, 2003), p. 107.

[46] Ibid. [43], p. 37.

[47] Ibid.

[48] Giorgio Agamben, *Means Without End: Notes on Politics*, trans. Vincenzo Binetti and Cesare Casarino (University of Minnesota Press: Minneapolis, MN, 2000), p. 26.

Inner City Locative Media: Design and Experience of a Location-Aware Mobile Narrative for the Dublin Liberties Neighborhood

Valentina Nisi, Dr. Ian Oakley, and Dr. Mads Haahr

Abstract

In this paper, we present the Media Portrait of the Liberties (MPL), a hands-on investigation of a new, digitally mediated form of narrative experience that makes extensive use of mobile computing technology. An urban neighborhood is a physical embodiment of a community's memories and history. Location-aware mobile narrative systems have significant potential when applied to urban spaces, especially spaces in disadvantaged areas. Such systems can empower communities by providing a forum in which they can express, recall, and celebrate the culture and history of their neighborhood, supporting perception of it as a cultural place as opposed to simply a space. Kluitenberg defines public domain as a social and cultural space characterized by commonly shared ideas and memories, as well as the physical manifestations that embody them. Following Kluitenberg's definition, the MPL renders the public domain as a tangible media artefact. The MPL is an evolving collection of historically inspired video stories adapted from written accounts of life in the deprived but culturally cohesive inner city area of Dublin, Ireland, known as "the Liberties." The stories are delivered to the audience on location-aware PDAs, and each story can only be viewed when an audience member is situated in the physical place where the story is set. The objective of the MPL is to provide viewers with a nuanced and evocative sense of place as they walk the streets of this striking neighborhood. The MPL's author-centric approach to community stories is designed to function as a story-catalyst for the local community. The approach offers them a starting point and the inspiration to take ownership of the project and continue to develop its collection by contributing as authors to an ongoing story database rendering a grass-roots history of the area. This paper describes the content capture, design, and implementation of the project, but focuses primarily on the results of a subjective user study conducted to gauge reactions to this novel media format. We conclude the paper by discussing the results of this study and speculating on future directions for this work.

Introduction

Why distribute a community's stories around the streets of its neighborhood? The answers to this question are numerous and cover broad intellectual, emotional, and sociological ground. The fact that stories are fundamentally valuable is beyond reproach. It is undeniable that stories form a universal mechanism for sharing information about ourselves and others, for imparting lessons, and for more frivolous purposes: to inspire and entertain. More seriously, stories and narratives also serve an important social function as a stimulus to discussion and debate. Furthermore, stories connect us to distant places and times and form a significant portion of not only present-day culture, but also the legacy that we will pass on to future generations. The important role that stories play in our lives has had the effect that new technologies are rapidly adopted, or even developed specifically, for the purpose of storytelling. Cinema is probably the most prominent example of this, but computer games, some of which now contain relatively sophisticated narratives, are an emerging contender for this title. In the Western world, it is easily arguable that the popularity of screen-based media has surpassed that of live performance (in the form of theater or oral storytelling). As a result, the vast majority of stories are now told away from the grungy physicality of the real world, and in familiar, sterile, two-dimensional landscapes composed of darkened rooms and glowing screens.

We believe, however, that that we are on the cusp of a technological shift that has the potential to alter our storytelling practices once again. Advances in the areas of mobile and ubiquitous computing, location-tracking systems, and wireless networking enable us to push stories beyond the screen and back into real space. By co-locating places and stories, we can create a rich synergetic experience of place, a complimentary merging of narrative and environment. By allowing our audience to see, smell, feel and hear a place, while simultaneously experiencing its stories and history, we can paint a rich and nuanced picture of this place. Samuel Smiles defines place as something "we rather feel than understand: an indistinct region of awareness" [1], and it is this abstract concept that we are interested in conveying. In the Media Portrait of the Liberties (MPL) project, we combine mobile wireless technology and the framework of locative media to construct a novel system that allows its audience to vividly experience a community's public spaces through the stories, anecdotes and memories of its local residents. We believe this represents a provocative pairing of new technology and the digital arts.

The Media Portrait of the Liberties (MPL) is a modular collection of anecdotal stories drawn from a disadvantaged Dublin inner city neighborhood called the Liberties. Characters and themes reported by our sources in the community provide a natural hyperlinked structure for these non-linear narrative segments. The narratives are displayed as short video clips on a location-aware handheld computer.

The story expressed in each video clip was taken from historical, literary, and word-of-mouth accounts of life in this area in the past. Each story also references specific streets, buildings, or courtyards in the Liberties and is only available for viewing when a user is in or close to these objects. For instance, a story describing the historical grandeur of a building can only be viewed when a user is standing next to its present-day ruins. Stories about local characters or family dramas can be watched only in the streets where the events described actually took place. Our investigations indicate that presenting this rich narrative content set in a particular place to users situated and physically immersed in that same place provides a vivid and evocative experience that encapsulates something of the "sense of place" described by Smiles.

Given its substantial scope, the development of MPL encompassed a number of diverse activities. A significant effort was involved in the collection, scripting, shooting and editing of the video clips that form its content. Beyond these standard production tasks, we also had to situate each piece of media meaningfully in the physical environment. Due to the fact that the media would be experienced in a distributed and fragmented fashion, we developed plots around multiple themes and characters that richly intersected with one another. To represent these thematic links, we created a simple information architecture that allowed users of the system to follow multiple paths through the library of clips, experiencing them in an order dictated not only by their physical path through the city, but also by the topics that caught their interest. On the technical side, we constructed location-aware display software for this content and, more challengingly, attempted to design an interface to seamlessly access the stories' complexity. Finally, we performed an extensive subjective user study of the system to gauge the reactions it provoked in its audience.

The extensive user study captured the reaction of a broad spectrum of audience members: local residents re-evaluated and reflected on their history while non-residents and tourists explored the area's past and developed interest and empathy towards a neighborhood and a community that is otherwise relatively inaccessible. The MPL project, through its author-, centered approach, enhances community life and local residents' perception of their neighborhood. It inspires locals to recall and share their personal anecdotes and stimulates tourists' and casual visitors' awareness and understanding of this disadvantaged area. The study of the local audience's reactions has highlighted the benefits and the future possibilities for such a story approach. In experiencing the MPL, local community members discovered new stories about their neighborhood and remembered anecdotes that relate the history of the area to events in their personal lives. The evaluation process often stimulated dialogue between community members and passers-by, demonstrating the MPL's function as a catalyst for enhancing communication. Furthermore, local residents were inspired to contribute to the story database with their own memories and to learn how to use technology to experience and create stories, eventually building a grass-roots historical and social database of the neighbourhood.

The remainder of this paper describes the steps and the lifecycle of this project from inception to completion, and concludes by distilling our analysis of the data collected during the user study to provide an initial set of design heuristics for future mobile location-aware narratives.

Methodology for Story Creation

Researching and Reconstructing the Story

The MPL content is a collection of stories based on the life of a community of people living in the same neighborhood. Factually based stories appeal to us because they are directly connected with what we perceive to be "real" events and history. Such stories can provide us with inspiration for our own lives, prompting us to recollect anecdotes and trigger personal memories. Like a spider web, real stories lead into each other; they connect characters and themes providing a natural hyperlinked structure that can be used as the basis for an interactive modular narrative.

While researching the content for the MPL, we made contact with members of the Liberties community, who contributed content to the project with enthusiasm: for example, local community member Charlie Hammond told us stories about the Poddle, a river that runs underground through the Liberties and was the second water supply for the city after the main river Liffey. The Poddle is the reason why breweries and distilleries, laundries, and weavers of silk and poplin flourished in the area, producing a labor-intensive and thriving industry. Local writer Mairin Johnston took us on a tour of the area and told us stories about her family moving into the neighborhood from Galway during the famine era. We interpreted the enthusiasm and participation of local people as a genuine sign of the desire of the community itself to share their sense of history through the project. Charlie commented in one of our conversations: "Social history is rich in this area. I believe it is important for this community to understand their own neighborhood." To start the content production, an initial set of twenty short stories were selected from Johnston's book "Around the Banks of Pimlico" [2], ranging from Johnston's family

stories to socio-historical anecdotes about the area.

Production Phase
The MPL stories were scripted and produced through a variety of methods according to their different characteristics. The stories ranged from ghost stories and descriptions of architectural changes in the area to individual portraits of local characters. In creating the audio-visual media segments, we used a mix of video, animation, and photographic media and a narrating voice that related the anecdotes in the first person (which coincides with thefirst-person narrative found in Johnston's book).

Film sets were staged around the Liberties area. Stories were re-enacted using costumes and settings inspired by the descriptions in Johnston's book. For example, the enactment of a traditional music session that took place every Sunday in Mickey Murphy's Yard during the 1940s brought together researchers and the film crew with local community members and actors. [Fig. 1] This episode created a vibrant atmosphere and connection between past and present, real time storytelling, and reinterpretation of the local past.

Figure 1. Set for the filming of "Mickey Murphy's Yard" story. Photo: Rob Bourke.

Irish traditional musicians played in the courtyard of the Pimlico cottages for an afternoon. Local people came along and engaged in the action, participating as local characters in the filming. The session itself was also an opportunity to chat informally with locals about the project and verify their enthusiasm for providing new content to the story collection, reviving memories, anecdotes, and a sense of pride of being from the Liberties area. A different kind of story, referencing buildings that do not exist anymore or particular events too complex to re-enact, was produced by using some of the material collected during the research, such as old photographs and watercolor sketches produced during the storyboarding process. Segments featuring another type of story, referencing ghosts and supernatural events, were produced through blue screening and digital effects. The varied methodology added expressivity and freshness to the media pieces and highlighted some ideas for how to develop a framework under which to guide the community members in the feedback collection phase, when they will be able to provide and produce their own stories to add to the collection.

The MPL Interface
In parallel with the production of the MPL content we also designed the interface through which we could deliver the stories to their audience. As a hardware platform we selected an iPAQ handheld computer, equipped with a GPS card to provide location awareness, and a large SD memory card on which to store the video material. The iPAQ is easily programmable and comfortably capable of displaying the rich multimedia content used in the MPL, and GPS is a standard technology for location-awareness. The choice to use SD storage to house the content, rather than have it delivered over a wireless network, reflects the infancy of these technologies in Ireland at the time. As we were primarily interested in the user experience of the project, we opted for the simplicity and reliability of local storage.

The MPL interface takes the form of an interactive map displayed full screen on the handheld device. To help users locate the story content on the map and orient themselves in the real space and in relation to the stories, we designed a series of graphical navigational aids as part of the interface. [Fig. 2] The navigational aids can all be switched on or off independently. The more aids are activated, the more the user is guided through the Liberties tour. With fewer aids chosen, the experience becomes more akin to a free exploration of the area where people can stumble upon story material unexpectedly. We describe the design and functionality of these interface elements in more detail below.

Map: The map is hand-drawn, but neatly labelled with street names. The minimalist hand-drawn style serves to distance the piece from other map-based interfaces (e.g., tourist guidebook applications or route finding software), while the street names are included to ensure the map remains a meaningful navigational aid. To present a reasonable level of detail, the map is larger than the screen of the handheld device, but can be scrolled simply by dragging the iPAQ stylus across the screen. Although this differs from the display paradigm found in much location-aware software (where the on-screen map is always centered on the user's current position), we feel it is appropriate for our project, which focuses more on whimsical exploration than efficient goal-driven navigation. By letting users scroll the map freely, we let them search the map for stories beyond their immediate vicinity.

Story markers: These indicate the position of each story on the map. They take the form of small high-contrast green dots. They are designed to stand out from, but not to obscure, the map.

Story icons: The story icons are the interface through which the audience activates video clips, and through which we display the links and inter-relationships

between the stories. They take the form of shrunken, representative frames extracted from the stories. They appear on the map under one of two conditions: either the user's position coincides with the story's location or the story is related to the last story viewed. In this second case, the story icon is displayed semi-transparently. Each icon also features additional information in the form of small markers along its rightmost edge. Three different markers are being used. A triangular play symbol indicates that a story is currently available for viewing. Selecting an icon marked in this way causes the video clip with which it is associated to play full screen, returning the user to the map upon completion. Video clips that have already been viewed are further marked with a "tick symbol" to indicate the "viewed" status. In addition to being semi-transparent, the clips related to the most recently viewed one, but not currently available for viewing because they are situated in an area of the map away from the user's current position, are marked with an icon showing a series of footsteps. If the user moves to the map location occupied by such an icon, its state, and graphical representation, changes to that of a currently playable icon. The intention is to give users the choice to follow particular themes, lending them a sense of control and providing additional structure for the piece.

Radar: The radar provides an overview of the map. It takes the form of a transparent grey area in the bottom right of the screen, which represents the total map area. A darker rectangle within it indicates the portion of the map currently shown on the screen. This adjusts automatically as the user scrolls the map. A small red dot indicates the user's current position, as calculated from the GPS readings. This radar view shares many similarities with those views designed for use in shared editor CSCW systems.

User position indicator: This indicator takes the form of a small semitransparent circle, which simply shows the user's current (GPS-derived) position on the map. If a user selects the position indicator using the stylus, a screen displaying all the stories previously viewed is displayed in the form of a list of story icons. Clicking on an icon displays the story once again, irrespective of the user's current position.

User Study Discussion

The process of storytelling always involves a story, a narrator, a medium, and an audience. To complete the project, a user study was designed to capture the audience response to the experience. We defined three broad audience samples: media experts, community members, and non-residents. The media experts were people with experience in digital media technologies from artistic, technical and / or educational angles. Within the community sample were people who were born and lived in the area, as well as people who moved to the Liberties at a later stage of their lives and considered themselves members of the community. For the non-residents category, we sampled people from outside the Liberties neighborhood, ranging from Dubliners to native Irish people and foreigners, some of which were tourists, others foreign nationals living in Dublin. The broad sampling was intended to capture a very wide variety of audience members and identify parameters for more focused future investigations. The methodology for evaluation involved observation by shadowing the participants in their tour of the area, recording their comments and engaging in a semi-structured interview at the end of the experience. [3] We studied seven cases for each audience category. Their comments were recorded through a wearable audio recorder as they were touring the Liberties neighborhood with the iPAQ in search of stories. Three users from each group experienced the Liberties project on their own while the other four toured in pairs resulting in a total of four tours per category. [Fig. 3] This method was used to investigate what kind of exchanges among audience members were prompted on location. As the people were walking around the streets experiencing the stories, we observed them at a distance, trying not to influence their choices, recording their trail through the Liberties and taking notes about their behavior. At the end of the tour, the audience members were assembled for a focused conversation about their experience with

Figure 2. Graphical interface screenshots showing the map, the radar, the green dots, the story icons, and their related symbols.

the MPL.

Analysis of the results showed a high level of interest in and engagement with the project by all participants. Audience members from different user groups demonstrated different foci. The next section describes the issues brought up by each audience group and the three main categories that emerged from the collected data.

Figure 3. People experiencing the MPL as a pair.

Community Reaction

Community members were selected from the "Living Heritage" class organized by the local community centrr of Saint Nicolas of Myra on Carman Street, in the heart of the Liberties. The experience of following local people around the Liberties was very different experience from observing audience members who were not residents in the neighborhood. People on the streets had a very friendly attitude towards the users that they recognized as community members. Conversations with passers-by would often start spontaneously, with topics ranging from questions about what they were doing to updates on local news and events happening in the neighborhood. The Liberties is a disadvantaged inner city area, and it was clear that both the authors and audience members who are not native to the area were not able to relax as much, even if they still enjoyed the overall experience.

Some of the community-sampled participants were born in the area. Their ancestors were rooted in the Liberties for at least three generations. All of them remembered the visits to the dispensary officer in South Earl Street Health Centre, a central character in one of the clips. People remembered him and told us how he was still performing his job with the same rude manners portrayed in the story appearing in the MPL and how everybody hated going up to him to collect their prescriptions. Finding a character the audience members could relate to in real life released a sense of confidence and achievement in the participants and pulled them right into the story, connecting the anecdote and the history of the place to their actual lives. Another evocative story on location was embedded in Braithwaite Street: two audience members' parents used to live on that street and knew the family of the man portrayed in the anecdote. At one time, he was a familiar face in the Liberties, walking the streets selling coal from a horse-drawn cart. Two participants, Liz and Meriel told us that when they were children they used to play in the shed where he stored the coal, even though it was dirty and full of rats. Other users also recalled him shouting "Coal" as his horse and cart criss-crossed the Liberties.

When returning to the San Nicolas of Myra community center for the focused discussions, members of the "Living Heritage" class would spontaneously join the conversation. Stories were volunteered about the poor conditions of the area in the past, and how men used to run to the pubs and bars as soon as they cashed in their salary; how women were not allowed to enter the pubs until recently and used to have to ask a man they trusted to go to retrieve some of their husbands' money before it was all spent on drinks; how people from the area still know today which houses originally belonged to the Guinness workers and which to the Jacobs factory workers, despite the fact that the Jacobs biscuit factory is not located in the area anymore and Guinness now employs very few Liberties residents. These sessions clearly indicated the interest of the community in participating and contributing to MPL expanding the story database with old and new anecdotes about their neighborhood.

Non-Residents Reaction

The non-residents showed a variety of reactions to the MPL. A general comment was that the experience was interesting because it let them roam and explore an area that they would have never have got to know otherwise. The Dublin Liberties is a famous inner city neighborhood, well known for its disadvantaged conditions, and despite its great history, people would not spontaneously venture into this area. The comments showed the potential of the MPL for encouraging an alternative type of tourism, geared towards areas not marked by the usual tourist trails. Many enjoyed listening to stories that would tell them about the origins, the old architectural structures, and the socio-historical conditions of the Liberties; stories about the Courthouse of the Liberties; or the Brabazon family, descended from the Lords of the area. Some of the non-resident audience members expressed a desire to know specific dates and facts about striking local monuments such as the statue of the Jesus on Gray Street. John Gallagher, a local community member, was present on location when Oscar, a Cuban currently living in Dublin, made this comment and was able to answer the question immediately. This example and other similar episodes highlight how the system not only prompts memories and anecdotes about the neighborhood in local people but can also stimulate a dialogue between locals and visitors as they walk the streets of the neighborhood with the handheld device.

Some non-residents did not connect to local story characters, such as Honora and her family who moved around the Liberties from house to house and job to job. They found those stories too disjointed to be able to synthesize them as a whole. We attribute such reactions in part to the fragmented nature of the narrative, but have identified a number of other possible reasons for this experience. For example, not being from the area and therefore not being able to connect the story fragments to similar stories that might have occurred in a relative's life was also an important factor. The lack of a cultural reference frame may have diminished non-residents' interest in and capability to relate to these kinds of story fragments. A few users originally from other areas of Dublin realized that similar stories existed even in their own neighborhood. This cultural reference would spark interest in the adventures of the Johnston family struggling through economic highs and lows, moving premises around the neighborhood every few years, and constantly dealing with the everyday problems of health and accommodation.

Media Experts Reaction

The respective skills and knowledge of the media experts led them to focus on different aspects of the MPL. Media experts with technical background focused their attention on the GPS performance and software capabilities. Some multimedia experts found the user interface and the iPAQ platform distracting from the story experience (even if it was simple enough to use easily). One reason for their distraction was the fact that they were engrossed in understanding the interface issues and unfamiliar with the Liberties neighborhood, so that the navigation of the real space was a demanding task. Rainer, a German writer with multimedia experience, felt the stories were too fragmented to form a coherent narrative structure, based on his more traditional understanding of a narrative point of view. He reported that the characters lacked motivations and psychological depth. Users more familiar with the fragmented nature of most interactive narratives found the fragments pleasing and reported that the relationships between the fragments were engaging and motivated them to seek related story fragments. We can infer from these comments that the audience engagement and relative success of the non-linear interactive aspect of the stories is highly dependent on the participants' background and disposition towards alternative story structures, compared to more traditional forms.

Some users observed that the link between a story and a specific location was not always obvious. Audience members from other categories also reported this observation, but the media experts were able to articulate a more complex analysis and to suggest solutions to this phenomenon. During the observation we noticed that due to the GPS resolution (approximately 10-15 meters), the audience members were not always situated in the exact physical location when a story become available to them. Also, their position in relation to the space varied according to which side of the street they walked on, which way their gaze was directed, and whether they stopped to view story fragments, or kept walking. Furthermore, the audiovisual media fragments did not always provide precise pointers as to their setting.

Discussion and Findings

In our study we targeted three main aspects of the work: the story design and content; the interface between the stories and the place; and finally, the audience feel for the technology. Mirroring this focus, we have grouped our data in three main categories of comments: observations regarding the stories, the interface, and the technology used.

Story Design

The modular structure of the story collection evoked different responses. Some users were open to challenging their own notion of traditional narrative structure and enjoyed the fragmented nature of the narrative; they found it engaging and were motivated to find more story parts to complete the picture. They often compared the experience to puzzle solving or a treasure hunt, seeing their role as that of explorers or detectives in search of clues. Other users found the fragmented nature of the narrative confusing and frustrating. These users expressed a desire to be able to experience the fragments in a more linear, traditional way. A timeline was proposed, in order to facilitate the experience of the stories in chronological order. There were also comments about character development. The main suggestion for strengthening the characters was to have them introduce themselves and contextualize their position in the Johnston family, i.e., informing the audience in which relationship they stand to the narrator. In fact, this was the approach that was actually implemented in the project. The narrator, who adopts the point of view of Mairin Johnston, the last surviving member of the Johnston family, talks in the first person and specifies her relationship to each of the characters. For example, "Honora, my great, great, grandmother used to live in Pimlico…" Based on the users comments, this technique seemed to be insufficient for describing the complex web of the Johnston ancestors who feature in the story fragments. Furthermore, the relationships among stories were not obvious to everybody. Suggestions to strengthen these links ranged from displaying trails on the map in order to highlight continuity between stories' themes, to using the narrator for explicitly making connections with other stories and passing on suggestions as to where the audience should go next to collect related stories. Additionally, as briefly mentioned in the media expert section, people from outside the neighborhood did not always find the story obviously linked to its relative location. One suggestion was to start each video clip with an image of the location to which the story relates, instead of having the location visualized somewhere in the mid-

dle of the clip, according to the demands of the story being told. Another one was to use the narration to direct the audience's gaze in the appropriate direction. For instance, stories could commence in the following style: "Can you see the red brick building opposite South Earl Street no 8? That used to be the local Health Centre." By explicitly naming and describing the important locations, audiences would familiarize themselves with the setting before the beginning of the story, without missing out on the visuals or feeling confused about what they should be looking at.

The stories were portrayed in audiovisual format. People generally enjoyed the visuals and the mixed media style composed of re-enacted stories, old pictures showing the area as it used to be, and watercolor sketches extracted from the storyboard. [Fig. 4]

Figure 4. Frames from two different stories' video-clips.

People often commented that they had to look at the video twice. The richness of the media combined with looking around the real place proved to be overwhelming because they had to make contact with the surrounding architecture and simultaneously identify the location to which the story related. However, only one person reported that he would have preferred to experience the MPL just as audio narration. This was a positive and encouraging result in respect to our choice of portraying the anecdotes in audio-visual format since the majority of similar locative media projects do not include video material and we had chosen to challenge the audio-only format, spending a great amount of time and effort in producing the stories visually.

The audience also showed a positive reaction to the different types of voices cast for the narration. Different users connected with one narrator more than another, to the point of really not enjoying some stories because of the narrator's voice or accent. These comments highlighted the importance of attention to the artistic quality of the work in parallel with the interaction and interface design choices.

Figure 5. Handheld device in one of the Liberties story locations.

Interface Design

The interface was generally reported to be easy to understand and use. [Fig. 5] The map had to be manually scrolled, which some users found distracting or confusing. This was especially the case when the user position was not visible on the map shown on the screen. One suggestions was to automatically re-center the map around the user. However, most of the users appreciated the manual scrolling, because it allowed them to explore the whole area and look for related stories that were not located in the map portion shown on the screen. The navigational aids, such as the radar view and cursor indicating the users' position on the map according to the GPS readings, were also reported as useful and easy to understand. The markers that indicated the presence of the stories (the green dots indicating story presence in the area and icons indicating stories video clips) prompted a range of responses. A frequent comment was that the dots showing story locations on the map could have held more information. For example, dots of different colors could indicate whether stories had already been viewed, as many people were unable to remember which stories they had already seen, even when they returned to a previously visited location. The icons that appear on the map to point out story availability were often considered as cluttering rather than useful information, limiting the visibility of the map and being of little descriptive value. The majority of the users commented that they would have liked to be able to switch off the icons in order to be able to see the map more clearly. However, one user reported that he really enjoyed the icons' richness, and found them colorful and pleasant.

Some users suggested that pre-tested trails could be added to the map in order to encourage thematic tours or allow for following a specific character. Also proposed were time-based trails, so that people could choose a path according to the amount of time available to them.

The Technology
The technology used for the MPL (GPS-enabled iPAQ and the Pimlico custom-made software platform) proved to be both simple to interact with and reliable. This was important since a significant portion of our target audience had limited experience with computer technology and was expected to be reluctant to engage with the project for that reason. The simple interface we developed played a considerable part in the project's success. The choice of an iPAQ for the experience was a good one. As a miniature portable cinema screen, the iPAQ delivers good quality audiovisual media that facilitated engagement with both the audio narration and the visual interpretation of the story.

The fact that locations were not always immediately recognizable can only be partly attributed to the resolution of the GPS technology. Specific filming and narrative techniques (as explained in the section on the story design) could be combined with technologies offering more accurate localization, such as Bluetooth beacons or RFID tags, to ensure that stories could only be retrieved in the exact locations to which they related.

The smoothness of the technology performance on the hardware and software side made it easy for most audience members to focus on the stories. Understandably, people unfamiliar with the area had more difficulties. Rainer and Sara, a German and an American who had been living in Dublin for about six months, found it hard to navigate around the new area, simultaneously relating to the stories and the real locations, and coordinating where they had already been with where they wanted to go next.

It is interesting to note that both media experts and non-residents at times would become engrossed in or distracted by the system, while the Liberties community members focused on the content more easily despite being among the less computer-literate users; they paid little attention to the technology, using it simply as a tool for retrieving the stories.

Conclusions and Future Work

By means of this first broad user study we established that the project succeeded in enhancing a neighborhood space by making stories about the area available to the public in the places in which they happened. Through the mobile location-based narrative system, place and narrative content were successfully coupled. As an indication of the overall success of the MPL experience, we can confidently state that all people who participated in the user study confirmed that they would like to have similar experiences available in other cities or in their own neighborhood. They generally preferred the project to a guided tour as they had the freedom to choose what to explore, where to go next, and how long to spend in each location. Most people preferred it to a book guide because of the ease of use and the fact that it encouraged them to walk around the streets of the neighborhood in order to access the stories. It is also worth mentioning that the disadvantaged conditions of some parts of the Liberties makes guided tours unlikely to happen in the area.

Most users agreed that the MPL experience added atmosphere and warmth to the neighborhood, and the fact that the stories were experienced in the place were they once occurred did help achieve a sense of immersion in the stories in general. A majority of audience members felt completely in the experience, forgetting the time factor and the fact that they were being followed as part of the user study procedure. Audience members reported that they moved from one story to another, from one location to the next, immersed in the experience and interrupting it only because of technical problems (such as the GPS inconsistencies or battery shortcomings). We read these reports as signs that the MPL functions as an immersive experience.

For community members, in particular, the experience was twofold. On the one hand, they were able to discover new stories and anecdotes about the history of their neighborhood, a process they found extremely rewarding. On the other hand, they were prompted and stimulated to recollect and tell their own stories about the area. Furthermore, on several occasions, conversations and storytelling among audience members and locals were initiated. Based on these preliminary responses we can see that the project successfully functions as a catalyst for community awareness and the recollection of individual memories that could comprise a rich social history.

The stories, in the form of cinematic narratives, were highly appreciated even though they were sometimes perceived as overwhelming to absorb in combination with the complexity of the physical environment, the color and atmosphere of the surrounding cityscape. This problem was usually overcome when people looked at the video more than once or repeated the tour. The interface design was generally felt to be intuitive and easy to use. The navigation aids were all useful, but the dots and icons indicating story availability could have been more informative to avoid an involuntary return to already visited locations.

This first broad and detailed user study identified and explained major strengths and weaknesses of the work. It is clear that the MPL approach has potential for enhancing spaces, transforming them into something richer for both community members and more casual

visitors. A strong, positive feedback from the community itself showed the project's potential for further development of community storytelling and the recollection of memories by local residents.

The work suggests likely directions for further investigations in location-based mobile story systems for urban spaces. We are currently carrying out a second user study involving community members with strong links to the area, Dubliners, and foreigners living in Dublin. In this second study, we are looking for similarities and differences in the audiences' experiences, for example, how people from a city react to mobile narratives about their own city neighborhoods. The findings will highlight further potential and future directions for mobile, location-based story systems for urban spaces, transforming spaces into places through uncovering their hidden stories.

Acknowledgments

The authors wish to thank all the actors, narrators, musicians and everyone who helped in the production of the media story video clips. Thanks to Rob Bourke for the pictures of Mickey Murphy's story set. We are particularly grateful to the Irish Higher Education Authority (HEA) for funding this work via the Context-AwaRe Media Environment for Narrative (CARMEN) project, a collaboration between Media Lab Europe (MLE) and the Distributed Systems Group (DSG) at Trinity College Dublin.

Valentina Nisi
Distributed Systems Group
School of Computer Science and Statistics
Trinity College
Dublin 2
Ireland
valentina.nisi@gmail.com
www.valentinanisi.com

Mads Haahr
Distributed Systems Group
School of Computer Science and Statistics
Trinity College
Dublin 2
Ireland
mads.haahr@cs.tcd.ie
www.random.org/mads/

Dr. Ian Oackley
Smart Interface Research Team
Electronics and Telecommunications Research Institute
161 Gaejeong Dong, Yuseong Gu, Daejeon, 300-700, Korea
ian@etri.re.kr
www.whereveriam.org/work

References:

[1] Tacita Dean and Jeremy Millar, *Art Works: Place* (Thames and Hudson: London, UK: 2005)

[2] M. Johnston, *Around the Banks of Pimlico* (The Attic Press: Dublin, Ireland, 1985)

[3] D. Silverman, *Interpreting Qualitative Data* (Sage Publications: London, UK, 1993; Thousand Oaks: New Delhi, 2001)

Bibliography:

Blast Theory, http://www.blasttheory.co.uk/; accessed Aug. 9, 2005
CARMEN, http://www.dsg.cs.tcd.ie/?category_id=-35; accessed June 21, 2004
Cardiff, J., http://www.abbeymedia.com/Janweb/index.html; accessed Aug. 7, 2005.
Davenport, G. and Murtaugh, M., "Automatic Storytelling in the shifting sand of story," *IBM Systems Journal N. 46* (1997)
Dean, T. and Millar, J., *Art Works: Place* (Thames and Hudson: London, UK: 2005)..
Hight, J., "Narrative Archeology," http://www.xcp.bfn.org/hight.html; accessed June 6, 2005.
Lane, G., "Urban tapestries: wireless networking, public authoring and social knowledge," *4th Wireless World Conference*, University of Surrey, Guilford, UK, July 17-18, 2003.
Johnston, M., *Around the Banks of Pimlico* (The Attic Press: Dublin, Ireland, 1985)
Mixed Reality Lab, Uncle Roy All around you, http://www.equator.ac.uk/index.php/articles/619; accessed Aug. 9, 2005
[Murmur], http://murmurtoronto.ca/about.php; accessed Aug. 5, 2005
Nisi, V., Haarhr, M., "Weirdview: Interactive Multilinear Narratives and Real-Life Community," *Crossings: eJournal of Art and Technology, Issue 4.1*
Rokeby, D., "Transforming Mirrors: Navigable Structures,". http://www.interlog.com/~drokeby/mirrorsnavig.html;, accessed on June 21,st 2004.
Rueb, T., http://www.terirueb.net/; accessed Aug. 7, 2005
Ryan, M.L., "Cyberspace, Cybertext, Cybermaps," http://www.dichtung-digital.com/2004/1/Ryan/
Silverman, D., *Interpreting Qualitative Data* (Sage Publications: London, Uk, 1993; Thousand Oaks: New Delhi, 2001)
Wallace, M., *Modern Theories of Narrative* (Cornell University Press: Ithaca and London, 1986)

Redefining the Basemap

Alison Sant

Abstract

Current collaborative mapping projects using locative media technologies have often overlooked the conventions of the base map as a site for reinvention. Although these projects are ambitious in their aim to propose alternative organizations of urban space through the way it is digitally mapped, they remain bounded by datasets that reinforce a Cartesian and static notion of urban space. This paper questions the methodology of the base map as it is utilized in these projects, and proposes alternative approaches for mapping the city. Specifically, it looks at the city as a space of events, defined by the ways in which it is used rather than the orthogonal geometry by which it is constructed; and highlights several key examples from the history of urban planning and art practice that provide models for such alternative mapping strategies. By focusing on the limitations of the base map, I hope to provoke new ideas for these emerging projects.

Collaborative Mapping

As the technologies of locative media develop, they have engendered a series of projects that utilize GPS (Global Positioning Systems), wireless networks, and mobile technologies to augment space with its digital double of media annotations. Among these, collaborative mapping projects have proposed to use location-sensing technologies to create a shared interpretation of urban space. Admirably, they offer tools with which to gather multiple perspectives of place – escaping the margins of tourist guidebooks and visitor maps – to enable a collective memory in which, in the words of Giles Lane, "ordinary citizens embed social knowledge in the new landscape of the city."[1] As the strategies of this vision are defined, the code is written, and the geographic data sets are collected, it is crucial that we examine the strategies of mapping itself; including not only what is mapped but how.

Figure 1. *Urban Tapestries* mobile phone interface. Photo: John Paul Bichard. © Proboscis 2004. http://urbantapestries.net

Figure 2. *Urban Tapestries* PDA interface. © Proboscis 2003. http://urbantapestries.net

Many of the first forays into collaborative mapping projects, including *Urban Tapestries*[2] [Fig. 1, Fig. 2] and *PDPal* [3], layer annotations upon common base maps. These base maps are conventional street grids analogous to the information displayed by a Google Map or a MapQuest search.[4] They draw from common digital data sets, such as the U.S. Census Bureau's TIGER databases,[5] to represent the city. Based on user queries, maps that depict static geographic landmarks including road systems, transit routes, block plans, and popular destinations are produced. Undeniably, this version of the base map is a common reference. The spatial hierarchy of the street map is reinforced by the daily practice of navigating a new city, finding a subway stop, or an unfamiliar address. However, embedded in these

everyday references is a set of assumptions that order our perceptions of physical space. As Geographer Dennis Cosgrove describes, "Cartography acts not merely to record the various ways that the city is materially present, but as a creative intervention in urban space, sharpening both the physical city and the urban life experienced and performed there."[6] Although many collaborative mapping projects undermine their own base maps by layering them with collectively defined concepts of space; including participants' emotions, itineraries and memories, these annotations are inextricably linked to the predefined foundations of the map they overlay.

In its 20th-century configuration, the base map is a purely geographic categorization of urban space, defined by the Cartesian coordinates, the road system, and the block plan.[7] As a pedestrian tool, it provides a means of orientation as a way-finding device, listing street and district names, landmarks, parks, etc. It also has a regulatory function, describing property lines and zoning boundaries. Like any map, the contemporary base map inscribes a conception of the landscape. Jean Baudrillard's adage that "it is the map that precedes the territory"[8] is especially relevant. The cartographic conventions of the base map are an expression of a singular notion of urban space – one that favors the street over the route, the static over the temporal, and the formal over the subjective. As locative media projectsix are created that build upon the datum of common base maps, they are structuring a collaborative notion of space within this predefined conception of the city.

Moving Beyond the Grid

As locative projects seek new ways to interpret the landscape through collaborative mapping, there is an opportunity to promote an alternative to the convention of the base map that avoids reinforcing our current notions of cartography. Towards this end, there are some important questions to consider that may help to define potential directions for these projects by reflecting on the modalities they omit. Firstly, can we consider mapping the city through its use patterns, rather than illustrating it as an assembly of static landmarks? Is it possible to invert our notion of the city to foreground the fluctuating patterns of occupation and abandonment? Is it possible to repopulate the map to emphasize the rhythms of urban life rather than just the spaces in which they occur? Can we use wireless technologies to reflect back on themselves, revealing the emerging hybrid landscape of the material and the "Hertzian,"[10] as WiFi nodes are installed, wireless devices deployed, and adhoc networks [11] formed? Finally, how should we associate the ephemeral events of the city in order to understand them as an evolving set of relationships?

Historically, urban theorists have envisioned the city as a space that is constructed through the patterns of its occupation. In Kevin Lynch's seminal book *The Image of the City,* published in 1960, he proposed that we understand urban space through the construction of mental maps. These maps are formed by our experiences of navigating urban space, including the temporary events that activate the life of the street. Lynch describes "Moving elements in a city, and in particular the people and their activities, are as important as the stationary physical parts […] While [the city] may be stable in general outlines for some time, it is ever changing in detail."[12] More radically, Michel de Certeau proposed in his 1984 book *The Practice of Everyday Life* that the street is a place defined by urban planning but transformed into a space through the act of walking. He suggests that "space is composed of intersections of mobile elements. It is in a sense actuated by the ensemble of movements deployed within it. […] In short, space is a practiced place."[13] Michael Batty, in his 2002 essay for *Environment and Planning*, argues the need for a temporal emphasis in urban theory, analyzing the dynamics of urban change. He poses the question, "Is it possible to conceive of cities as being clusters of 'spatial events.'"[14] The interpretation of the city, articulated by these and other scholars, implies the development of an urban cartography that is generated by the shifting patterns of use rather than the stationary references depicted in conventional base maps.

Several key examples of alternative mapping techniques, in the history of urban planning and art practice, may inform the development of contemporary cartography. Although they are not templates for current mapping tools, they provide provocative precedents for redefining the base map. Specifically, they offer methods for representing the ways in which the city is traversed. The mobile is emphasized over the stationary in these maps, offering a way of understanding the city as a temporal system. In addition, the contours of the city are rendered through the routes of its inhabitants, inverting the standard visualization of a path plotted over the street-map used in current mapping software like Mapquest and Google Maps.{15} Ultimately, the geographic logic of the map is put into question, framing the experience of urban space according to a system of relations, rather than one's position in the urban grid.

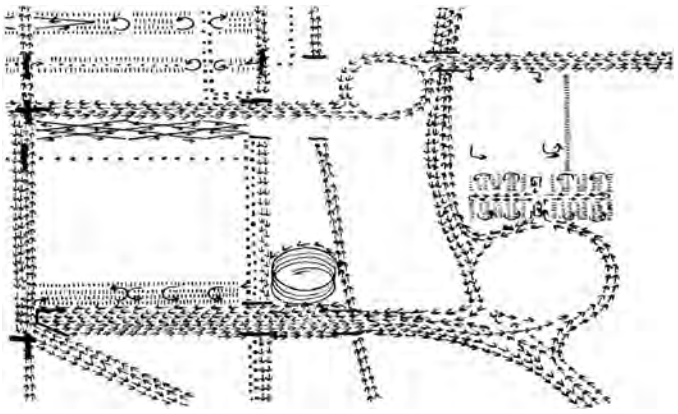


Figure 3. Louis Kahn's diagram of existing traffic movement for his Philadelphia Planning Study.[16]

Route

In 1953 Louis Kahn created a series of drawings illustrating traffic movement in Philadelphia.[17] [Fig. 3] Arrows, dashes, and crosses each mark the path and speed of cars, buses, trucks, and streetcars with varying speeds and destinations. However, the physical infrastructure of the city is not depicted. Rather, the street grid is only implied as a reversal of the use patterns of those who travel through it. The physical image of the city is dematerialized in favor of flow, speed, and movement. This inversion of space is repeated in Bill Hiller's Axial Map of Greater London [18] [Fig. 4], in which the map represents the trajectories of movement through the city by drawing an axis between one spatial event and the next. Hiller's map reinforces a subjective rendering of the city, basing its form on urban features like sight lines and patterns of occupation.

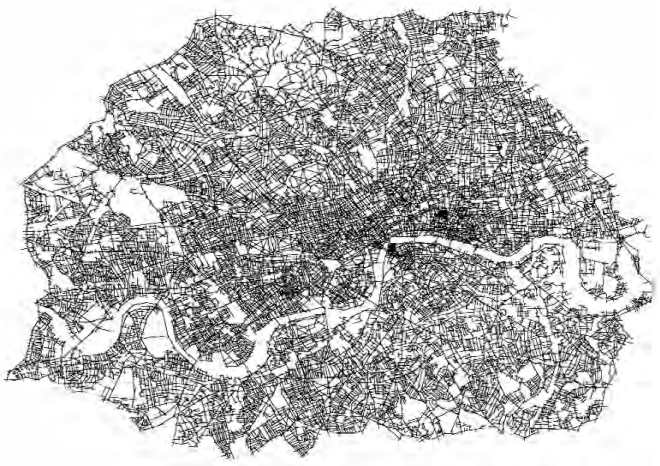


Figure 4. Bill Hiller's axial map of greater London.xix

Several contemporary projects parallel this logic while making use of locative technologies, such as GPS devices, to track one's trajectory through the city. *Amsterdam Real Time* [20], created by Esther Polak and the Waag Society, plotted the daily itineraries of sixty volunteers through Amsterdam over several months. Compiled into a collective map, the form of the city can be read through the accumulation of lines, articulating the curve of the urban plan and common thoroughfares. Sites that were frequented by the participants became worn on the map, brightening with frequent use, yellowing, and then turning red. This technique reoccurs in *Cabspotting* [21] but in this case focused on the exploration of transit routes. Currently under development by Scott Snibbe, Amy Balkin, and Stamen Design in collaboration with the San Francisco Exploratorium, *Cabspotting* traces the patterns of cabs as they travel through the San Francisco Bay Area, creating time-lapse maps that reveal the daily rhythms of the city. For example, some articulate the ebb and flow of the commute, while others represent the speed of the cabs – tracing their route with a line that turns from white to red as it transitions from downtown areas to the highway.

These maps, however, do not completely break with the hierarchy of the base map. The majority of them adopt the plan view instead of experimenting with alternate projections, such as the panoramic, horizontal, or three-dimensional perspectives that would emphasize the subjective nature of the route.[22] One exception is *Flycab*, where the open-source programming environment of *Cabspotting* has been used by artist Tomas Apodaca to generate a three-dimensional view. In addition, although the route is described with a series of symbols or traces, these markings do not imply the occupations of space as dramatically as they could. For example, 16th-century European maps attempted to magnify urban life by illustrating ships sailing into harbor, pedestrians on the streets, or carriages on the roads. They avoided strictly scientific surveys in favor of a loose depiction that described the nature of urban life rather than the delineation of urban space.[23] As the base map becomes repopulated with the dynamics of urban movement, can some of these historic techniques be reinterpreted? Could GPS tracking be used to amplify the real-time patterns of the city, in order to describe spatial events such as a parade or other gathering? For example, the volume or pitch of ambient audio could suggest patterns of density.[24] Enlarging everyday dynamics of urban space through the device of the map would perhaps compel us to maneuver through the city differently – being drawn or repelled by the ephemeral events that shape it.

The above examples, however, create a unique cartographic precedent by activating the route as a central generative device for mapping urban space. These maps are dynamically shaped by the ways in which the city is exploited by the people that traverse it. As new models of collaborative mapping are created, could they incorporate base maps that visualize the city as a temporal system characterized, as Batty suggests, by duration, intensity, and volatility? This view implies that the base map and the annotations layered upon it emerge from the way in which the city is inscribed through its daily patterns.

Typology

The Situationist maps, including Guy Debord's *Naked City* [Fig. 5], present the most radical departure from the grid. In reaction to the rational city models embraced by Parisian postwar planners in the 1950s, he and his colleagues co-opted the map of Paris, reconfiguring the experience of the city through its authority. [25] By manipulating the map itself, they intervened in the logic of the city, constructing an alternative geography that favored the marginalized, and often threatened, spaces of the urban grid. Torn from their geographical context, these areas were woven together by arrows inspired by the itineraries of the drift or "dérive." These "psychogeographic" maps proposed a fragmented, subjective, and temporal experience of the city as opposed to the seemingly omnipotent perspective of the planimetric map. As mapping is used as a tactic to bring together personal

narratives about urban space, the Situationist maps provide a useful example of visualizing a subjective view of the city.

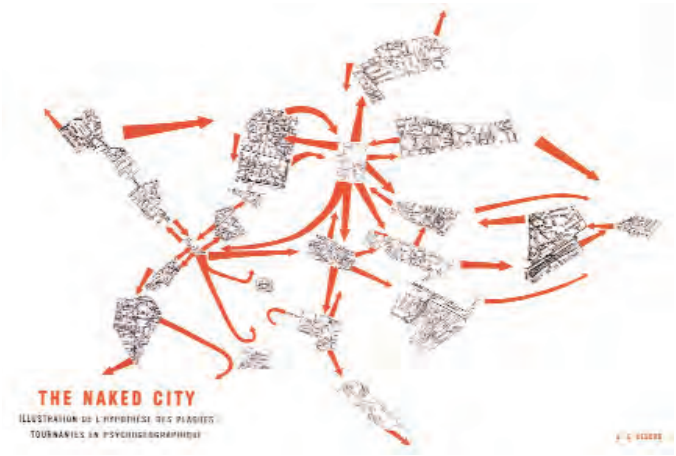


Figure 5. Guy Debord's 1957 map "The Naked City."[26]

The central problem with these maps is not in the way in which they confront norms of cartography, but the duration to which they are bound. The ephemeral nature of psychogeographic space meant that these sites could quickly shift through the pressures of development. The Situationist maps in turn become an archive of a specific moment in the life of the city. However, if these maps incorporated time, they would be able to show the migration or disappearance of these psychogeographic spaces, highlighting and critiquing the urban trends that were / are shaping the city.

Although the Situationists most likely regarded these maps as a record of the drift and a means for provoking new tactics for inhabiting the city, they also represent a valuable schema for creating new forms of cartography. These maps uniquely propose a networked model in which spatial events are abstracted from the grid and linked according to their typology. As databases form the engines of the contemporary base map, the information they contain may be retrieved in multiple configurations, allowing for a range of methods for visualizing the space of the city. The vocabulary of geo-spatial metadata behind the contemporary base map should be expanded to include a broader set of terminologies, allowing for new interpretations of the urban landscape. For example, querying space according to ambient phenomena such as its emotional associations or pollution levels.[27] As suggested by Kevin Lynch, visualizing urban space as a montage of typologies may in fact be closer to the fragmented way in which we create our own mental maps. Perhaps we can begin to use database driven maps to understand place within a system of relations determined by their relevance to our queries, rather than their geographic location.

Flux

Wireless networks and mobile devices are radically reforming our contemporary notions of urban place. As the traditional architectural definitions of public and private are blurred by the infiltration of portable electronics and the invisible edges of wireless connectivity, the dynamics of the urban environment grow progressively more complex. Although they are not physically obvious, these varying boundaries have profound implications for our notion of the space of the city. They suggest a changing model of urban reference that is modified not only by patterns of communication, but also by zones of connection and disconnection. Mobile phone connectivity, WiFi access, and adhoc networks generate a series of boundaries that continually reconfigure urban space. They may create density in public spaces by overlaying free access [28] or marginalize urban areas so that they become known as "dead zones" in the connective tissue of mobile communication.[29]

Hertzian space has a significant effect on the way we occupy the physical space of the city – avoiding dropped calls in tunnels, finding locations with strong signal to use a cell phone, or a WiFi hotspot to check e-mail are familiar examples. Emerging practices like being "bluejacked"[30] with an unsolicited message on your mobile phone or otherwise having your travels augmented by annotations, advertising, and other information are further examples.[31] As our notions of physical space become increasingly informed by the fluctuating boundaries and data transmissions of wireless technologies, our traditional points of urban reference also shift.[32]

Landscape architect James Corner describes the power of maps to render these hidden landscapes: "[Mapping's] agency lies in neither reproduction nor imposition but rather in uncovering realities previously unseen or unimagined. […] The capacity to reformulate what already exists is the important step. And what already exists is more that just the physical attributes of terrain (topography, rivers, roads, buildings) but includes also the various hidden forces that underlie the workings of a given place."[33] As contemporary mapping projects using mobile devices and wireless networks chart new dimensions to the city, could they reconfigure the base map to register the invisible topography of Hertzian space?

Ben Hooker and Fiona Raby's maps of cellular networks in Helskini are a good example of an experiment in surveying the borders of this hybrid landscape [34] [Fig. 6] In 1998, the team from the Royal College of Art in London set out to investigate the possibilities for recreational mobile phone use in Helsinki, Finland, for their *Project# 2615-FLIRT: Flexible Information and Recreation for Mobile Users*. They determined that the most significant feature of mobile phone connectivity was its relevance to a region of a city, as it relates to one's proximity to a cell phone tower, rather than a defined location in the urban grid. In addition, the boundaries of this area were often in flux, mediated by use patterns, geographic and weather conditions, electromagnetic noise, etc. For their research they, in turn,

redrew the map of Helsinki according to this cellular structure.

Figure 6. Cellular map of Helsinki. Ben Hooker and Fiona Raby, *Project # 26765 – Flirt: Flexible Information and Recreation for Mobile Users (Art Books International* Ltd: London, 2000).[35]

Although Hooker and Raby's map articulates the general block plan of the city, it contextualizes the permanent urban fabric within cells of connectivity, effectively rezoning the city based on the range of mobile phone towers. However, the map could be further developed to incorporate time. The network fluctuations they examined would show significant variation over the course of an hour or a day. This variance would have effects on the boundary conditions of the cells and thus reformat the city according to the dynamics of the network. As we create projects that reflect this variable terrain, the process of making them responsive to the erratic qualities of the technology will convey the evolving dynamic between corporeal and Hertzian landscapes.

The impulse to represent this fluctuating landscape again points to the possibility of developing base maps that incorporate time. Michael Batty argues for an urban theory that regards all urban phenomena as "spatial events."[36] Although some events may be measured in minutes or hours, for example a "flash mob,"[37] others may be measured in years or decades, a coffee shop occupying a specific storefront, for instance. In cartographic terms, long-term events may have a more constant presence and short-term events a more fleeting one, but all would be qualified by their durations. Introducing time to the base map will allow us to understand the spatial effects of temporal events, ultimately recognizing the ways in which both ephemeral and stationary phenomena shape the city.

Network

With cheap GPS chips being installed in most new phones, electromagnetic fields may increasingly relay information to us relative to our location in the city –

including a variety of data from annotations logging associations with a place to current traffic delays and crime statistics.[38] These annotations may define and redefine the physical landscape as the meaning of places is shifted by the information attached to them.[39] Further, spatial annotation includes media that may be revised by the day, hour, or minute. In turn, our understanding of the city may become increasingly informed by temporary references. These changing references begin to undermine a purely geographic notion of urban space, suggesting an alternate mapping that visualizes a network of relationships based on proximity, signal, etc.

For example, as the London tube system grew in the 1930s, the early underground maps became difficult to read as new and expanded lines clogged the page. Harry Beck, a draughtsman working for the Underground, designed a new map in 1933 [Fig. 7] that dispensed with geographical accuracy to simplify the diagram.[40] As an alternative to the convention of the geographic map, he drew the lines of the rail as a network, inspired by the conventions of circuit diagrams he was familiar with as an electrical engineer. Despite being divorced from geographic location, the map has become an invaluable guide for passengers.

Figure 7.Harry Beck's 1933 map of the London Underground reproduced courtesy of London's Transport Museum. © Transport For London.

Similarly, as our orientation to the city shifts to include our proximity to ephemeral events – the broadcasts of ad-hoc networks, spatial annotations, and other ambient data – we will need maps that position us according to the transmissions around us, not just our geographic location.[41] The base map may, in turn, become increasingly fragmented, personalized, and interpretive – rendering space according to the relationships we construct in it rather than a geographic illustration of the city as a whole.

Conclusion

The contemporary base map references the purely static landscape of the city – defined by Cartesian coordinates, the road system, and the block plan. However, the city is an enormously dynamic mechanism, which incorporates variable patterns of movement, occupation, and density. As we develop strategies for creating collaborative maps by using locative media, we must also challenge the cartographic assumptions of the base map. This calls for a new form of mapping that represents the city as a temporal system, characterized by both transitory and enduring "spatial events." By referencing the city through the use patterns that shape it, the conventions of mapping will be transformed from those that depict urban structure to ones that amplify urban life.

New technologies, including database-driven maps and locative media, allow us to render geo-spatial data in diverse ways. These tools enable the creation of maps that are generated by an expanded vocabulary of metadata and are rendered using a variety of cartographic techniques that serve to emphasize the life of the city. Applying these innovations to the configuration of the base map will ultimately alter our orientation to the urban landscape as we respond to temporal events and their spatial effects. The fluctuating nature of the Hertzian landscape reinforces these dynamics, while simultaneously calling into question the traditional boundaries of the physical infrastructure. Perhaps by finding new ways to represent this evolving landscape, the city will come to be seen as a space that is modified by both material and invisible topographies.

Ultimately, the importance of geography itself may become increasingly irrelevant to the base map as our proximity to temporary references sets our bearings to the city. This may allow the base map to become a more interpretive device, framing space as a network of relationships rather than a strictly geographic hierarchy. By visualizing the city through this broader notion of mapping, we have the opportunity to experience the urban landscape in new ways, ultimately becoming aware of the changing practices that inform our notion of place.

A shorter version of this paper was previously published in ed. Marc Tuters + Rasa Smite, *Acoustic Space: Trans Cultural Mapping* (Riga: The Center for New Media Culture RICX, 2004).

Acknowledgements

This paper was written with the advice of Ryan Shaw who is currently collaborating with me on a project entitled TRACE (www.tracemap.net), generously supported by the San Francisco Exploratorium. Many of the ideas developed in this paper are the result of our work together.

References

[1] Giles Lane, *Urban Tapestries*, http://www.proboscis.org.uk/urbantapestries/; accessed July 2006.
[2] Ibid
[3] Marina Zurkow, Julian Bleeker, Scott Paterson, and Adam Chapman, *PDPa*l, http://www.pdpal.com; accessed July 2006.
[4] See Google Maps, http://www.google.com/maps; and MapQuest, http://www.mapquest.com/ for examples; accessed July 2006.
[5] U.S. Census Bureau, http://www.census.gov/geo/www/tiger/; accessed July 2006.
[6] Denis Cosgrove, "Carto-City" in Janet Abrams and Peter Hall (ed.), *Else/Where: Mapping New Cartographies of Networks and Territories* (University of Minnesota Press: Minneapolis, MN, 2006), p.148.

[7] See [6], Cosgrove (2006), p. 150-155, for a description of the celebratory relationship between maps and urban space common to 16th – 18th century maps versus their 19th and 20th century counterparts, in which regulation and legibility become most significant.
[8] Jean Baudrillard, *Simulations* (Semiotext (e), Inc.: New York, NY, 1983) p.2.
[9] Curator and artist Drew Hemmet defines locative media as media that "uses portable, networked, location-aware computing devices for user-led mapping, social networking and artistic interventions in which geographical space becomes its canvas." See his article "Locative Dystopia" (2004), http://www.drewhemment.com/2004/locative_dystopia_2.html; accessed July 2006.
[10] See Anthony Dunne and Fiona Raby, *Design Noir: The Secret Life of Electronic Objects* (Birkhäuser: London, UK, 2001).
[11] See examples of Mesh Neworks in *Locust World*, http://tinyurl.com/72xgn; accessed July 2006.
[12] Kevin Lynch, *The Image of the City* (1960), p. 2.
[13] Michel de Certeau, *The Practice of Everyday Life* (1984), p. 117.
[14]
[15] For examples see Google Maps and Yahoo! traffic maps, http://traffic.poly9.com/; accessed July 2006.
[16] Reproduced in Alison Smithson (ed.), *Team 10 Primer* (The MIT Press: Cambridge, 1968), p. 53.
[17] Published in Stan Allen, *Points + Lines: Diagrams and Projects for the City* (Princeton Architectural Press: New York, NY, 1999), p.56.
[18] Michael Batty, "Thinking About Cities as Spatial Events," *Environment and Planning: Planning and Design l29 no.1* (2002), p.1-2.
[19] Originally published in Bill Hillier, *Space is the Machine* (Cambridge: Cambridge University Press,1996), p. 162.
[20] Esther Polak and Waag Society Amsterdam, "Realtime," http://www.waag.org/realtime/, accessed June 2006.
[21] Scott Snibbe and Stamen Design, *Cabspotting*, http://cabspotting.org/; accessed July 2006.
[22] See http://www.cabspotting.org/projects/flycab/; accessed July 2006.
[23] See [6], Cosgrove (2006), p. 152-3 for a description of 16th century maps.
[24] See Lalya Gaye, Ramia Mazé, and Lars Erik Holmquist, "Sonic City," http://www.viktoria.se/fal/projects/soniccity; accessed July 2006.
[25] See Simon Sadler, *The Situationist City* (The MIT Press: Cambridge, MA, 1998), p. 15-66.
[26] Reprinted in Simon Sadler, *The Situationist City* (The MIT Press: Cambridge, MA, 1998), p. 60.
[27] Although they do not yet challenge the base map this data is projected upon, several recent projects collect this kind of data. See Christian Nold, "Biomapper," http://www.biomapping.net, accessed July 2006; Giles Lane and Natalie Jeremijenko, "Robotic Feral Public Authoring," http://socialtapestries.net/feralrobots/, accessed July 2006; as well as Ben Hooker, Pedro Sepulveda and Bill Gaver, "Environmental E-Science," http://www.dataclimates.com, accessed March 2006..
[28] See urban planner Anthony Townsend's project *New York City Wireless*, http://www.nycwireless.net, accessed July 2006.
[29] Ben McGrath's article discusses Mayor Michael Bloomberg's efforts to rid Manhattan of its "dead zones." Ben McGrath, "Call Log: I'm Loosing you," The *New Yorker*, Nov. 10, 2003, pp. 48-50.
[30] Bluejacking is the action of sending an unsolicited message over a cell phone, PDA, or laptop via a blue tooth network. See Wikipedia, http://en.wikipedia.org/wiki/BlueJacking; accessed July, 2006.
[31] See services like *Socialight: The World in your pocket*, a website that interrupts your journeys through the city with "StickyShadows" left there by other users, http://socialight.com/; accessed July, 2006.
[32] William Mitchell, *Me*++ (The MIT Press: Cambridge, MA, 2003), p. 120. William Mitchell points out in his book *Me* ++ that "The most profound effect of electronic tracking, inscription, and interrogation techniques is, in combination and on a large scale, to change the fundamental mechanics of reference – the ways in which we establish meaning, construct knowledge, and make sense of our surroundings by associating items of information with one another and with physical objects."
[33] James Corner, "The Agency of Mapping" in D. Cosgrove (ed.), *Mappings* (Reaktion Books: London, 1999), p. 213-14.
[34] Ben Hooker and Fiona Raby, *Project # 26765 – Flirt: Flexible Information and Recreation for Mobile Users* (Art Books International Ltd.: London, 2000). See also Ben Hooker, "Dataclimates," http://www.dataclimates.com; accessed March 2006.
[35] Ben Hooker, "Dataclimates," http://www.dataclimates.com, accessed March 2006.
[36] Ibid. [14], p. 1.
[37] See Wikipedia, Flash mob, http://en.wikipedia.org/wiki/Flash_mob; accessed July 2006.
[38] For more on the implications of GPS systems on urban design see Anthony Townsend, "Digitally Mediated Urban Space: New Lessons for Design," *Praxis*, March 2004, pp.100-05.
[39] See Jo Walsh's "SemanticCity" for a discussion about the semantic web and its relationship to our experiences of urban space, http://frot.org/bus/wiki.cgi?SemanticCity; accessed July 2006.
[40] London's *Transport Museum*, http://www.ltmuseum.co.uk; accessed July, 2006.
[41] There are several recent cell phone projects with location-based interactions, such as Dens Crowley's and Alex Rainert's *Dodgeball*, http://www.dodgeball.com, accessed July 2006; and Kamida's *Socialight*, http://www.socialight.com; accessed July 2006.

Urban Screens – The Urbane Potential of Public Screens for Interaction

Mirjam Struppek

Abstract

Within a time frame of about ten years, experimental (interactive) media installations and performances have gained recognition as new art forms in public space. Artworks explore the interconnectedness of public space, interaction, and new media. Urban Screens investigates how the growing infrastructure of dynamic digital displays in urban space, currently dominated by commercial forces, can be utilized in this context and broadened with cultural content. The research project wants to network and sensitize engaged parties for possibilities of using the digital infrastructure for contributing to a lively urban society. The integration of current information technologies supports the development of a new digital layer of the city in a fusion of material and immaterial space, redefining the function of this growing infrastructure. Interactivity and participation will bind the screens to the communal context of the space and thereby create local identity and engagement.

The Redefinition of a Growing Infrastructure

Public space is the city's medium for communication with itself, with the new and unknown, with the history and with the contradictions and conflicts that arise from all those. Public space is urban planning's moderator in a city of free players. [1]
Prof. Wolfgang Christ, 2000

How can the growing digital display infrastructure appearing in the modern urban landscape contribute to this idea of a public space as moderator and as communication medium?

The mobilization of digital technology and a growing digital culture have changed the urban communication environment. In the context of the rapidly evolving commercial information sphere of our cities, various new digital display technologies are being introduced into the urban landscape: daylight compatible LED billboards, plasma screens exposed in shop windows, beamboards, information displays in public transport systems, electronic city information terminals, holographic screen projections, or dynamic and intelligent surfaces, integrated into architectural facade structures. [Fig. 1]

As McQuire has put it, "The migration of electronic screens into the external cityscape has become one of the most visible tendencies of contemporary urbanism." [2] Considering this already existing digital infrastructure, it is a great challenge to broaden the use of these "moving billboards," as Lev Manovich calls them in his vision of an Augmented Space [3], instead of flooding urban space with new techno-objects.

Figure 1: New York Times Square: accumulation of LED boards. Photo: Louis Brill.

So far one of the main targets of this infrastructure is to manage and control consumer behavior. We are not far away from the implementation of technology that makes it possible to cover buildings with large flexile planes of moving images, networked and controlled from one central location but making use of site-specifically collected consumer data. Display systems already start to detect our behavior and adjust to our consumer preferences.

Paul Virillio sees the new, developing "pervasive architecture-style" of screens covering high-rise-facades as "Electronic Gothic." [4] He refers to the narratives of Gothic church windows, which where aimed at effecting people's moral behavior. Immersion and its effects on the audience will also be increased by the "perfect" incorporation of screens in the architecture of the urban landscape.

How can the use of these screens controlled by market forces be broadened and culturally curated? Initiatives such as Locomotion, Going Underground, Strictly Public, Outvideo, the 59th Minute and Transmedia :29:59 [5] are pioneering in their use of commercial outdoor displays for screenings of video art. New balanced alliances are needed that challenge city authorities and regulators, architects, advertisers and broadcasters, as well as cultural curators, artists, and the citizen as producer – joint cooperations to shape the future development of the "screen world" in a sustainable manner, considering the danger of visual and technological pollution of urban space. [Fig. 2]

Figure 2. The range of screens in urban public space.

Urban Screens are defined as various kinds of dynamic digital displays in urban space that are used in consideration of a well balanced, sustainable urban society – screens that support the idea of public space as space for creation and exchange of culture, or the formation of a public sphere through criticism and reflection. Their digital and networked nature makes these screening platforms an experimental visualization zone on the threshold of virtual and urban public space.

The Broader Context of Urban Screens

Urban public space – understood as open, civic space – is a key element in the development of European urbanism. In this role as space for representation, culture, and encounter through trade, exchange and discussion, urban areas have always been a place that is rendered alive through various interactions. Referring back to the old concept of the Greek Agora, urban public space is a unique arena for exchange of rituals and communication. A constant process of renewal and negotiation challenges the development of urban society. The architectural dimension of urban space has played an important role in providing a stage for these interactions. Moreover, the architecture itself functions as a medium, telling narratives about the city, its people, and the represented structure of society. Its inhabitants can read the reoccurring social interactions and the way the space is populated in a participatory process. The whole urban structure is becoming the crystallization of the city's memory over time.

Yet, the vanishing role of public space as place for social and symbolic confrontation and discourse has been much discussed in urban sociology over the last century. Sennett, Häussermann, and Bott, in particular, have pointed out how, since modernization, individualization and a growing independence from place and time seem to have destroyed the old rhythms of the city and therefore its social systems. We currently face a transitional period of the restructuring of social networks and discover new relations among people and places in a globalized world that is threatened by diffuse and complex fears of instability and lack of strong local roots. This situation has resulted in various experiments with new types of relations, supported by developing new media tools.

In its early stages, the Internet was discovered as new, alternative public sphere. The rediscovery of a civic society is tied to the inherent structure of the Internet, which is strongly based on cooperative exchange and shared engagement through the openness of systems. The population of virtual spaces – virtual cities with their chat rooms, MUDs, and experimental spaces for creating alternative identities – has been continuously growing. Now we are looking at various experiments with community in the growing field of social computing – peer-to-peer networks, friend-of-a-friend communities such as Orkut or Friendster, and, more recently, mobile communities connecting mobile phone users. We also find participatory experiments in content creation within the mailinglist culture and wiki and blogging systems, serving an increased need for self-expression. Now these explorations of virtual worlds have merged with the rediscovery of urban public space, the recent popularity of locative media being one indicator of this development.

In parallel, an "event culture" has evolved in the real urban space. Guy Debord already foresaw "the society of the spectacle" in 1967, and his critique of a society "in which the individuals consume a world fabricated by others rather than producing one of their own, organized around the consumption of images, commodities, and staged events" [6] should be taken seriously. In the growing international competition among cities, the focus often is on tourism or the citizen as consumer. City marketing and urban management strategies are applied to create a vision of "creative cities" that are in fact not necessarily supporting the inhabitants' creative use of the city or their creative contribution to a lively urban culture. Cities are engaged in a struggle with a "feeling of placelessness" caused by the spread of international architecture and branded shops. In fact, screens also tend to look the same everywhere, so

there is a need to consider the locality as well as site-specifity of the content in order to prevent further disconnection of the perception of our urban space from the actual locality.

In order to maintain the social sustainability of our cities, it is important to take a closer look at the livability and use of urban public space and the rediscovery of a civic society. The information platform www.interactionfield.de gives an overview of numerous interactive media projects, assessing their potential for urban society in terms of:

- Promoting interaction, fearless confrontation and contact with strangers
- Promoting formation of public sphere by criticism, reflection on society
- Promoting social interaction and integration in the local neighborhood
- Supporting understanding of the current development of our high-tech society
- Supporting conscious participation in the creation of public space [7]

Urban Screens can be understood in the context of a reinvention of the public sphere and the urban character of cities, based on a well-balanced mix of functions and the idea of the inhabitant as active citizen instead of properly behaving consumer. Virtual spaces alone cannot function as spaces for exchange and production of identity.

The Character of Urban Screens

In connection with the ephemeral yet open character of the digital information world, Urban Screens asks for a new urban language with its own dynamic signs and symbols, formed through active participation from various players. New interactive technologies and networked media offer more possibilities for the visual programming of these digital surfaces through the interplay of new display technologies, broadcasting tools, database and content management systems, and sensor technology. Linda Wallace sees "the internet as a delivery mechanism to inhabit and or change actual urban spaces." [8]

Through the the Internet and other digital networks, digital content has become more fluid, being, at least in theory, available anytime, anywhere, produced for the audience of the new global village. Could large outdoor displays function as experimental "visualization zones" of a fusion of virtual public spaces and our real world? Can we localize the huge flows of information through these screens, and can these zones in fact play a more active role, more active than just providing the canvas on which the digital world is rendered? What characterizes Urban Screens is a connection to the locality of the static nature of the new screening infrastructure.

In contrast to the mobile screens integrated in phones, PDAs, laptops etc., which display content for an individual, Urban Screens focuses on the public urban audience, on joint and widespread reception of media content. The growing embeddedness in screen systems, accessibility of information via Internet, mobile devices, etc. augments the respective urban space's "situatedness." Levels of locality and globality vary, ranging from the local neighborhood screens with symbols and signs on a city level to trans-urban networks of screens enabling new "glocal" interconnectivity.

Visions of New Content and Use

The first steps in broadening the commercial advertisement content of large digital outdoor screens focused on the transfer and slight adjustment of TV features to the new circumstances of public viewing. Soon we might have TV broadcast stations specialized in urban public space and its local community. The experiments done by BBC in collaboration with Philips and local City Councils in various cities in the UK could be considered a forerunner to these TV broadcast stations. They coordinated outdoor movie-screenings, the collective watching of soccer-games, and special City-TV news channels. [Fig. 3] Preferably set up in key locations, in a setting for a wider audience, these screenings in memorable places could support identification with local culture through joint experiences. A local memory could indeed develop, if the screens were used as a means for maintaining and supporting a rich and complex local culture.

Figure 3. Soccer game on the BBC Big Screen in Manchester; celebration of victory.

There has been a growing interest in connecting screening infrastructure with cultural institutions that preserve and produce digital content or video art. Cultural centers and institutions such as the Schaulager in Basel and Austria's Kunsthaus Graz have started, in a more experimental style, to officially integrate screens in their architectural facades, so that they function as an extension of their archives into public space. The Australian

Centre for the Moving Image uses the nearby public screen in Federation Square, Melbourne. The Creative Industries Precinct (Australia's first site dedicated to creative experimentation and commercial development in the creative industries, located on the western fringe of Brisbane's Central Business District) integrated three screens in its complex of buildings to address different audiences. [Fig. 4] One of the screens will be used to support the development of a new local community in the vicinity. The above mentioned BBC project of Public Space Broadcasting on community screens collaborates extensively with local art institutions.

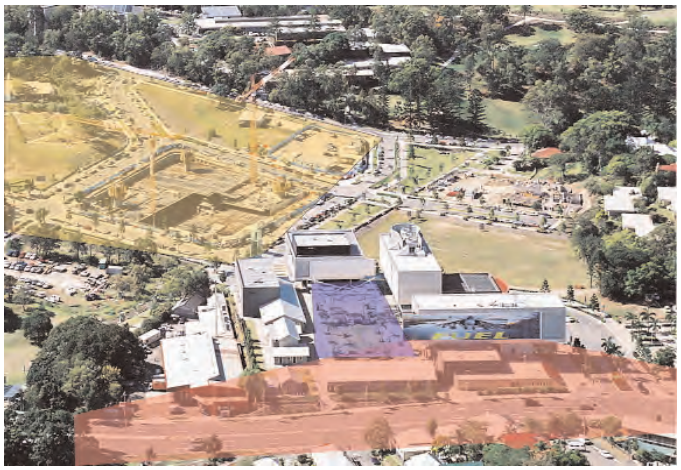


Figure 4. The orientation of the three screens at the Creative Industries Precinct, sketch by Peter Lavery.

A new audience can be reached on their daily routes by bringing content into outdoor public space. Connecting Urban Screens amongst each other could enable new mechanisms for creating and maintaining relationships between cross-cultural organizations and their audiences.

Connected screens could also serve as exchange platform between the inhabitants of various cities. A repeatedly suggested idea for using these screens is to enhance the connectivity of remote communities through shared visual displays that utilize videoconferencing. These connections between remote spaces reflect the relativity of the terms "close" and "remote" in a globalized world and an increasingly transnational lifestyle. *Hole In Space* (1980), one of the early projects of this kind connected the people walking past the Lincoln Center for the Performing Arts in New York City with people in the Broadway department store in Century City (LA) through life-sized television images. The project *Hole in the Earth* (2003-2004) linked the audience in Rotterdam with people in Indonesia on the other side of the world through screens, camera, and microphones in an installation resembling a well. [Fig. 5]

In Russia, China, USA, and South America large networks are currently developing on a city as well as national level. Screens become a key element in the government, regional, and urban informational infra

Figure 5. Opening of the installation *Hole in the Earth* by Maki Ueda, Rotterdam, December 2003.

structure due to their ability to easily convey and spread content in local spaces.

The appeal of a local environment obviously is a highly subjective matter, but a sophisticated social interaction and information network in a local neighborhood could play an important role in the perception of locality, supporting a feeling of security. By connecting large outdoor screens with experiments in online worlds, the culture of collaborative content production and networking could be brought to a wider audience and serve as an inspiration.

Interactive screens integrated into urban furniture similar to a blackboard for comments, stories, conversations, could also help to circulate and access data, serving and strengthening the local community and its small-scale economy.

In 1997, Philips already was involved in a large research project called *LIME* (Living Memory), which integrated a local exchange platform into café tables and other urban furniture. Following this early example, various projects aimed at further developing the idea of interactive community boards and supporting the information exchange in a local community are currently being produced. [9]

In an attempt to address issues of fear in urban spaces, Rude Architecture implemented a network of Chat Stops equipped with interactive video technology, enabling communication between people waiting at different bus stops. If they desired, people could start a "video conference" with others waiting somewhere else. By means of communication with other inhabitants, the boredom of waiting could be alleviated through conversations, and subjective feelings of safety could potentially be increased. The project applies video communication instead of video surveillance – voluntarily and transparent, but at the same time entertaining.

The mobile phone can also be utilized as information transmitter. Various artists have rediscovered the idea of the urban dialogue in the form of speaker's corners and

have been experimenting with the use of SMS for public expression. The project Storyboard by Stefhan Caddick used a mobile Variable Message Sign situated in public space to display submitted SMS text. Will the next step be to connect the "blogosphere" to Urban Screens? What strategies will prevent misuse and encourage high-quality submissions?

Involving an urban audience in experiments requiring participatory planning and making use of the participatory tools of new media is a great challenge. Screens in public spaces could function as mediation board between the community and the local planning department and serve as a public display for the exchange of ideas.

Jeanne van Heeswijk's project *Face Your World* – which took place in Columbus, Ohio, in 2002 – gave children on a bus access to a multi-user computer game allowing them to redesigning their communities as they envisioned them. [Fig. 6] At three bus stops, the creations were displayed on special screen sculptures presenting the results of the game to the urban community. As van Heeswijk put it, "It's about the way people look at the space around them. With everything being privatized now, people don't view the community as their own any more." [10] In this case, digital media were utilized as interaction catalysts for the participation and engagement of young people in a local community.

Figure 6. *Face Your World:* involving young kids in community planning.

Conclusion

Content needs to be coordinated with new visions of how, when, and in what specific locations screens can be integrated in the urban landscape and its architecture. The balance between content, location, and type of screen determines the success of the interaction with the audience and prevents noise and visual pollution. Furthermore, we need to understand how the growing infrastructure of digital displays influences the perception of our public spaces' visual sphere.

Whenever we integrate a medium into the city's public space, we need to assume responsibilities regarding the sustainability of our urban society. Public space is the glue that holds urban society together. It is time to shape future directions of the developing "screen world" in a sustainable manner. It is time to develop more creative visions for alternative, socially oriented content for various types of Urban Screens and to avoid a focus on technology. Other forces than merely commercial interests should drive the attempt to shape the future development of the emergent "screen world." [11]

Mirjam Struppek
Urban Media Research, Berlin
http://www.interactionfield.de
struppek@interactionfield.de

References:

[1] W. Christ, "Public versus private Space," IRS international symposium, *Die europäische Stadt - ein auslaufendes Modell?* (Erkner bei Berlin, Germany, March 2000).

[2] S. McQuire, "The Politics of Public Space in the Media City" in *Urban Screens: Discovering the potential of outdoor screens for urban society, First Monday Special Issue #4* (February 2006), http://www.firstmonday.org

[3] Lev Manovich, "The Poetics of Augmented Space" (2002), http://www.manovich.net/DOCS/augmented_space.doc

[4] P. Virilio, "We may be entering an electronic gothic era" in *Architectural Design - Architects in Cyberspace II, Vol. 68 No. 11 / 12* (Nov. / Dec. 1998), pp. 61-65.

[5] For a list of artistic screening events and initiatives see http://www.urbanscreens.org

[6] S. Best, D. Kellner, *The Postmodern Turn* (Guilford Press: New York, NY, 1997), p. 82.

[7] For a detailed description of these developed categories see http://www.interactionfield.de

[8] L. Wallace, "Screenworld" in Material media, artefacts from a digital age (2003), http://www.machine-hunger.com.au/phd/pdf?

[9] E. Churchill et al. "Multimedia fliers: information sharing with digital community bulletin boards" in Huysman, Marleen et al. (eds.) Communities and technologies (Kluwer, B.V.: Deventer, 2003), pp. 97-117.

[10] van Heeswijk cited in J. Gentile, "Exhibit to unite community," *The Lantern Issue 6/27/02, Arts Section* (2002), http://www.thelantern.com

[11] For a detailed article presenting various Urban Screens projects, see M. Struppek, "The social potential of Urban Screens" in *Screens and the Social Landscape, Visual Communication, Vol. 5, No. 2* (Sage Publications, June 2006), pp. 173-188.

From Scenography to Planetary Network: Shanghai World Expo 2010 at ISEA San José 2006

Franck Ancel

All that has been conceived exists.
Jacques Polieri

If cities are currently being extended and transformed into "urban territories" through the impact of science and technology, then the classic places for artistic performance are essentially victims of these changes, since these traditional performative spaces have not really been able to incorporate technological change. New technologies are responsible for the emergence of an "Interactive City." This *City of Bits* was first analyzed in terms of "Space, Place, and the Infobahn" by William J. Mitchell, a researcher at MIT, in his book of the same name, published ten years ago. This was the period of the appearance of VRML and the hope for democratizing effects of the Internet, a time when some people saw cyberspace as another world and a new continent and others, as a Utopia. The rise of the World Wide Web was signalled by the use of a global language, HTML – invented by a scientist from CERN in Switzerland – which allowed us to share information on our computer screens without knowing any code. It was a case of "computers making city life better, perhaps," which also is the underlying philosophy of the forthcoming World Expo in Shanghai. However, this is not the first interaction between art and technology at a World Fair.

36 years ago, Jacques Polieri, the creator of modern scenography, implemented part of his projected *Théâtre du Mouvement Total* (Theater of Total Movement) at the World Fair in Osaka, Japan, in partnership with the industrial group Mitsui. Through an integration of electronic and technological developments, the continuous nature of his *Spectacles: 50 ans de Recherches* (Shows: 50 years of Research) – derived from historical avant-garde art movements – allowed Polieri to present an extension of the past and a break with it, one that anticipated the future computerization of this planet. It is this concept that I referenced last year in the five texts in my cycle of five communications for five continents, *From Scenography to Planetary Network*, all of which are available on my website in English.

Polieri created historical events of the same standing as those organized by creators such as Frederick Kiesler and Enrico Prampolini. In 1925, at the International Exhibition of Decorative Arts in Paris, Kiesler (with his *Ville Spatiale*), and Prampolini (with his *Théâtre Magnétique*) extended art forms in a spectacular way that anticipated a global art form, one that is not localized within a structure but linked to the spirit of the city and modern life. Frederick Kiesler issued his manifesto in 1926:

1. Transformation of the surrounding area of space into cities.
2. Liberation from the ground, abolition of the static axis.
3. No walls, no foundations.
4. A system of spans (tension) in free space.
5. Creation of new kinds of living, and, through them, the demands which will remould society.

In 1958, another ode to electronic technology had been performed within the context of a World Fair. The architect Le Corbusier, together with musicians Edgard Varèse and Iannis Xenakis, had installed a magnificent *Poème électronique*, the precursor of a multi-disciplinary arts approach, in the Philips Enterprise Pavilion at the orld Fair in Brussels.

In the 50s, Iannis Xenakis was involved in several of Corbusier's projects, first as an engineer and then as a musician, notably in connection with the establishment of the Indian town of Chandigarh. Xenakis' primary involvement, in collaboration with his master, was with the Philips Pavilion, which was destroyed at the end of the Fair. Roberto Barbanti, a theoretician, explained the direct relationship with technology that was demonstrated by "the electronic Poem within the Philips Pavilion, a 'multimedia object' ahead of its time," in which Le Corbusier, Edgar Varèse and Iannis Xenakis joined forces to "aim at a summary of the arts, instead of a synthesis": "the Philips Pavilion is an installation in which immaterial architectural elements and sound technology are combined. Having taken on this order from the Philips Company, the Pavilion was obliged to use their technology to transmit sound and images. This technological input was well concealed in the architectural space of the Pavilion, making way for the artistic role of the tri-dimensional work." The architecture provided by Xenakis projected the music into what was previously only a setting, the space in which it was diffused. The ephemeral and avant-garde architecture of the Philips Pavilion was invented in order to diffuse the Poème électronique by Edgar Varèse through 425 loud-

speakers. As early as 1936, in "Music of our time," he claimed to be seeking "in the projection of sound, the quality of a third dimension in which sound emissions resemble rays of light, beamed from a projector, the extension of a journey into space." [1]

Although Polieri's *Théatre du Mouvement Total* had been exhibited in a closed structure, the visual projection and sound effects, combined with the freely circulating spectators within it, were an attempt at achieving something more than a straightforward expression of modernity enshrined in art. The principle would still be same, whatever the external form chosen for the building: a cylinder, cube, or parallelepiped, or even some type of convex polyhedron. Polieri's *Théatre du Mouvement Total* presents a dichotomy of the external form of the building and its internal scenographic arrangement; these are completely autonomous and independent. The relationship between the moving spectators at the center of the auditorium and the mobile spectacle surrounding them was, for the first time, completely dynamic in all three aerial dimensions. Kinematics became an essential part in the transmission and reception of messages. Such kinetics may be random but can be described mathematically. This was an open-ended vision, always expressed in global terms through an infinite movement towards the outer limits of the abstract or the cosmos.

As the World Fair in Osaka, at which electronic technology was featured in the form of robotics, the next Expo in 2010 in Shanghai will undoubtedly see the appearance of a new re-combination and inter-connection that is just as important, one between space traversed by satellites and a period of hopes for technological democratization of our everyday life, travelling towards another future. Further information on the Osaka World Fair an be found in a book published in New York in 1972 that describes the relationship between E.A.T. (Experiments in Art and Technology) and Pepsi Cola, which resulted in the creation of a pavilion in Osaka in 1970, under the direction of Billy Klüver, Julie Martin, and Barbara Rose.

Recent developments, such as the World Expo in Aichi, Japan, in 2005 and the announcement of Shanghai as the site for the next Expo in 2010 are indicating a revival of established ways of envisioning this sort of project, relating it to previous historical occasions. The initial architectural work on the 2010 World Expo in Shanghai suggests this direction, but also displays a certain concern for the environment in the choice of its theme: *better city, better life*. Hugo Lacroix has written a monograph about the team of architects who produced the first design for the 2010 exhibition infrastructure, titled *Architecture – Studio*, in which he points out that "The European spokespersons seem to be very close to the ideas of the ancient Confucian philosopher Wang Fuzhi. For them too, the ideal consciousness is to maintain a state of evolution, avoiding all immobilisation. For them, eternity has acquired this meaning; the ability to actualize an endless process of becoming." This could also be said to describe the reality driving us to conceptualize and construct projects on a planetary scale, projects that connect directly with the universe and with (meta)physics in a digital age.

Let us recall, just briefly, that the Architecture – Studio agency was also behind the construction of the Institute of the Arab World in Paris (with mechanical screens that filter the light, designed by Jean Nouvel) and the European Parliament in Strasbourg (a real cathedral of politics in that city). For Shanghai, Architecture – Studio envisioned a symbolic bridge, passing from the past to the future, as the philosophical expression of an invisible link between the historical quarter of the Shanghai Bund and the Pudong office skyline across from it. Together, these establish the context for the forthcoming World Expo. The real time movement across a passageway seen no longer as a utopia set in the future but as an objective dimension to the city of the present, is presented not just as a single event but one that projects into the future.

While this initial design for the Expo site, submitted to the International Exhibition Bureau as part of the proposal, was created by a French agency, a new overall site plan, developed by three international prize-winners, was subsequently presented as a joint design in November 2004. After all, Shanghai, at the heart of the continent, is in the process of becoming the Asian New York. It is this process of urbanization, unfolding in a city with no end and no limits, that is being discussed for 2010. Consequently, what is being developed in Shanghai is not simply an immaterial bridge between a global event and a planetary dimension. The theme of the "contemporary city" is increasingly coming to the fore in exhibitions and events dedicated to the electronic arts, as at the 2006 ISEA gathering in San Jose.

Some of the planned interactions between urban evolution and current techno-scientific developments constitute a linkage to today's artistic explorations. The concept of a bridge of flowers as part of the initial design for Shanghai 2010 constituted a unifying monument, and there definitely is a need to create an immaterial meeting place for this city that would be just as unifying, at a time when the virtual world is in the process of becoming part of everyday reality. In Shanghai, the process of becoming is symbolized by the river, a state of flux, along which the city, and not just the port, is being extended.

Drawing from the history of cinema as a media art, one could make an offbeat connection between Orson Welles' 1947 film *The Lady from Shanghai* [Fig. 1], the Shanghai Port (World Expo 2010) and San Francisco Bay (ISEA 2006, San Jose), evoked by the story of the film and existing in reality, since the two are twin cities. The forthcoming large-scale events in China – the 2008

Olympic Games and the 2010 World Expo – will take place during the same years as the next two ISEA festivals. However, this obviously is just a coincidence in space and time. For instance, the forthcoming World Expo in Zaragoza, Spain, in 2008 does not represent any meaningful connection in temporal or symbolic terms. Nevertheless, one could establish a connection in terms of a universality that we consider a necessary part of the agenda for humanity. I am not talking about a dimension of universality that neglects diversity or originality, but, on the contrary, about an appeal to openness and to freedom, whereby electronic artistic creation is employed as a "peaceful weapon" for achieving an opening up to the world. It is up to us to think about tomorrow, starting this very day.

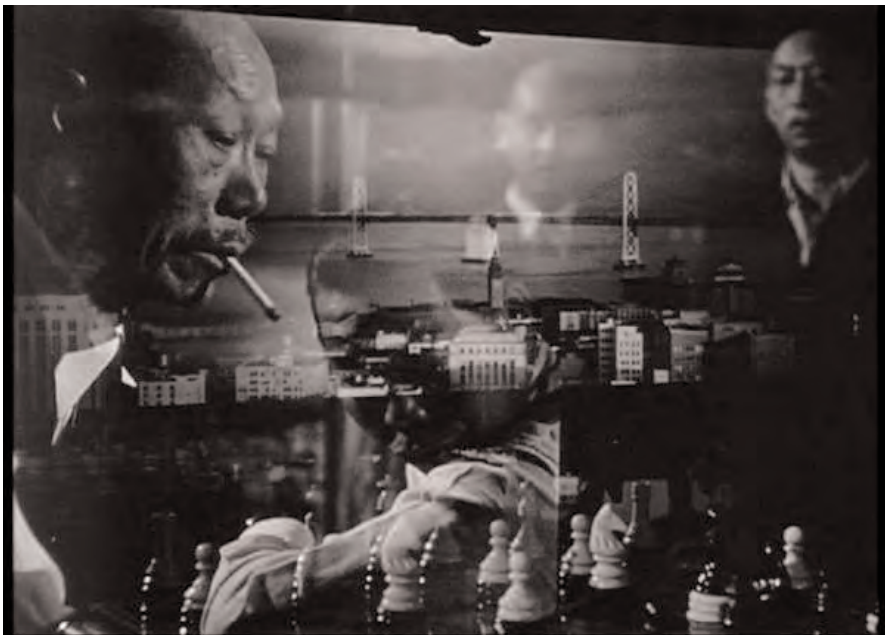


Figure 1. Still from *The Lady from Shanghai*, Orson Welles.

Given that China has a monument of planetary dimensions, the Great Wall – the only human construction that can be seen from space, classified as a national treasure by UNESCO – the country could perhaps be the first to support a different concept within the context of the World Expo, namely, an event capable of suggesting a more global, not to say cosmic, dimension. This cosmic dimension plays a role in the consciousness of "the planet's thinking layer," defined by Teilhard de Chardin, the Jesuit scientist who was exiled to China over a century ago. The Internet is sometimes considered to be the incarnation of his "noosphere." The conquest of space has definitely changed our way of seeing and inhabiting the universe. Thanks to communication systems and the Internet, the idea of linking several continents today is a reality, but it is no easy matter to apply this concept to artistic creation.

The AIT (Architecture, Image, Technology / 2002, 2003, 2004) triptych in the heart of Paris was an attempt at imagining the basic requirements for a project involving several continents, connecting the cities of Paris, London, and Los Angeles. Van Wagner, a world-leading communications company that recently opened offices in France was one of the first corporations to use large advertising spaces with still projection in New York during the 1970s. They now own the screen at the bottom of the Montparnasse Tower, the only one of its kind in France, and also have two screens in London and Los Angeles, respectively. The Paris LED screen has a surface area of 38 square meters. Its location in the French capital, at the crossroads of many different types of networks, is what motivated us to spend more than six months negotiating a partnership with the Van Wagner company, with the aim of completing the project free of charge with their technical support. We also approached other businesses involving networks, such as RATP, the company that manages the Parisian metro system, in the hope of using live images from their CCTV cameras for our screen display. Additionally, I established contact with mobile phone companies, proposing to use the "cyber-traceability" of mobile telephone chips, based on software monitoring of all movement within the city and cartographic superimposition.

This scenario would have opened up the possibility for everyone to send live photographic and video captures from a mobile phone to each window of the screen display by means of MMS. However, none of my proposals to these companies has produced any results, positive or negative, but the dialogue is still open for other projects. At the moment, I am not yet dealing with questions surrounding the potential health risks of mobile phones or privacy issues with regard to CCTV.

Van Wagner finally did not allow us to use the screen in real time. We therefore did not have access to the MP4 server broadcasting to the Paris and, potentially, the two other screens in order to produce a live triptych between Paris-London-Los Angeles. In the end, the entire financing of the project came from a private source, as cultural institutions were not interested in supporting the work. However, with a major partner, such as China Mobile, for the 2010 Shanghai event, it would be possible to explore how this type of project could offer 50 million visitors from all over the world an orchestrated representation of an urban scene in a state of immaterial flux, traveling through the fabric of the city and out to different locations on the planet.

A project with this potential would certainly be a more appropriate architecture for establishing a networked virtual installation than a pavilion. The World Expo should provide an opportunity to engage with the immaterial and urban culture of flux, and the *Théâtre Immersif* project for the Franco-German pavillion at the Aichi World

Expo has not really met this expectation. The simple procedure of expanding an electronic projection towards a panoramic dimension that is involved in this project certainly does not amount to an awareness of the world as it is. As the French newspaper *Le Monde* stated with regard to the 2006 World Cup in its edition of November 30, 2005,

> *For the first time since it started in 1930, the 2006 World Cup will not open with a football match. It will be held in Munich, starting on 9 June, but the opening gala will take place two days beforehand in Berlin. It will feature an event which the organisers promise will be 'grandiose'; the football supremos are planning to present the world with a 'Festival of the senses', to take place in the Olympic Stadium in front of sixty thousand spectators and hundreds of millions of TV viewers. FIFA promises 'A unique event which will combine music, dance and special effects' and is intended to 'emphasise the emotional aspect of football.'*

The French choreographer Philippe Decouflé masterminded the production, which still had the feel of an old-style stadium rather than a "planetary event," despite the aesthetic quality of the show. Let's hope that the Olympic Games in Beijing in 2008, another "global" event, will be an opportunity for a more up-to-date aesthetic concept.

On our part, we are exploring the way in which numbers are used in competitive sports as one aspect of our research on the computerization of the planet. The use of GPS as part of an (albeit post-mediatic) happening could become a body performance artistically linked with the cosmic notion of spatial conquest – an idea that was given visual impact by a simple photographic image of Yves Klein's physical act of daring, his *Leap into the Void*.

Polieri's research formed part of a series of attempts at artistic creation that were linked to new technologies and more in sync with the process of global connectivity. A major theme in our proposals is the use of a satellite via GPS or the launch of an artwork into orbit as an expression of our awareness of the universe. We explored the use of satellites for the purposes of scenography in our text *Le satellite au service de la scénographie*. [2]

In December 2005, during a brief stay in Shanghai, I was able to confirm several of my assumptions in this respect. I will refer back to this trip, in the form of an actual conclusion or an imaginary proposition.

On Saturday December 17, 2005, between 1800 and 1904 hours, Paris GMT, my artistic intervention on a passenger plane was directly transmitted via the Internet during a flight from Shanghai to Munich, at a speed of over 900 km per hour and an altitude of 30000 feet. By means of a live webcast I completed my cycle of five communications on SPN (from *Scenography to Planetary Network*) for five continents. The transmission could be viewed in real time on my website via a satellite link relaying images and sound from the plane.

This direct flight extended and completed my cycle of five communications for five continents, constituting a movement of projecting the body into space at a point in time ("X") thanks to not a dance company, but an airline company, without help from cultural institutions. The rhythm of an emergent form in a flowing movement pointing to both the past and the future and inhabiting an eternal present: a connection established by means of a handycam linked to an iBook transmitting its audio-visual flux to a wireless satellite weblink. Not a simple "streaming" motion but an attempt at global transmission in flux.

I was able to set up this performance thanks to Lufthansa's offer to provide FlyNet with a connection by Boeing. This webcast makes a formal nod towards the sleeper John Giorno, the poet of *Sleep*, Andy Warhol's mythical neo-avant-garde film made in 1963 in New York. This time around, a sleeper leaves the Asian New York of tomorrow, Shanghai, on his way to a new year under the sign of China. For this world event, the video ran for 64 minutes and focused on 64 keywords involving a combination of 12 wordplays on five themes (five continents, colors, senses, elements, years). The "64 symbolic hexagrams" depicted invite the audience to engage in a journey of artistic creation and inspired imagination towards a process of "becoming" on a planetary scale that was initiated with the forthcoming World Expo 2010 in mind.

I refer to this artistic act of communication because it does not merely integrate contemporary themes and technologies in an original and innovative way but is also an attempt at re-thinking the emergence and appearance of a work in terms of a vision that sums up the modern age.

Without being completely in agreement with the ideas put forward by the Situationists Guy Debord and Benjamin Constant in 1958, I want to reference this context with a presentation of their three last utopian principles:

9/ All methods can be used, on condition they are used in a unitary action. The co-ordination of artistic and scientific methods must result in complete fusion.

10/ The construction of a situation means setting up a transitory micro-ambiance and random events for a single moment in the life of a few people. This cannot be separated from the construction of a general ambiance, which would be relatively longer lasting, in a unitary urban space.

11/ A constructed situation is a way of approaching unitary urban spaces, and unitary urban spaces form the indispensable basis for developing the construction of situations, as a game and as serious aspects of a society that is more free.

Today, it is not a question of organizing shows or making films in the manner of Orson Welles, but simply one of imagining the projection of images and sound into a performance area that is not a theater and / or a cinema, but the emergent city (for instance, the emergent city of Shanghai), thereby creating historic and urban counter currents that lead in every direction. One could imagine to create art for the city network one day by means of screens (urban and telematic) at each street intersection; consider the size of the projections on the Pudong skyline, which make Times Square seem small. The city's span and dimensions are what makes it unique in the world. However, considering the historical precedents in the 20th century and the vision behind the art created for the World Fairs, from Kiesler to Polieri, we have no choice but to become involved in a dimension that enables a much more global level of interactivity – between technology and "cosmic conquest."

Our cities and lives are currently in the process of being computerized, in one respect or another, and becoming more unitary and imaginary than ever before. However, the content presented in these computerized environments is not necessarily interesting. In any case, the future society and urbanity we are talking about here is already no longer media-oriented per se, but definitely spectacular in nature. This means that "messages" are no longer on the agenda, not even artistic messages. Consequently, the imaginary freedom provided by the process of computerization will not be able to continue beyond the post-media age arriving with the digitalisation of the entire planet, with the effect that only some actions or gatherings of universal, or even cosmic, significance will make sense and be of real interest in the context of the techno-sciences.

The fact that the recent development of the city of Shanghai rests on a thousand-year-old culture has not prevented the city from being wholly oriented towards the future, not a future of re-construction but of an opening up to the world, even if it unfolds in ways that are politically and economically contradictory. It is the "ultimate" building site in its search for innovation, without comparison on earth and, above all, without fixed or even social rules. This is undoubtedly what constitutes this city's special and original character. Let us hope that, in contrast to the global role that Shanghai played by universally welcoming exiles from a Western world that was marching towards World War II, another phase will emerge between now and 2010. Shanghai will not become the center of the world simply because it is a gateway to China. It is not a new Babylon (think about the imaginary city evoked by Constant, a Situationist, almost half a century ago), even though, prior to World War II, it was an exile that sheltered people from around the entire world in the "Shanghai Hotel" so well described by the novelist Vicki Baum in 1938, before she went to live in California.

The city might merely become a new set of themes that are interactive on a virtual level provided by companies, such as Google. Urbanity will not become particularly innovative in Shanghai if artists are proportionally less and less able to creatively imagine interfaces and installations that are capable of addressing current issues and rising beyond mere documentary and museum-oriented explorations.

From April 2 to May 7, 2006, the exhibition "Invisible Layers, Electric Cities" at Island 6 Arts Center in Shanghai – curated by Allard van Hoorn, Margherita Salmaso, and art director Thomas Charveriat – explored the contemporary city. The press release informs us that

> *the urbanization process is a complex matter: the aggregate effect of human interaction constantly eludes major attempts at urban planning; the cold search for control over the various elements of city life is always confronted with chaos and disorder, as natural aspects of multiplicity. Multiplicity produces the reality that we experience; through its constantly re-combining forms, it teaches us how to look at the world and reminds us that cities have myriad reflections. (...) The exhibition thus intends to show how creative processes can share lessons in multiplicity, which then become the groundwork for the aesthetics of the exhibition. Here, artists emphasise the constant play of urban "difference." Various layers of civilization are combined and recombined, put in new relations, connected through a thrilling electric breath, permeated by intersecting emanations and transmissions of life information.*

During my visit to another exhibition, at the Shanghai Urban Planning Exhibition Hall in People's Square in December 2005, I was able to see two installations evoking the preparations for Shanghai 2010 and ways in which to engage with the future. One of these was a video that opened like a window onto a planetary level, featuring documentary images drawn from the five continents, functioning as a reminder of our multiple cultures, and bringing to mind the national pavilions at the global get-together of the World Expo. It should be pointed out that the point of view of the video seemed to be "cosmic" since it was rotating in line with a satellite whose trajectory started and ended the pictorial animation. Another installation, involving multiple interactive panels, documented the plans for computerizing the city of Shanghai. It consisted of an immersive space providing a 360º view of the city by means of computer graphics.

This text establishes a link to and between ISEA 2010 and SHANGHAI 2010 in order to imagine what action one might take in a city to create a major event that

connects to the whole planet. We are living in a time of "smart mobs" [3], which I define, experience, and direct as "digital mobile wireless systems." We are talking about these systems with groups of industrial researchers in Europe, through the 3i3s association, or with computer artists who have already worked for World Expos, such as Emmanuel Sévigny who contributed to the Canadian Pavilion in 2000 and 2005. Our research has already been the subject of interviews with Martin Robain, the founder of the Architecture Studio (Paris – Shanghai) agency, who presented the City of Shanghai's successful proposal to the committee for the World Expo. The real and imagined city of Shangai, whether for good or bad, will certainly resonate a formal relationship with the daily experience of the people who dwell and live there, directly and in real time. The forthcoming World Expo in China is an opportunity to achieve this change, and we are open to all other exchanges and partnerships on this future path. We are convinced that a "New World City" is about to emerge, partly in Shanghai, and that an operating interface with frameworks and virtual limits – to be explored beyond the classical and modern codes of urban development or aesthetics – will be key in the process. We are now at the beginning of the gateway to the third millennium. In this sense, the "interactive" city is no longer an imaginary utopia but an atopical reality. That is to say, there are no illusions apart from those that allow us to dream up and determine its forms, not in terms of a "Fantasy Architecture" replacing a surveillance society, or a secure prison, but in terms of an open planetary territory enabled by new technologies. [4]

Franck Ancel
http://franck-ancel.com
http://remixarts.com
info@franck-ancel.com

References:

[1] http://www.olats.org/reperes/biblio/compterendu/rbar-banti.shtml

[2] http://www.3i3s.org/

[3] http://www.smartmobs.com/

[4] *Fantasy Architecture* 1500-2036, National Touring Exhibition organized by the Hayward Gallery, London for Arts Council England (2004), ISBN 1 85332 240 7.

Color Photo: Shanghai 2005. Franck Ancel.

The Archival Event: Thinking Electronic Art Via Cornell's Goldsen Archive of New Media Art

Timothy Murray

Cornell University's Rose Goldsen Archive of New Media Art is an archival repository and study center with a broad array of international new media art and its documentation. In 2002, I founded the Archive, which I continue to develop and curate in the Cornell Library's Division of Rare and Manuscript Collections. The Goldsen Archive profits from this Division's commitment to the public access of its materials and growing interest in digital preservation. The archive is the repository of significant holdings of Internet art, anchored by the Ljubljana Infos 2000 collection, which I curated with Teo Spiller; the collection of CTheory Multimedia, which was produced in the Cornell Library under the curatorial direction of me and Arthur and Marilouise Kroker; the annual competition in new media art administered by National Video Resources with assistance from the Rockefeller Foundation (some fifty sets of dossiers and work samples annually)[1]; as well as the holder of perhaps the world's most extensive collection of art on CD-Rom, a collection anchored by the CD-Roms from 23 countries in the exhibition Contact Zones: The Art of CD-Rom[2], which I toured internationally from 1999-2004. To the end of enhancing preservation, for example, we have applied for major grants from the Langlois Foundation and the Institute of Museum and Library Services, but have been unsuccessful thus far in making a convincing enough case for the merits of preserving this Archive.

The Archive also houses extensive holdings of new media art and documentation from the Pacific Rim. In addition to individual artworks and collections on CD-Rom, DVD-Rom, and the Internet, as well as digital video from China, Hong Kong, Taiwan, Japan, Australia, and the broader Pacific Rim, it features two specialized collections of immense value for the understanding of contemporary Chinese art. The Wen Pulin Archive of Chinese Avant-Garde Art includes 360 hours of digitized video documenting contemporary Chinese art events and installations since 1984. The Yao Jui-Chung Archive of Taiwan Contemporary Art consists of some 8,000 digitized images of paper and postcard invitations to contemporary art events in Taiwan over a twenty-year period, as well as archival footage, stills, and video of new media events and installations. I have been struck by how these collections and the socio-cultural conditions of their production have expanded my sense of the mission of the Goldsen Archive as "archive," as well as the cultural conditions and promises of digitality itself.[3]

In addition to providing a preview of materials in the Wen, Yao, and Goldsen Archives, this talk follows the lead of the Archive's documentation of twenty years of contemporary Chinese art by reflecting on the cultural significance of the Archive's cross-generational gathering of artists from the broader Chinese network (China, Hong Kong, Macau, Taiwan) who create art in the emergent fields of electronic arts, new media, and mixed media performance. Their aim is to situate their past and current projects in terms of the theoretical, social, and political problems posed by the new archival challenges of digital culture and historical transformation. Similarly the endeavor of archiving so-called ephemeral artistic works may require a reconsideration of the aims and imperatives of art-historical research and the archive itself vis à vis greater China in the global context. To position contemporary Chinese art in the "archival event" will require that the participants reflect on their former work in the future perfect: to consider "what they will have done."

The inspiration for this conceptual paradox derives from Jean-François Lyotard's *The Postmodern Condition: A Report on Knowledge.* This book, published in 1979 on the eve of the time period marked by the beginning of the Wen Archive, reflects presciently on the condition of knowledge in a computerized age. In Lyotard's concluding chapter, "Answering the Question: What is Postmodernism?" he poses a question which I believe remains central to the task of thinking contemporary Chinese art in the age of the digital archive:

> *A postmodern artist or writer is in the position of a philosopher: the text he writes, the work he produces are not in principle governed by preestablished rules, and they cannot be judged according to a determining judgment, by applying familiar categories to the text or to the work. Those rules and categories are what the work of art itself is looking for. The artist and the writer, then, are working without rules in order to formulate the rules of what will have been done.*[4]

In the context of Wen and Yao holdings in the Goldsen Archive – which are both ongoing and flexible projects whose cultural and political implications will be understood only as their contents and accessibility continue to develop – the coda of the Future Perfect leads us to

ponder the relation of Contemporary Chinese Art to the Question of the Archive in the Age of Digitality.

The Wen Pulin Archive of Chinese Avant-Garde Art

The Goldsen's development and acquisition of the Wen Archive happened somewhat fortuitously in Dongtai, China, at the edge of the crumbling Great Wall about an hour outside of Beijing. While in China to view the 2002 installation of MAAP in Beijing, I met up with the curator, Shin-Yi Yang, who took me out to the country to visit the home of the new Dongtai Academy of Arts, founded by the Chinese videomaker and critic Wen Pulin. There I learned from Wen that he had been videotaping contemporary art events and rock concerts since 1984, and had been storing the tapes in his Beijing apartment. Given his participation in the Tiananmen uprising, and his subsequent self-exile in Tibet for a number of years, I was surprised that the tapes were able to remain a subject of indifference to the authorities. Since I had finalized the agreement with the Cornell Library to open the Goldsen Archive just prior to that Asia trip for MAAP and ISEA in Nagoya, I realized that this might be an excellent project with which to enhance the Goldsen representation of Asian art. With the invaluable assistance of the curator Shin-Yi Yang, who is Director of The Parking Lot in New York and Art Director of Artist Commune/63 in Hong Kong, and Thomas Hahn, then Curator of the Cornell Library's Wason Collection on East Asia, I negotiated with Wen over the next year to digitize the tapes for preservation outside of China in the Goldsen Archive. Hahn arranged for the tapes to be digitized in Beijing and then moved a set to Cornell to be shared by the Goldsen and Wason collections. We have since mounted some 30 sequences online for intranet viewing by Cornell users. Unfortunately, our agreements require that the materials be viewed on site at Cornell, or elsewhere by users affiliated with Cornell via Cornell net I.D. However, an electronic database provides outside access to the contents of the Archive.[5]

The range of materials stored somewhat haphazardly on these tapes is extraordinary, particularly how it testifies to the rather natural growth of electronic art within the context of contemporary Chinese art. In addition to a variety of artist interviews and footage of work by pioneers in Chinese video and electronic installation, such as Xu Bing, Song Dong, and Weng Fen, the Wen Archive includes footage of the 1988 performance on The Great Wall for Wen's television special, "Great Earthquake," which helped foreground in China the prominence of avant-garde art,[6] documentary footage of the infamous Avant-Garde Exhibition in 1989 whose closure helped spark the Tiananmen Square Incident, as well as clips of numerous exhibitions, performance art and rock events that celebrate the subtle integration of electronic performance and contemporary art in China. Also available for consultation is the video shot by the performance artist, Yang Zhichao, who in 1999 secretly taped the 48 hours that he spent under voluntary evaluation in a mental institution. Prominent throughout the archive, moreover, are examples of how frequently Chinese artists turned the electronic apparatus of surveillance against its governmental agents for the purpose of reflection on what Michel Foucault calls cultural archivization writ large -- the wide range of disciplinary activity grounded in the archive, from the viewing model of the panopticon, educational standards and artistic conventions to diagnosis, data preservation and tracking.[7]

The rather random assemblage of footage found in some 300 tapes, now readily accessible on one hard drive or on separate DVD, testifies to the impromptu actions and cross-disciplinary installations that made the electronic and its pulsating rhythms part of the natural fabric of Chinese art well before the post-Tiananmen incursion of the Western art market. The Wen collection itself also positions the video camera front and center, as a rather natural piece of furniture, at these performance events. The result is that the thought of the archive, or the action of archiving, lies just as much at the center of this momentous art production as did the video camera and now the computer, which so frequently seems to be the subject of address by the artists as they perform their work. The act of accumulating footage never ceases to exemplify the archival function that was so clearly articulated by Foucault in *The Archeology of Knowledge*, a book that appeared in 1969 on the eve of the era of video documentation. "The enoncés of accumulation's density never cease to modify, disturb, turn asunder, and sometimes ruin" the clear focal point of the images they mean to archive.[8] To some degree, this paradox of the ruinous function of the archive, what Jacques Derrida later termed "archival fever,"[9] could pertain to the original BETA tapes themselves, which silently and perilously remained hidden for years, out of sight from the potentially interested scholars, artists, and even authorities while accumulating layers of dust and electronic interference in a corner of Wen's apartment. As users of the Wen collection will discover when they stumble upon the many seemingly arbitrary sequences of video footage stored randomly on the tapes, which now are neatly contained in the algorithmic coda of a portable hard drive, the process of electronic accumulation and its leveling impact on the preciousness of artistic "originals" is crucial to any comprehension of the complex socio-cultural legacy of contemporary Chinese art.

Phantom Technologies: The Chinese Paradox of Feng Mengbo

One young mainland China artist who has gone to great lengths to fuse the discourses of electronic art, artistic practice, and digital cultural is the vibrant figure Feng Mengbo, who joined last fall's Future Perfect

Conference held at Cornell to celebrate the Goldsen Archive's Chinese holdings. Armed with the incongruous tools of computer, brush, and video camera, Feng Mengbo has transformed the ubiquity of video gaming into the discourse of contemporary Chinese art. A masterful player of *Doom* and *Quake*, Feng is one of Beijing's most hotly wired artists who straddles the enigmatic interface of Maoist revolutionary culture and global computer gaming. Fueled by China's paradoxical fascination with global technologies, his game-based paintings, CD-Roms, net art, and installations trace a playful and archivally Pop path between China's youth and elders, West and East, global capitalism, and Chinese communism.

Somewhat ironically, painting was the medium for Feng's first translations of video gaming into the popular culture of post-Tiananmen China. In a Pop appropriation of the revolutionary tradition of political realism, Feng inserted Maoist luminaries and histories into the generic mise-en-scene of his painted stills of computer games. Two stunning series of paintings, *Taxi! Taxi! -- Mao Zedong I-III* and *Game Over: Long March*, bemuse spectators with incongruous images from contemporary Chinese culture. While the image of Mao hails a taxi instead of saluting the Red Army, the cultural heroes of the Long March are depicted as fighting alongside the ninjas and dinosaurs recognizable to the video warriors of the West. While clearly Pop, the political ground of Feng's painterly presentations generates both laughter and reflection, as the spectator ponders the cultural paradox so central to his playful motifs. Where is Chinese art heading at a moment when the icon of Mao is painted not to be hailed, but to hail, to solicit a cultural journey alongside the fast moving icons of global, electronic culture?

These ludic combinations of Chinese history and video culture, which Feng continues to paint, led (in 1996) to his ongoing experimentation with interactive digital works that continue to break new ground in international new media art. Still the most sustained mainland experimentation with new media, his interactive works extend across the divide of CD-Rom, installation, computer game, and internet art. Feng's digital creations quake with the creative flair of his first CD-Rom, *My Private Album*, whose interactive slide collages juxtapose memorabilia from three generations of his family who passed through the challenging benchmarks of modern Chinese history. What we now realize, looking back on this work of 1996, is that Feng's CD-Rom intersected telepathically with similar projects being developed at that same moment by Western artists. New media artists such as George Legrady (US), Keith Piper (UK), Norie Neumark (Australia), and Grace Quintanilla (Mexico) also turned to the interactive depths of the CD-Rom to archive the pathos of family and national histories. Feng might suggest that they strove in common to transform the seductive call of interactive gaming into an engaged blend of the hurts of the past with the pleasures of contemporary computing.

Figure 1. Feng Mengbo, *Q4U*

This certainly would be true of Feng's recent infatuation with the Shareware version of *Quake III Arena*. As he played this game online for months, he recorded his competitions with other global players and then transformed these tapes into his Documenta 11 installation, *Q4U*. Visitors found themselves dwarfed by three interconnected projection screens displaying their manipulation of a game whose protagonist had been morphed through computer modeling into a figure of Feng Mengbo himself. Feng confuses the fictions of gaming culture with the fantasies of militarized time traveling as his pixelated figure traverses the screen while sporting a video camera in one hand, and a plasma gun in the other. [Fig. 1] The artist's animated apparition suspends his figure between auto-portraiture and action figure, a composite image of the two ideals from his childhood, to be an artist or a soldier in the People's Liberation Army. On a broader, global level, we might also appreciate how the insertion of Feng's authorial figure into the exploding landscapes of militarized fantasy also foregrounds the naive identification of young internet gamers with the intoxicating machineries of virtual warfare now sustaining the occupational military campaigns in Iraq and Afghanistan.
It could be argued that Feng himself falls prey to this

ludic blind spot, since he frequently disavows the political agency of his artwork. Indeed, *Q4U*'s next transformation will permit the user to move about on a digital dance pad to control the video game, as if breakdancing to drive the aimless beat of his arcade violence. This latest proposal may provide the key to the seamless transport of Feng's persona into the morphed uniformity of global flow where his infatuation with digital culture might break free of the West's glorification of his Chinese artistry. But Feng's multilayered projects consistently belie any such wired romanticism and even his own distancing from "political art." The authorial figure splashing across Feng's screen always signifies his own complex inscription in the technological interface specific to the People's Republic of China. Even when bedazzled by *Q4U*, spectators familiar with his work will recognize the authorial persona who created his earlier CD-Rom *Taking Mountain DOOM by Strategy*. Here the heroes of the Beijing Opera meet the masters of the video game *Doom*. As Feng greets the user as a roaring stand-in for the infamous tiger in the MGM-logo, he populates the electric landscape of *DOOM* with the revolutionary heroes and tales celebrated in the popular tale Taking Tiger Mountain by Strategy, which appeared as a novel, opera, and film over the course of three decades. Here glorious tales of military and political strategy face off against the strategic sharpshooters of *Doom* in a modern pastiche ripe with cultural paradox.

Given Yao's artistic investment in the cumulative effects of the archive and its transformation through various practices of electronic art, it should not be surprising that the bulk of the materials in the Yao Archive chart the history of the exhibition of contemporary art in Taiwan. In addition to selections from Yao's work, as well as the history of performance art in Taiwan about which he has authored an important monograph, the Yao Archive contains some 8,000 digitized images of invitation postcards to contemporary exhibitions in Taiwan since 1989.

The haunting return of recent Chinese history becomes particularly clear in Phantom Tales, Feng's intriguing 2001 contribution to the Dia Center for the Arts series of Artist's Projects for the Web.[10] Visitors to this site discover a poignant homage to the People's Republic of China that disturbs the numbing pleasures of Internet surfing and gaming. While two flash movies animate Chinese picture books from 1969 and 1972 that glorify the Revolution's response to economic oppression, a third frames Feng's fascination with technology in direct relation to his patrimony as a child of the Cultural Revolution. "The Technology of Slide Shows" animates the 1982 People's Liberation Army book, *How to Create and Play Slide Shows*. Feng's simple flash movies of the ghostings of revolutionary history may suggest that his projects in new media carry lively traces of a complex, political balance between art, culture, and technology. While Chinese politics may be muted in *Q4U*, the energetic resonance of its technological traces, from the camera to the digital archive, is omnipresent in the work of this leading new media artist from contemporary China.

The Yao Jui-Chung Archive of Taiwan Contemporary Art

Were we to seek even a broader combination of the conventions of art and archive in artistic practice, we could turn our attention to the Taiwanese conceptual artist Yao Jui-Chung. Over the past decade, Yao has turned the lens of his camera and his exhibitionary practice onto the historical conundrum of China / Taiwan. Somewhat akin to Feng who positions himself within the representation of Chinese new media culture, Yao frequently inserts himself in his extensive photographic documentation of historical events and locations. In his ironic *Recover Mainland China Action* project (1997), he stands proudly in front of the monuments on the mainland as if to reclaim them parodically for Taiwan. In the stunning installations that are part of this project, eerie light shows illuminate minimalist sculptural transformations of China's proudest monumental forms. The colorful casts and electronic illumination of his installations lend life and playfulness to the more traditional, archival cast of his black and white photos. In *The World is for All-China Beyond China* (1997-2000), his photographs display the artist standing with his hands raised triumphantly in front of the gateways to Chinatowns throughout the globe: Brisbane, Paris, Toronto, London, New York, Victoria, Vancouver, Yokohama, San Francisco. For his 2002 project *Long March*, Yao documents himself standing on his hands in front of sites revered in China for their importance to the Long March, such as The Red Army Hill in the city of Zunyi, Guizhou Province, the Residue Jail in Chongqing where the KMT secret service executed 180 Communist prisoners on November 27, 1949, and the Mao-tai Brewery in Guizhou Province, where Red Army soldiers cured their wounds and soothed themselves with wine. The photographs displayed for exhibition then depict a reversed image in which Yao, now suspended in the open air right side up, "holds up" these cherished Maoist sites, or in his words, "accomplishes the feat of 'shifting the universe.'" In his 2005 digital video project *China Town-*

Dizzy, the digital apparatus incorporates his earlier bodily motions by reversing and flipping upside down the Chinatown gate in Yokohama, the site of the world's largest Chinatown. Finally, his decade long project *Taiwan Ruins* documents photographically the historical, industrial, and natural ruins of the island in a way that provides a chilling documentary of the forgotten sites that mark this island's complex history.[11]

Given his artistic investment in the cumulative effects of the archive and its transformation through various practices of electronic art, it should not be surprising that the bulk of the materials in the Yao Archive chart the history of the exhibition of contemporary art in Taiwan. In addition to selections from Yao's work, as well as the history of performance art in Taiwan about which he has authored an important monograph, the Yao Archive contains some 8,000 digitized images of invitation postcards to contemporary exhibitions in Taiwan since 1989. Personally collected by Yao, either in person at galleries or through the mail, the cards provide an unusually detailed history of contemporary art in Taiwan, from art imagery to the conceptual trajectory of solo and group exhibitions throughout Taiwan. The admirable range of work attests to the importance throughout this period of video and digital art, whether of the stunning group sound exhibitions curated by the leading new media collective ET@T, or the combination of performance and video art by young Taiwanese artists such as Tsui Kuang-yu, whose work I will discuss below. What's also telling and important is the range of conceptual projects throughout the recent history of contemporary Chinese art as well as the presence there of many of the mainland artists prominent in the Goldsen Archives, such as Xu Bing, Song Dong, Shu Lea Cheang, and Feng Mengbo. Indeed, perhaps keeping with his own playful interest in an "All China Beyond China," Yao's archive is much more aggressive than Wen's by documenting the extensive array of Chinese art across greater China, from Beijing and Shanghai to Macau, Hong Kong, and Taipei.

Although Yao refuses to attribute to this project the status of an artistic event, akin to his many photographic archives, it certainly charts his own mobility as an artist and participant in contemporary Taiwanese art history, just as Wen's position behind the video camera inserts him boldly as a participant in his own video Archive. The fact that Yao personally supervised or actually performed the scanning and digital organization of these materials lends significance to his Archive as something of a performance event. Indeed, while we recently worked late into the night to recode the digital organization of these materials, Yao took off on a magically quick performance on the computer as if a VJ mixing and matching his video and sound tracks. Buried deep within the code and quantity of these materials are the many traces of Yao's own conceptual commitment to and intervention in archivization as an artistic practice. His collection bears the performative traces of its energetic artists who remain committed to a "World for All-China Beyond China."

Action Recording and The Repetition of Archival Event [12]

When it comes to electronic art and its relation to archiving, Yao and his curatorial collaborator, Shin-Yi Yang, have insistently turned my attention to the work of Tsui Kuang-yu, the Taiwenese artist who has developed in his work a complex approach to archivization that contributes in exciting ways to my own thinking about the role of the archive in the age of electronic art. The roots of the artistic events of Tsui Kuang-yu that are featured in the Goldsen Archive go back to his 1996 performance *Imitation/Mimicry*. Viewers of this performance witness a performer bend and shape his torso and limbs to approximate the contour and position of various natural bushes and landscaped trees next to which he performs. Throughout this piece the artist contorts his body to be in consort or dialogue with natural landscape forms and their architectural repositioning. Tsui Kuang-yu's performance takes art back to nature in a way that imitates the harmony of landscape, the elegant simplicity of historical painting, and even the aesthetics of landscape architecture.

The conceit of *Imitation/Mimicry* derives from the artist's particular fascination with biological mimicry. His corporeal contortions approximate the process of natural mimicry through which various insects are able to adjust their color and texture to blend in with the environment. Tsui speaks passionately of his interests in the individual's "interjection" in environments as well as "a given environment's capacity for tolerance." Aligning his art with the artistic tradition evoked by the surrealist thinker Roger Caillois, the artist experiments with the assimilation of human actors in the fluid space of nature. In this context, Tsui's art imitates mimicry.

Tsui's fascination with mimicry deeply impacts the performer's relation to space as well to identity. The performer's interjection in the environment suggests a giving over of self to nature or something of an extension of the boundaries of subjectivity into the architectonics of space. Callois spoke passionately of how mimicry opens the human actor to the "devouring force" of space:

> *Space pursues them, encircles them, digests them. […] It ends by replacing them. Then the body separates itself from thought, the individual breaks the boundary of his skin and occupies the other side of his senses. He tries to look at himself from any point whatever in space. He feels himself become space […] He is similar, not similar to something, but just similar. And he invents spaces of which he is "the convulsive possession."*[13]

Something of the convulsiveness of the similar possesses the performer throughout Tsui's recent work. In a humorous 2001 trio of sequential works, *An Array of Eighteen Copper Guardian Coins in Shao-Lin*, to penetrate, the actor is possessed, or penetrated, by series of physiological events that underscore the psychic and corporeal extensions of mimicry's uncertain possessions. In the performance subtitled the Spontaneous, the actor appears in various environments only to be overcome by the sudden expulsion of vomit. In the series subtitled *the Penetrative*, he spasmodically crashes headfirst into various unyielding obstacles and surfaces, from animals and statues, to polls and video walls. Finally, in "the Perceptive," he is struck repeatedly on the back of the head by flying objects that he attempts to name on the basis of their sensual similarity. But his archival attempt to name all of the objects striking his head, from book to TV set, is rendered senseless by the indistinguishable nature of many of the blows ("I don't know"). These parodic performances, made humorous by their uncanny repetitions, literally invent scenarios that depict the actor's "convulsive possession" just as their viewers mimic Tsui's artistic interjection through the affective displacement of laughter.

This relation to the viewer is crucial to Tsui who categorizes his work as "action art" in order to foreground how performance actively situates the audience in the occupation of space and time, and highlight the performer's reciprocal insertion into the space and action of the audience. His more recent series *The Shortcut of Systematic Life* literally enacts such reciprocity of art and everyday life in an impressively wide range of contexts. In *The Shortcut of Systematic Life - Superficial Life*, the actor moves rapidly via montage between various sites. He carries a backpack that contains one-sided suites of clothing that he puts on and discards along the way. Each costume permits the actor to mime the codes of color and decorum appropriate to each circumstance and its articulation within a broader social context of commodity culture and everyday life in a society of global capital. In front of an office building, he puts on a suite. When he arrives at a 7-Eleven Store, he adopts the colors of the company uniform; at a public square, he dresses to match the colorful outfit of those gathered to perform yoga; when he comes to a school, he puts on a student's uniform; outside a taxi stop, he puts on a driver's clothing and zooms away in a taxi. Tsui thereby aims to blend in with the environment to produce "an effect of disguise" while yet exhibiting the "dissonance among various pre-established identities." It is precisely this blend of mimicry with dissonance that lends to Tsui's work such a productively aesthetic charge.

Limitation of critical attention only to Tsui's widespread emphasis on mimesis would be forgetful of aspects of even his earliest performances to which dissonance is crucial: their inscription on video and their agonistic seriality. Fundamental to his performances is their staging for video, as well as the juxtaposition on video of sequences of various related performances whose conceptual depth derives from the dissonance of their seriality. In this context, the mimicry of art performs the agonistic differences of imitation.

Contributing to the playful dissonance of Tsui's "action art" are the structural elements of repetition and difference upon which the artist relies. The repetitive sequentiality of the series itself inscribes the artwork in the ongoing, agonistic display of difference. This viewer is struck by how the continual variation of Tsui's sequential performances foregrounds the mimicry of the artist's theatrical procedures of imitation rather than any seamless blending with his environment and the openness of its space. When the performer changes costume in front of exercisers and students arriving at school, his action removes him from the naturalness of the scene as much as it inserts or "interjects" him in color codes of the given environment. We witness these events on the fringe or the surface of ongoing activities; we see them as deconstructive masquerades and mimicry of social customs and cultural practices whose procedures have become naturalized as everyday practice. Even when he joins in common procedures of realistic naturalization, by actually riding a bike or driving a taxi, he openly sports the backpack that reveals his platform of display: the one-sidedness of his costume, into which he easily climbs in and out, as well as his playful presentation of the props of theatricality. The result is agonistic mimicry or dis-play of code as institutionalized performance. While institutionalized behavior may be an ongoing element of the social context of everyday life, whether dictated by the demands of consumer society or the socialized procedures of group exercise, its pre-established identities are shown by Tsui to be no more stable than the one-sided costumes which he puts on and sheds at a moment's performative notice.

It must be stressed, moreover, that the verve of Tsui's work derives not so much from live performance as from the artist's "interjection" in the mechanism, procedures, and display of video. What helps to make *The Shortcut of Systematic Life* so amusing or disgusting (depending on whether we are witnessing a repetitive change of costume or a continual heaving of vomit) is the disjunctive repetition and sequentiality of events as they are recorded and edited on video. We see, as witnesses, the split of time and space, the agonism of temporal and spatial disjunction, marked by the rapid shift of video sequences, just as we move in time with the tracking of camera and the motion of the screen. Keeping with the video-event, the performer frequently moves in and out of screen or sequence. Most notably in *Superficial Life*, he rides, runs, and drives from site to site. The motion of passage is marked by the electronic fissure, by the movement in-between sequences. The corporeal "presence" so crucial to performance makes way for the temporal complexity of video "event," as it moves between the now of witnessing, the past of the archival moment,

and the future of the unfolding track that treats us to the delightful eternal return of the video loop. In essence, the interface with the video event never stops throughout the duration of the installation.

It is no coincidence that the accurate translation of the Chinese phrase, "action art," is "action recording."[14] Crucial to this project is the mediation of recording as an action of the archive. Tsui's videos diverge from earlier conventions that linked performance and video. His action recordings are strikingly dissimilar to first-generation video performances that staged the narcissistic heroism of Vito Acconci and the mournful wailings of Linda Montano. Tsui's authorial role in video is to serve more as a physical carrier of the archival registry in continuous variation. He becomes the surface medium of mimicry, the discharger of intestinal fluids and their subsequent affect, the head-banging apparatus of dissonance, the stationary contortion of natural form, the physical impediment of flying objects. Rather than standing forth as the hero of video art, the performer thus serves as something of a recording device, one that bears the marks of projectile resistance and the motions of cultural passage. At issue is nothing close to the performance of self but the literal recording of action, of event, of passage, of archival bits for subsequent recombination in video display and installation. The performer doubles as an archival prosthesis of archival testimony to the repetition of the event and the dissonance of mimicry's archive. The videos of Tsui Kuang-yu thus confront the curious viewer with the convulsive possession of archival data and video event. Recorded in action, his video data awaits retrieval by viewers whose witnessing will carry on the enigmatic flow of the dissimilarity of mimicry and the differing agonism of archival event.

Indeed, the archival event requires a critical rethinking of the meaning of the archive in the age of electronic art. At stake is a reconceptualization of art away from critical dependency on the narrative of history, the psychology of identification, and even the heroics of connoisseurship. I leave you with the words of Jean-François Lyotard for whom thinking electronic art, like its archiving, "consists in receiving the event":

> *To think is to question everything, including thought, and question, and the process. To question requires that something happen that reason has not yet known. In thinking, one accepts the occurrence for what it is: "not yet" determined. One does not prejudge it, and there is no security. […] It would be presumptuous, not to say criminal, for a thinker or a writer to claim to be the witness or guarantor of the event. It must be understood that what testifies is not at all the entity, whatever it be, which claims to be in charge of this passibility to the event, but the event "itself." What memorizes or retains is not a capacity of the mind, not even accessibility to what occurs, but, in the event, the ungraspable and undeniable "presence" of a something, which is other than mind and which, "from time to time," occurs.*[15]

Timothy Murray
Department of Comparative Literature
Cornell University
Ithaca, New York 14853

References:

[1] National Video Resources, Program for Media Artists, http://mediaartists.org/
[2] Timothy Murray, *Contact Zones: The Art of CD-Rom,* http://contactzones.cit.cornell.edu
[3] These collections have resulted from my many collaborations with the Taiwanese curator Shin-Yi Yang, who is Director of The Parking Lot in New York and Art Director of Artist Commune/63 in Hong Kong; my curatorial work in Australia; as well as my consultant role in the planning of *Dissection: A New Epoch in Electronic Inter-action - an International Multimedia Art Exhibition*, one of China's first exhibitions dedicated to multimedia, at the Museum of Macau in 2000.
[4] Jean-François Lyotard, *The Postmodern Condition: A Report on Knowledge*, trans. Geoff Bennington and Brian Massumi (University of Minnesota Press: Minneapolis, MN, 1984), p. 81.
[5] Wen Pulin Archive of Chinese Avant-Garde Art, http://wason.library.cornell.edu/Wen/index.php
[6] See Gao Minglu, "The Great Wall in Chinese Contemporary Art" in *positions: east asia cultures critique 12, Number 3* (Winter 2004), p. 775.
[7] Michel Foucault, *Surveiller et punir: Naissance de la prison* (Gallimard: Paris, 1975), pp. 135-230.
[8] Michel Foucault, *L'archéologie du savoir* (Gallimard: Paris, 1969), p. 164.
[9] Jacques Derrida, *Archive Fever: A Freudian Impression*, trans. Eric Prenowitz (University of Chicago Press: Chicago, IL 1998).
[10] http://www.diacenter.org/mengbo/
[11] Documented in Jui-Chung Yao, *Roam the Ruins of Taiwan* (Garden City Publishing: Taipei, 2004).
[12] I have published a slightly different version of this section on Tsui in the catalogue of his recent exhibition at the Chelsea Art Museum. Shin-Yi Yang (ed.), *You So Crazy: Kuang-Yu Tsui's Video Works* (Chelsea Museum of Art: New York, NY, 2005), pp. 8-9.
[13] Roger Callois, "Mimicry and Legendary Psychasthenia," *October 31* (Winter 1984), p. 30.
[14] Michelle Kuen Suet Feng, "Tsui Kuang-Yu" (2005), http://www.ontherundesign.com/Artists/Tsui_Kuang-Yu1.htm
[15] Jean-François Lyotard, *The Inhuman*, trans. Geoffrey Bennington and Rachel Bowlby (Stanford University Press: Stanford, CA, 1991), pp. 74-75.

Device Art: A New Form of Media Art from a Japanese Perspective

Machiko Kusahara

Device Art is a concept for re-examining art-science-technology relationships both from a contemporary and historical perspective in order to foreground a new aspect of media art. The term "Device Art" may sound obscure, or even self-contradictory, but it is a conscious choice. The concept is a logical extension of a change in the notion of art that already started in the early 20th century with art movements such as Dada and Surrealism. More recently, interactive art has redefined forms of art and the role of artists. What we call device art is a form of media art that integrates art and technology as well as design, entertainment, and popular culture. Instead of regarding technology as a mere tool serving the art, as it is commonly seen, we propose a model in which technology is at the core of artworks. As I will discuss later, the concept took shape on the basis of an analysis of works by contemporary Japanese media artists. Features surfacing in many of these projects include interaction, a positive attitude towards technology, and playfulness. The influence of Japanese cultural tradition can be clearly traced in these haracteristics. Another aspect of this work is the artists' involvement in fields such as design, entertainment, and commercial production, which becomes evident in the approach of internationally recognized artists such as Toshio Iwai, Nobumichi Tosa (Maywa Denki), and Kazuhiko Hachiya. This approach, which is often considered suspect from a Western point of view, is actually a natural part of Japanese art. A long history of visual culture that developed independently from Western paradigms of art plays an important role in the Japanese art scene, offering artists wider possibilities for bringing their concepts outside of the context of museums and galleries.

While theoretical analysis is an important part of the Device Art project, producing artworks according to its concept is the key element. The project launched in the fall of 2004 and has been pursued by nine artists and researchers, with a five-year grant from the Japan Science and Technology Agency, since the fall of 2005.[1] The aim of the project is not only to create "device art" but also to develop a working model for producing, exhibiting, and distributing these works, and theoretically frame them. Making these artworks accessible to a wider audience and users outside of the museums and galleries is part of our agenda. Development of hardware and software modules to support the art practice is also planned.

Background of the Project

Japanese works have been highly visible at international competitions in the field where art and technology meet, and often involve original interface design based on proprietary hardware. Toshio Iwai, the internationally recognized media artist whose collaborative work with Ryuichi Sakamoto won the Golden Nica at Ars Electronica in 1998, is an example of an artist creating this type of work. At SIGGRAPH 2005, *TENORI-ON*, a prototype he developed with Yamaha, attracted much attention for its unique features and refined design. The piece consists of a matrix of illuminated touch-activated buttons that serve as both input and output mechanism. Nothing else is needed: the interface / display itself is an innovative musical / visual instrument. After having explored a similar idea for years on different platforms, including portable game machines and cell phones, the artist considers this the ultimate version. The work is a device that enables anyone to play sound and enjoy images without any learning process; it is simple, beautiful, and self-contained, with open interaction for users. As the piece is made of transparent acrylic to make the light patterns visible from any direction, its function also becomes transparent. The choice of materials is thus crucial in realizing the artist's concept.

While theoretical analysis is an important part of the Device Art project, producing artworks according to its concept is the key element. The project launched in the fall of 2004 and has been pursued by nine artists and researchers, with a five-year grant from the Japan Science and Technology Agency, since the fall of 2005.

Interest in hardware-based artwork with original design also is a key element in the activities of Maywa Denki, an "art unit" led by Nobumichi Tosa. [Fig. 1] Mixing low-tech and high-tech, he designs and manufactures strange looking robotic instruments that are performed by him or in collaboration with his "employees," or pre-programmed, or sold to enthusiastic Maywa Denki

fans.[2] Although they often look odd and incorporate crazy ideas, the instruments function perfectly well. They are constructed on the basis of his knowledge and understanding of technology and material, as well as the practical skills required in cutting and molding metal parts, and working with programming chips and computers. While the instruments look strange, their mechanism is clearly visible to the audience, and Nobumichi Tosa even explains how they work during the performances. The fact that the robotic instruments occasionally do not immediately function properly also becomes part of the performance. It is important to the artist to keep the technology transparent and visible, including the possibility of its malfunctioning. Criticism of an industry that hides the "IT" behind a "wall" is an important part of his concept. With his funny robots and devices, Tosa insists that technology should not become a black box.

Figure 1. Nobumichi Tosa (Maywa Denki) with his sculptures.

The creation of entertaining works with original, physical interface design is a field not limited to professional artists. For the past few years, SIGGRAPH's Emerging Technologies (E-Tech) and Art Gallery have been filled with Japanese art works and research projects, including numerous ones by students.[3] With approaches ranging from Hi-tech to low-tech, they have come up with original and playful ideas involving unexpected uses of technologies. At SIGGRAPH 05, visitors could push around a tea can on a table and simultaneously see on a screen how little virtual creatures, *Kobitos*, performed the visitors' action [Fig. 2]; or suck different kinds of virtual food and drink through a plastic straw, while the actual pressure, vibration, and sound produced by drinking would be simulated by the system.[4] [Fig. 3] At SIGGRAPH06, participants could touch a soap bubble, with images projected on its surface, which would produce sound when it broke upon touch.[5] [Fig. 4] Or they could chase the shadows of invisible goblins, suck them up with a vacuum cleaner, and feel their weight.[6] As these examples show, a combination of interaction, application of physical material and custom-made devices, as well as playfulness characterizes many of these works from Japan, be they meant as art or research. An affirmative attitude towards technology is another crucial feature of these projects. Technology is not treated as something that should remain hidden behind an artistic concept, or something that instigates fear; rather, it is an important part of these works to make visible to the audience / participants what technology has to offer. However, this does not mean that the technologies used are idealized. Even the risks accompanying technology can be represented in a playful manner, as in the case of Maywa Denki's performances and custom-made electronic instruments. The bare circuits occasionally emit sparks when the instruments are played by the artist, who comments, "Hundred volts – very dangerous!"

However, works that are highly appreciated in Japan are often criticized by the Western art community for their lack of seriousness. These criticisms are often related to the entertainment factor in the works and their affirmative attitude towards technology, which are both typical of Japanese works, as indicated earlier. However, being critical does not necessarily require being serious or negative towards technology. This issue is deeply rooted in each of the societies' histories, particularly the effects of the industrial revolution.

In Europe and in the United States, the industrial revolution and automation are remembered as extremely negative and inhuman experiences for average people. Films such as Fritz Lang's *Metropolis* and Charlie Chaplin's *Modern Times* both illustrate this attitude. The experience certainly was different in Japan, where the industrial revolution took place much later in a short period of time in which the country was trying to catch up after more than two hundred years of isolation.[7] This also connects to the tradition of using science and technology for entertainment purposes rather than practical applications. Japan had a long period of peace until the mid-18th century when it opened its borders and the latest technologies and scientific instruments were imported and utilized for entertainment instead of "practical" purposes such as the manufacturing of weapons. Technology was something to be enjoyed rather than something to be feared.

The close relationship between art, entertainment, and design, as in the case of artists creating artworks on game platforms, games themselves, or commercially available products, may also seem problematic from a Western perspective,. Toshio Iwai's *TENORI-ON*, which I referred to earlier, has been developed in collaboration with Yamaha. His *ELECTROPLANKTON* is an artwork to be played on the Nintendo DS game machine. As in the case of *TENORI-ON*, the software invites users to

Figure 2. *Kobito: Virtual Brownies.*

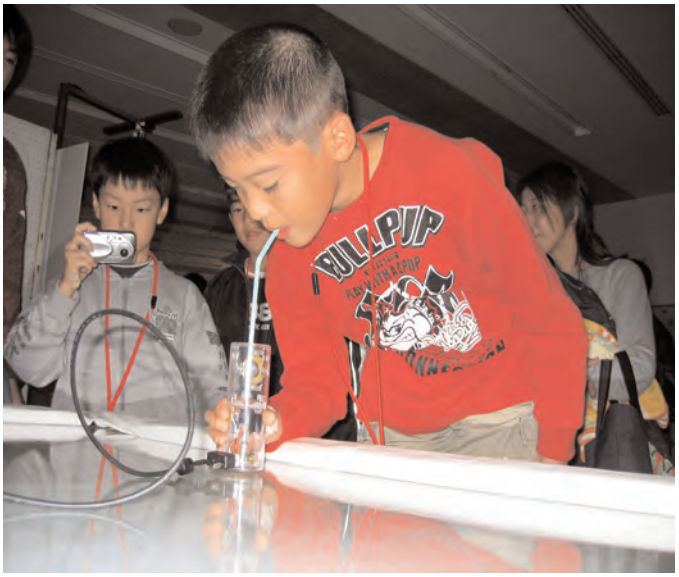


Figure 3. *Straw-like User Interface (SUI).*

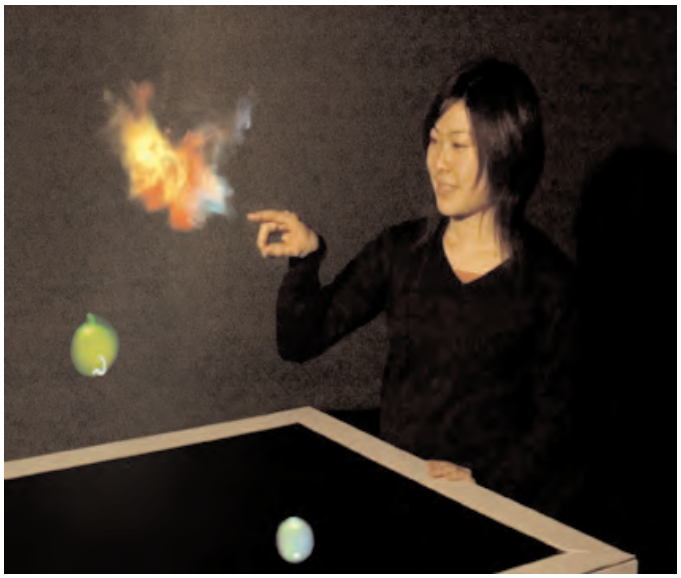


Figure 4. *Bubble Cosmos.*

enjoy the audiovisual experiences they create.

Games, toys, and gadgets created by artists are not very common, but they are not a rare phenomenon in Japan and are widely accepted as a part of popular culture. *Bitman*, for example, is "high-quality jewelry" anyone can enjoy, as its creators Maywa Denki and Ryota Kuwakubo claim.[8]

The 7cm x 7cm white plastic frame with an 8x8 matrix of red LEDs displays the pixeled image of a man, a figure familiar from early games. [Fig. 5] Hung with a chain around one's neck, the bitmap image shows a real time animation of *Bitman* trying to keep his balance in the swinging world. By shaking the "jewelry" one can make *Bitman* dance.ix The movement of the digital bitmap character is created in real time as the embedded sensors detect acceleration and tilting of the panel. The product is commercially available along with other goods developed by the artists. The distributor of the piece is Yoshimoto Kogyo Inc., the king of Japan's entertainment business, which hires most of the standup comedians appearing on Japanese TV. Nobumichi Tosa himself (who leads Maywa Denki as its "CEO") is officially an employee of Yoshimoto, although he recently separated some of his activities from the company.

While Tosa, with his strong commitment to consciously crossing the border between art and entertainment, is a special case, the boundaries between art and related fields are not as rigid as in the West, because the notion of art itself is different, as is widely known. Some of the best paintings in Japanese art can be found on sliding doors and folding screens. Famous artists, such as Hokusai or Hiroshige, made woodblock prints for the public. Distinctions between notions such as fine art and applied art, or high art and low art, do not exist. These distinctions appeared and became standards in Western art history. In Japan, with its different social and cultural background, these classifications were not made. Although the Japanese art system has been western-

Could artists publish their work as software running on a popular gaming platform and still claim it to be an artwork? They probably could. To put it another way, could digital "content" that is commercially available and runs on a game platform be seen as an artwork? How about a gadget, or a machine?

ized over the past one hundred years, there still exists a cultural tradition that encourages artists and the audience to share artistic experiences outside art venues.

Art in the Age of Digital Reproduction Technologies

There have been long discussions on how better relationships between art and technology could be established. However, traditional art paradigms are still powerful enough to make art curators and even artists hesitate when it comes to exploring what media technology may mean to art. In order to recognize the boundaries we have taken for granted, we could ask ourselves the following questions:

Figure 5. Maywa Denki and Ryota Kuwakubo, *Bitman*

Could artists publish their work as software running on a popular gaming platform and still claim it to be an artwork? They probably could. To put it another way, could digital "content" that is commercially available and runs on a game platform be seen as an artwork? How about a gadget, or a machine?

Many might hesitate to answer yes. However, we have already seen examples of these projects by artists who make their works, running on game platforms, commercially available. Could we claim that they do not qualify as artworks because they exist outside of galleries and museums? (They often have been exhibited in art venues as well.) Or are they not art because they are not sold on the art market? How do we define art?
We live in a postmodern society of mass-produced objects, simulated realities, and simulacra. The aura of the original, which has been valued by the art world for so long, becomes questionable for artists coping with the reality of our society today. The situation has become even more complex since an essential feature of digital technology is to enable the production of multiple, completely identical copies.

In the beginning of the 20th century, Marcel Duchamp already turned the idea of "originality" upside down with his *Fountain* piece, two years after he had moved to the United States where the effects of a mass-production-based consumer society were clearly visible.

In the 1960s, Nam June Paik created video sculptures by combining TV monitors and video images that were either appropriated from regular TV programs or commissioned from younger video artists. Commercially produced TV sets and news programs became original once they had been reconfigured according to his concept and "signed" by the artist. What, then, could be the position of an artist in the age of digital reproduction technology with regard to the notion of originality, the role of an artist, or the "sublime" experience that a great piece of art is supposed to bring to its viewers?

There could be multiple answers to this question, and different approaches to recognizing projects as artworks. One possible answer would be that what qualifies a project as art has nothing to do with the uniqueness of the physical component. A work that exists in multiples, even if they are not numbered as in the case of many lithographs or "original" photographs, becomes a piece of art if it brings artistic experiences to its viewer. That brings us back to a question we had asked earlier: what is the difference between a piece of art and a commercial product, or a designed object?
These questions have not been fully answered, but cannot be avoided. Device Art is a movement aimed at openly raising these questions and proposing possible answers that make sense in the age of digital technologies.

So What Is Device Art?

The term "device" usually means an instrument that serves to achieve a certain effect as part of a process. In the case of art, the goal has traditionally been an effect that the final work has on its viewers. A device used in realizing the work is not necessarily an essential part of its content – it only plays an instrumental role in the process of production. In other words, the goal and the device used for achieving it belong to different hierarchical levels. The device serves the goal.

This has been true for most traditional art. Oil paint or brushes are not considered essential in the process of presenting and appreciating a painting, except as the tools or medium utilized for its creation.

The role that media art plays in art history has not been thoroughly explored, and questions raised by people such as Walter Benjamin, Jean Baudrillard, Marcel Duchamp and Nam June Paik have not been fully answered in a media art context.

However, this no longer remains true when it comes to art forms such as interactive installations. The choice of technology has a significant impact on the theme and concept of media art for several reasons. Artists might use media technology in order to express their thoughts on the social / political / cultural ramifications of the technology. The experience provided by an artwork also depends on the technology used. In the case of interactive art, visitors / users touch and manipulate the artwork instead of contemplating a static painting on the wall. Devices are often involved in the experience of an artwork.

As a concept, Device Art is rooted in the analysis of the key role that devices play in certain types of art, that is, artworks involving hardware (a device) specifically designed to realize the artistic concept. The device itself can become the content. Technology is not hidden, its function is visible and easy to understand, while it still brings about a sense of wonder. Well designed interfaces made of the right materials facilitate interaction for users, often in a playful manner.

To summarize, a device could be the "body" of an artwork that offers an artistic experience to its users / participants. In other words, the "resulting" experience cannot be separated from the device specifically designed or chosen to enable this experience. Producing multiple copies of such work and distributing it as a commercial product makes it accessible to a wider audience, provided the piece is designed in such a manner that anyone could use and enjoy it. An artist's concept could become a part of people's lives, rather than being kept in museums and galleries. Why not share art with more people?

Interestingly enough, these ideas sound familiar to the Japanese. Cultural traditions such as the tea ceremony, flower arrangements etc. are based on this understanding. It is obvious that the goal of a tea ceremony is not to just enjoy a cup of tea. The importance lies in the whole experience, including the process and the devices used, such as teaspoons and bowls. These tools are functional and made of appropriate materials, and yet there is something more to them than just usefulness. We know that refined tools can make one's life easier. They also serve as a medium in communicating with others. In a tea ceremony, correctly chosen devices change the whole experience.

This could also be applied to art. It is problematic to separate devices from experiences if the experience is only possible through the use of devices consciously chosen for their purpose. This obviously does not only hold true for Japanese media art, but the underlying idea is already part of Japanese culture.

Conclusion

The role that media art plays in art history has not been thoroughly explored, and questions raised by people such as Walter Benjamin, Jean Baudrillard, Marcel Duchamp and Nam June Paik have not been fully answered in a media art context. Fluxus and Neo-dada artists used Xerox machines to investigate what multiple copies might mean to art, but we have not yet found a coherent art paradigm for capturing the impact of the age of digital reproduction technologies.

Device Art is a concept that pushes the boundaries of media art and inherits the legacy of the experiments artists have been conducting with media technologies. By raising questions regarding possible relationships between art and technology, the role of hardware-based devices, and the borders between art and its related fields, and creating a common ground for artists and engineers to work together as equals, we might find some answers with regard to future directions rather than the past.

We are hoping that Device Art could bring an alternative point of view to art history. We use Japanese art history and visual culture for reference in order toilluminate our approach and how the above-mentioned questions relate to each other. However, what we find in the end might be a global model. Japanese art history just happened to provide a background that allowed artists to think differently.

Media art is a more recent development in art. Device art tries to push media even further. By doing so, it might help to gain a better understanding of the meaning and role of art in a media society.

Machiko Kusahara
Waseda University
1-104 Totsukamachi
Shinjuku-ku
Tokyo, 169-8050, JAPAN
http://www.waseda.jp/top/index-e.html

References:

[1] The project members are Hiroo Iwata (Tsukuba University, researcher in engineering), Kazuhiko Hachiya (artist), Masahiko Inami (University of Electro-Communication, researcher in engineering), Sachiko Kodama (University of Electro-Communication, artist), Ryota Kuwakubo (artist), Taro Maeda (NTT Research Laboratories, researcher in engineering), Nobunichi Tosa (Maywa Denki, artist), Hiroaki Yano (Tsukuba University, researcher in engineering), Machiko Kusahara (Waseda University, media art researcher). All the members have exhibited their works either at SIGGRAPH or Ars Electronica, or both. More information is available at http://www.deviceart.org.

[2] Maywa Denki literally means Maywa Electric Company. The unit adopts the organizational structure of a typical small-scale company that produces electric devices. The artist plays the role of the CEO while student interns and collaborating artists are called "employees." They all wear uniforms and sing the "corporate song" as a part of their performance. The robotic instruments and other works are referred to as "products". Some of them are in fact commercially available. The corporate structure chosen by the artist functions as commentary on Japanese society.

[3] *TENORI-ON* was exhibited at SIGGRAPH 2005, and Iwai's *MORPHOVISION*, developed with the NHK Research Laboratory, was selected for SIGGRAPH 2006.

[4] *Kobito: Virtual Brownies* (http://rogiken.org/vr/english.html), *Straw-like User Interface* (SUI) (http://magno.hi.mce.uec.ac.jp/~inamilab/en/projects/SUI/index.html)

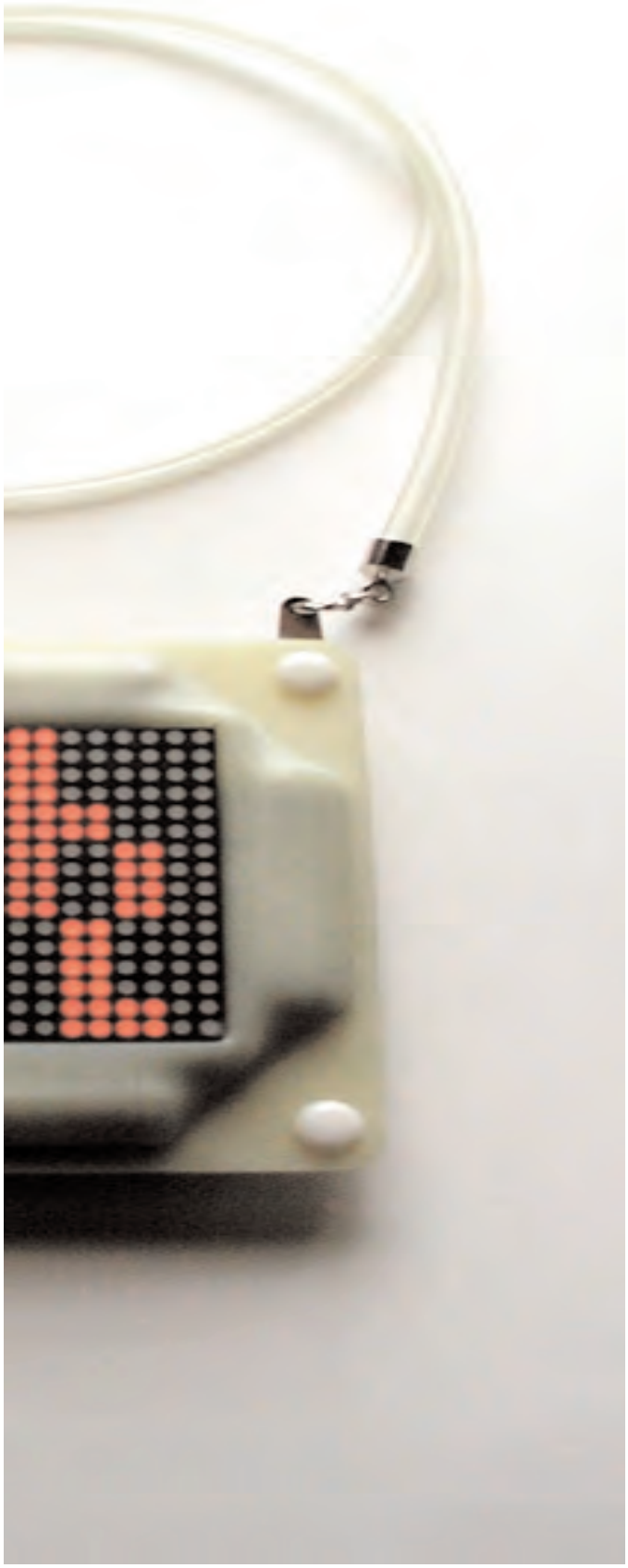
[5] *Bubble Cosmos* (http://in5.jp/bc/english/index.html)

[6] *INVISIBLE - The Shadow Chaser* (http://chihara.aist-nara.ac.jp/ivrc2005/en/invisible.html) These are works that had been submitted to the Inter-College Virtual Reality Contest (IVRC), a student competition organized by the Virtual Reality Society of Japan (VRSJ) since 1993. Besides serving as a major venue for educating the next generation of artists and engineers, it has become an important meeting place for art and engineering students.

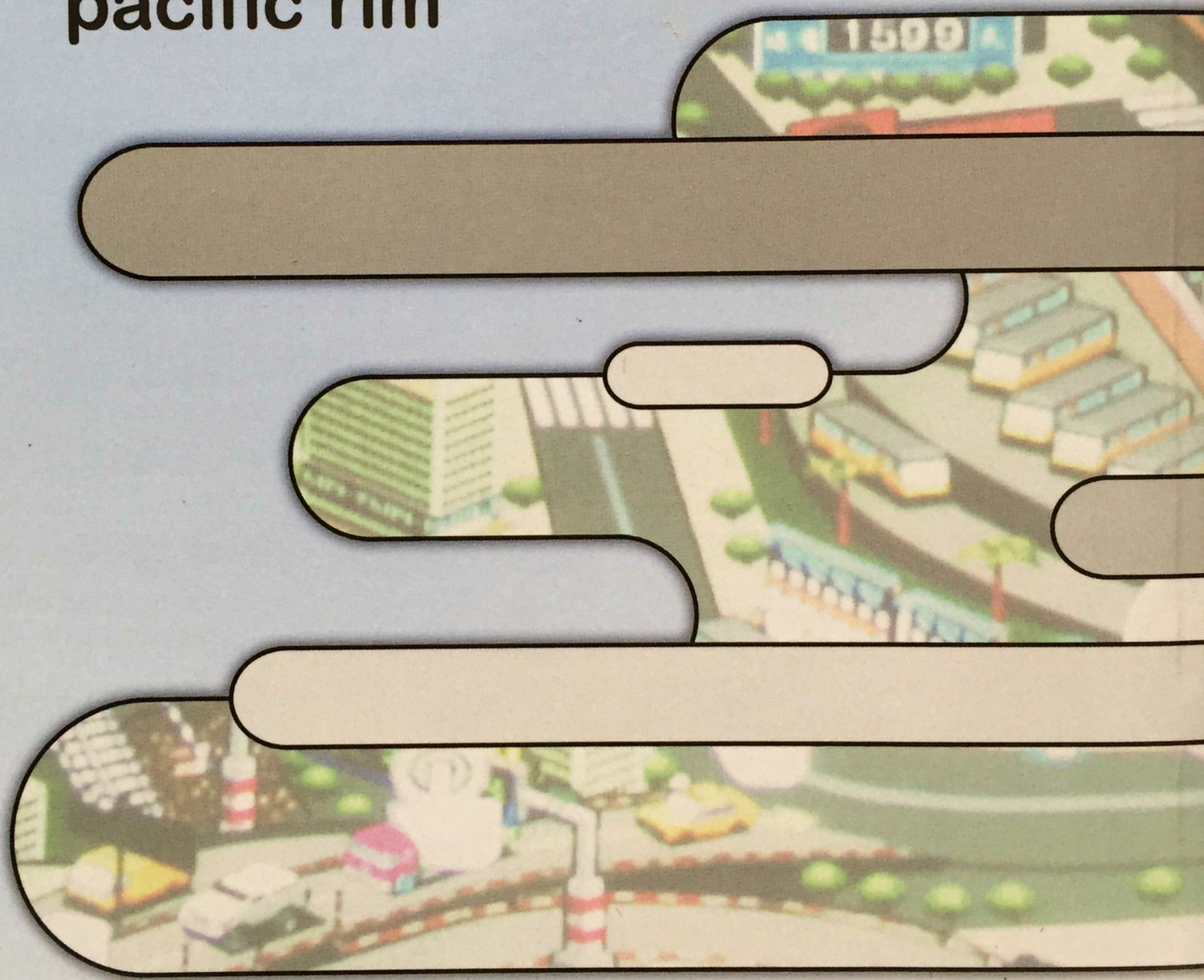
[7] It was not a complete isolation, since restricted trade was maintained with China and Holland during the time.

[8] Kuwakubo collaborated with Maywa Denki on the development of new "products." Both Tosa and Kuwakubo have exhibited internationally at venues such as NTT/ICC (InterCommunication Center) or Ars Electronica. Kuwakubo's works have been shown at SIGGRAPH as well. Tosa's performance in Paris in 2003 was a great success.

[9] http://www.maywadenki.com/mshop_english.html



transvergence
community domain
interactive city
pacific rim



9 787774 587845