

De-commodification of Artworks: Networked Fantasy of the Open

Timothy Murray

What might it mean to situate the open-source movement in computing and digital art in relation to the emergence of independent video? From machine to theory, the medialized networks of video and computing have capitalized on the optimistic discourse of the open, from tool to thought, while being haunted by the discourse of commodity fetishism and the vicissitudes of desire. With the development of alternative media tools in the 1970s, artists and theorists began to think about their creative gear differently, in a way that complemented the open-source movement and facilitated the more recent 'queerings' of tactical media. The rise of the portapak, the development of expanded cinema and the concomitant growth of UNIX, which initiated the later free software and open-source movements, prompted reflection on progressive intersections of theory and praxis. The convergence of the development of tools in video and new media contributed to the sharpening and elaboration of many parallel discursive and theoretical spaces under discussion in the academic arenas of critical theory and cultural studies. Particularly striking is an ongoing shift away from art as commodity and from artist as creative genius to desiring machines and open networks of artistic production and conceptual collaboration.

Speaking of interwoven developments in video and new media, the video artist Woody Vasulka argues in his essay 'The New Epistemic Space' that:

We now have a new creative space, a system of aesthetic practice, and an audience ready for a new aesthetic discourse. We have moved from a relationship with technology in which we attempt to invoke the creative potential of a specific tool, to one with a technological environment invoking a new creative potential from human discourse [...] new epistemic space. (Vasulka 1990: 465)

Enhanced by technological developments in video and new media, this new epistemic space has provided the dialogical envelope, something of a critically engaged artistic space, for important reconsiderations of commodification, fantasy, ideology and collaborative networking. From focus on networked video installations to the digital folds of Internet art, developments in video, new media and open-source technologies have played an energetic, sociocritical role in performing the tools of 'theory' that have been central to the development of this emergent epistemics, in space newly configured by algorithms, speed and connectivity.

Key is a shift in artistic thinking about technology. Since the late 1960s, a creative and expansive web sought to free the artwork from both its subservience to the mastery of creative genius (almost always male, if not white) and its dependence on an expansive system of commodity fetishism. While the tradition of artistic genius diminished the discursive power of the artwork as something capable only of the imperfect imitation of artistic insight, the system of artistic commodification effaced the multilayered labor of the artistic network for the speculative potential of the collector, gallery and museum. Speculation is a fundamental operative of this nexus as it functions to enhance the potential of art as capital, but not necessarily as thought. In contrast, the new epistemic space embraces the potential of speculation as a reflective means of expanding the horizons of the artists' and programmers' interdependence with electronic systems, programming codes, theoretical discourses and cultural networks. Notable in its indifference to the creator's craftsmanlike mastery of tools, as championed in artistic academies via the precise handling of the chisel or etching press, the new epistemic space takes its lead from 1960s experimentations in artistic installation, happenings and performance. Central to Wolf Vostell's 1961 *Dé-collage Performance* or to Nam June Paik's 1965 interactive installation, *Magnet TV*, the tools of video functioned, even at this early stage of their development, as the performative platform of an emergent network of flow, distribution and disruptive performance, one that John G. Hanhardt linked to Fluxus and the *nouveaux réalistes*. More recently, Owen F. Smith elaborated on the prescient role of Fluxus in setting the terms for emergent artistic practice in the age of new technology. In arguing that the tools and physicality of artworks, or 'the bounds of its materiality', cede their centrality to a 'networked whole' of thought and action, Smith goes so far as to draw an analogy between Fluxus and the emergent movement of open-source code in computer programming:

What the modes of critical thinking found in Fluxus offer to art is parallel to what the open-source code movement offers to computer programming: the tools by which a previously exclusionary practice, whether it be the programming of code or the creation of art, and means of production not only become available to all but grow and remain vital through the work and ideas of many varied participants. (Smith 2005: 135)

What is exciting to ponder in thinking about the early days of video art is this flexible approach to the development of electronic tools that resulted in rhizomatic interfaces with a new epistemic movement.

The convergence of the development of tools in video and electronic media, both analog and digital, happened in conjunction with the opening and articulation of parallel discursive and theoretical spaces in the academic disciplines of critical theory, philosophy and cultural studies. Particularly striking in this conceptual arena is an ongoing shift away from thinking of art as commodity, and from celebrating the artist as author-genius, to championing open networks of artistic production and conceptual collaboration. The result is an ongoing devaluation of the individual artist for the potential of the collaborative

media group, a reorientation of private aesthetic pleasure into public media fantasy, and a transformation of the aesthetics of beauty into the artistry of process. Developments in video and new media art thus provided the occasion and context for important reconsiderations of commodification, fantasy and collaborative networking. This essay proposes to trace many of the benchmarks of the rapid developments in video, new media and open-source technologies while considering their dialogical relation to the interrelated tools of ‘theory’ that have been at the center of this continually expanding epistemic space.

Artistry of process

A hallmark of early projects in video and electronic installation was the development of portable video tools and flexible media spaces for the production and distribution of new projects. Underground videomakers profited not only from commercially available products that provided artists with flexible portability, aided by affordable camcorders that fueled the imaginative momentum, but also from their own development of specialized devices that provided the flexibility for creative inventiveness, aesthetic novelty and structural intervention. In the same year when Gene Youngblood published *Expanded Cinema* (1970), Stephen Beck developed the Direct Video Synthesizer while working at the National Center for Experiments in Television (NCET) in San Francisco; Nam June Paik teamed up with Shuya Abe at WGBH in Boston to create the Paik/Abe Synthesizer; Eric Siegel built his Electronic Video Synthesizer – all of which laid the creative groundwork for the later devices of Sandin and the Vasulkas (whose tools continue to be fundamental to the range of experimental video production undertaken at the Experimental Television Center [ETC] in Owego, NY) (Sturken 1990: 110). The development of flexible tools for video synthesis accompanied the video artists’ fascination with the technological capability of instant playback and real-time capture of public events which suited, as Deirdre Boyle puts it, ‘the era’s emphasis on “process, not product”’. Process art, earth art, conceptual art and performance art all shared a shift from emphasis on the final work to how it came to be’ (Boyle 1990: 52).

Equally important to this rise in process-oriented work, whose processes were often highly political in nature, was not only the creation and availability of flexible tools, but also the changed mind-set about artistic practice and the milieu of cultural exhibition. From New York to San Francisco, emergent collectives provided studio space, economic means and artistic collaboration for a new generation of alternative video. Particularly significant is how video collectives, such as Videofreex, People’s Video Theater, Global Village, Raindance, ETC, Paper Tiger, Ant Farm, and Optic Nerve helped to empower individual artists to grab back production and commodification from museum/media institutions. Founded in 1969 by David Cort, Curtis Ratcliff and Parry Teasdale, Videofreex produced *The Now Show*, whose brief life on CBS included interviews with Yippie leader Abbie Hoffman and one of the founders of the Black Panthers, Fred Hampton. In 1971, the

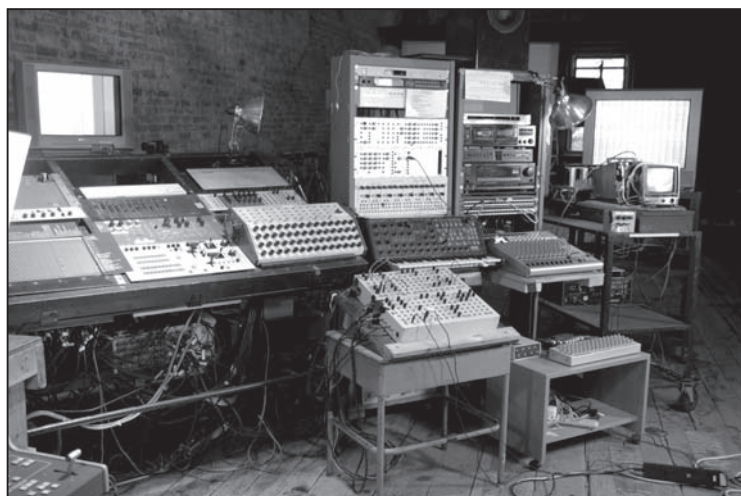


Figure 1. The studio of Experimental Television Center, Owego, NY (2007).
(photo. Olivia Robinson. courtesy, Experimental Television Center).

collective moved to Lanesville, New York, where they launched the first pirate TV station in the United States, and experimented with two-way, interactive broadcasting, whose interconnected cameras covered the region to combine with live phone-ins that enlivened a free-ranging open-video experiment. Similarly, People's Video Theater, founded in 1970 by Elliot Glass and Ken Marsh, produced tapes of 'man on the street' interviews, which were viewed at a local loft, or 'hardware station', where playback equipment permitted interactive feedback with participants. The 'video mediations' of People's Video Theater created, in Marsh's words, 'lines of communication between antagonistic groups whereby each can experience the information of the other without direct confrontation; therefore, working for and toward a resolution of conflict through dialogue' (Marsh 1970). In San Francisco, Ant Farm and Optic Nerve provided critical collective interventions in the emergent video culture arena: from Ant Farm's spectacular performance, *Media Burn*, in which Curtis Schreier and Doug Michels performed as astronauts who drove their custom El Dorado through a pyramid of burning TVs, to Optic Nerve's use of portable video to produce free-style documentaries on cowboys and beauty queens. On an even broader scale, Ralph Hocking founded ETC as a creative home of experimental video that fostered the development of innovative tools by Paik and others in a studio venue that until 2011 hosted the granting and creation of innovative projects by independent artist.

Then there was the proliferation of experimental means of distribution. To provide outlets for works on expanded cinema created by its collective, Raindance established *The Raindance Videolog*, a bimonthly assemblage of edited segments of its members' activity in alternate television. In 1981, Paper Tiger TV took to the New York City airwaves to profit from public access broadcasts of their searing live studio performances on national media issues by leading artists, cultural theorists and media activists. To open the series,

Herb Schiller provided a suite of critical analyses of the *New York Times* and its hegemonic control of the news industry. These were followed by a wide range of provocative performances in which Martha Rosler critiqued *Vogue*, Tajima read Asian imagery in American film, and Joan Braderman took on the popular 1980s television series *Dynasty*. Providing an intellectual alternative to mainstream televised comedy spectacles, Paper Tiger expanded its airwaves in 1986 by developing a national series, Deep Dish TV, which was transmitted by satellite to over 400 local public access channels (Halleck 1990: 264).¹ Deep Dish thus led the way for current Internet conversations in the arts and humanities on social and subjective positionality (Boyle 1990: 51–69).

Underlying such a wide range of video practice was an experimentation that combined innovative form with political agendas to embrace the rise of feminism, the politics of race, the discourse of peace and ecology, the public presence of queer performativities, and the dismantling of hegemonies of patriarchal, Eurocentric power. One of the hallmarks of the many collectives that helped to launch the alternative video movement was the centrality in their loosely shared politicized agendas of the dismantling of the economies of speculation and the commodity status of works of art. Comparing the contextual specificity of video installation and networked media events with traditional art objects, such as paintings and sculptures, Margaret Morse notes how:

An object that can be completely freed from the act of its production [...] becomes displaceable and freely exchangeable, that is, commodifiable. In addition, this severance from the process of enunciation is what ordinarily allows a magical origin or aura to be supplied to objects of art. (Morse 1998: 154)

Alluding here to Marx's critique of 'commodity fetishism', Morse contrasts process-oriented electronic art and installation with the preservation and exchange of traditional art objects whose mystical values are determined by the artist-gallery-museum-collector nexus that distances itself from the processes of production, whether manual or mental.

In focusing on 1970s artistic installations in gallery or art environments, Morse closes her essay 'The Body, the Image, and the Space-in-Between: Video Installation Art' with mention of Dan Graham's 1970s closed-circuit installations that combined feedback systems and mirrored video monitors to intersect with and engage with public architectonic environments. One of the characteristics of Graham's early experimentations with installation was his investment in appropriating the public spaces of the shopping arcade and the corporate atrium; two environments of public space that were expanding in the 1970s in conjunction with the emergence of televisual and cable systems. Graham's 1979 installation in the atrium of New York City's Citicorp building, for instance, confronts viewers in the center of the city with video images of the exterior of an urban house, thus offsetting the corporate fantasy of Citicorp's glass-enclosed arcadia with iconic visions of suburban life and the domestic scene. In his installations designed for shopping malls, Graham inserted monitors behind shop windows whose feedback

loops of the shoppers/viewers themselves solicited the viewers to position themselves as the subjects of desire and consumption. By establishing feedback loops within the architectonic realms of corporate capital and leisure commodification, Graham thus laid bare the thresholds of medialization while destabilizing the corporate mysteries of commodity fetishism.

The systematic encounters that Graham designed for architectural spaces were taken to even further extremes by other contemporary artists who were experimenting with telephonics and space. Preceding Graham's intervention in Citicorp's atrium, New York artist Douglas Davis incorporated live dual-directional telecasts into his artistic happenings. His 1972 piece, *Talk-Out*, for instance, involved a 3½-hour-long combination of live broadcast and cable television feedback. Through a live bidirectional feed, viewers were able to engage in a broadcast conversation with the artist about what they were watching. Such an insertion of meta-critical sensitivity into the media stream was breaking out across the globe. In an analysis of such 'dialogic electronic art', Eduardo Kac calls attention to the parallel French/Brazilian example of Fred Forest's intervention at the 1973 'XII São Paulo Bienal', for which Forest linked a bank of telephones to amplifiers that permitted participants to call in and 'speak freely' at a moment when the political regime had radically curtailed the possibility of free speech (1999). September 10–11, 1977, witnessed what seems to have been the first transcontinental satellite transmission of meta-critical performance. This occurred when Liza Bear and Willoughby Sharp (a pioneer of conceptual experimentations in earth art and video performance) joined up with Keith Sonnier to produce *Send/Receive*, which featured a 15-hour interactive transmission from the NASA Satellite CTS (via New York's MCTV) between San Francisco's ArtCom/La Mamelle and New York's Center for New Art Activities (Anderson-Spivy 2007; Schlote 1998: 77). These artistic interventions via electronic transmission spawned an ongoing flow of performative events. In France, Maurice Benayoun's 1995 3D *The Tunnel Under the Atlantic* permitted visitors to the Centre Pompidou (Paris) and the Museum of Contemporary Art (Montreal) to create a tunnel to each other by digging a two-way hole via 3D graphics.² Similar performances of 'live interaction' have flourished globally ever since, such as Ted Warburton's 2005 *Lubricious Transfer* that capitalized on Internet 2 to transmit live a collaborative dance performance between the University of California, Santa Cruz and New York University.³

What I find most interesting about this lineage of feedback loops and concurrent dialogic transmissions of meta-critical performance is how their legacy continues to disrupt the artist-gallery-museum-collector network, one that depends on the commodification of product for speculative economic gain at the expense of cerebral speculation about process. As viewers and interactive performers see their images replayed almost immediately through feedback loops in shopping centers or from within Internet transmissions from West to East, their narcissistic relation to video is disrupted by dialogue and reflection through what Graham calls the removal of:



Figure 2. Maurice Benayoun's *The Tunnel Under the Atlantic* (1995).

[...] self-perception, as in the mirror image, from the viewing of a detached-state image of self. Instead, feedback creates both a process of continuous learning and also the subjective sense of an endlessly extendible present time in flux, an interior time connected to an unfixed extendible present and continuous reexperienced immediate past. (Graham 1990: 180)

By liberating the viewing subject from some illusory identification with a utopian fixed position of narcissism (if not also ethnocentrism) – on which the traditional art commodity most frequently depends and for which Rosalind Krauss critiqued 1970s video art⁴ – medialized subjectivity glides circuitously along the continuously retroactive time frames of fantasy and interconnected realities through which the subject is constituted within the media network, *in fantasy*, rather than standing distantly on the outside as some kind of detached representational source or receptor of creativity.

Breaking the univocal ontological foundation of creation's subjectivity and capital's mystical object, these complex medial tools function along the lines of the 'desiring machines' promoted by the French theorist, Félix Guattari. As their own techno-material of expression, they:

[...] break with the great social and personal organic balances and turn commands upside down, play the game of the other upon encountering a politics of ego-centering. [...] All machinic orderings contain within them, even if only in an embryonic state, enunciative nuclei that are so many protomachines of desire. (Guattari 1993: 25)

The interesting pioneering work of Graham, Sharp, Davis and Forest led the way for more recent interactive artists, such as Benayoun and Warburton, to insist on the complicated process, moreover, through which systems of fantasy are as social as they are subjective by reflecting their belief in what Graham terms the ‘open possibilities of video as a present-time, architecturally deconstructive media’ (1979: 170). These desiring machines of the medial process thus focus the video event on the concurrent conditions of production while deconstructing the ontology of a designerly product that is capable of separating itself from process for the fetishistic purpose of commodification.

Just such explicitly political sensibilities guided the 1984 Olympics project of Kit Galloway and Sherrie Rabinowitz. Working together as Mobile Image, their *Electronic Café-84* intervened in the corporate discourse of the Los Angeles Olympics with an environment of ‘resocialization’. In response to the media environment of 1984, described caustically by Annmarie Chandler as ‘the year the first Macintosh was released and the year people were reminded of the Orwellian, anti-utopian vision of a totalitarian communication order’, Mobile Image set out to develop an electronic commons by establishing a network that for seven weeks linked five family restaurants across Celebrity City, a conglomerate of Korean, beach, Hispanic, and African communities that may not otherwise have been blessed by the Olympics (Chandler 2005: 167). Kit Galloway describes the project as a realistic, immersive social space that was ‘democratic, dynamic, and accessible, more political and prompted and facilitated by community participation – totally different [from] what Internet cafés have come to be’ (Chandler 2005: 171).

Bubbling to the surface around this time, well prior to the institutionalization of the Internet café, was a similar international appreciation of ‘immaterial materiality’. The growing variety of electronic installations and emergent networks provided activist artists and philosophers alike with novel notions for understanding subjective and social processes. Some of this impetus derives from Yves Klein, whose experiments in the late 1950s and early 1960s continue to resonate in the new age of new media. On June 3, 1959, Klein presented his lecture, ‘The Evolution of Art Toward the Immaterial’, to the Sorbonne, in which he positioned ‘immateriality’ as what he had in common with multimedia artist Jean Tinguely. Klein’s goal was ‘to create an ambience, a pictorial climate that is invisible but present in the spirit of what Delacroix in his journal called “the indefinable”’ (Klein 2006: 125–26) or what Klein termed in his essay ‘the force of attraction’ (2006: 122). Interestingly, Klein’s featured example was from his monotone symphony of forty minutes of electronic sound, whose length was scripted ‘to show the desire to overcome time’ (2006: 135). A fervent desire to overcome the constraints of the commodification of time informed the 1985 exhibition at the Centre Pompidou in Paris, ‘Les Immatériaux’,⁵ which was curated by the philosopher Jean-François Lyotard. This collaborative event brought together players in the early free software movement, video installation, and post-structural philosophy to reflect on what Lyotard calls the productive ‘technological stain’ of new media as it resists commodification and the corporatization of the information sector. For his exhibition, Lyotard enlisted the collaboration of a wide range of artists, musicians, architects and

philosophers whose primary materials were immaterial emanations from electronic and digital sources. Highlighting conceptual and electronic artworks of an almost virtual kind, from sound art to work created on the French Minitel, Lyotard's show dwelt energetically on the philosophical imperative of 'immaterials' that challenge or question modern philosophical confidence in the subject's analytical control over objects (or commodities) in time and space. Equipping visitors with wireless audio guides that picked up different signals as they moved through the show, Lyotard injected the dialogics of discourse into the experience of art. Simon Biggs recalls how 'this allowed for a poly-valent narrative to emerge in the show, allowing the viewers to find their own chronological and hierarchical path through the work, thus also functioning to further simultaneously reveal and dematerialize value' (Biggs 2001). Particularly novel was the exhibition's performance of a remote-controlled discursive network through the use of Olivetti M20 microcomputers and first-generation word-processing software that linked in real time, well prior to the public Internet, a wide range of artists and intellectuals in virtual conversation, from Jacques Derrida, Bruno Latour and Philippe Lacoue-Labarthe to Michel Butor, Daniel Buren and Isabelle Stengers.

At that moment, when the vast majority of museum and art-historical communities continued to resist the artistic legitimacy of video art and even cinema, Lyotard's ambitious exhibition of light, sound, architectonics and discourse generated not only welcome enthusiasm, but also vocal debate among critics, curators and philosophers alike. Questioned by the skeptics was not merely the sort of extended sociopolitical community launched a year earlier by *Electronic Café-84*, but also the very terrain of the new epistemic space of the immaterial, and its paradoxical inscription in electronic technologies. Many art curators questioned the invasion of their highly serious and hermetic craft by the playful philosopher known for his enigmatically pagan interventions in art theory. Many participants from the art and art-historical communities also remained deeply suspicious, as they continue to be today, of the aesthetic merits of electronic art, not to mention the legitimation of the electronic epistemic space by philosophers, theoreticians, artists and curators. Finally, some philosophers shared a deep concern over the dominant threat of the emergent techno-culture, a concern that philosophers and humanists alike still voice today, and one which Lyotard himself pondered so eloquently in *The Inhuman: Reflections on Time*. The greatest concern voiced by Lyotard in this exciting book is that the corporate drive of techno-science might render its users indifferent to the nuances of the epistemic difference and divergence that empower it: 'I see in this arrangement a sign that techno-science conditions thought to neglect the differend it carries within' (Lyotard 1992). Yet, it was precisely the unrealized promise of information culture that Lyotard thought would breathe new life into an equally neglectful tradition of philosophy:

Even the modest tinkerer with software has an attitude that's somehow 'artistic' – an attitude of a kind of astonishment. What that means is that metaphysics, as Adorno puts it, goes into crisis at much the same time as the rest of classical philosophy and

that there's a way in which it is going under as a result of a decline in the capacity it can have for the creation of wide-ranging global systems that include the great and final issues for which we feel a need. (Lyotard 1985)

Fantasy of the open

Lyotard's sensitivity to the artistry of software, particularly as it might facilitate socially inscribed commentary on urgent and wide-ranging global systems, attests to the maturity by 1985 of the 'open source' movement. It is, perhaps, not coincidental that open-source coding emerged in the 1970s in parallel with the rise of portable video networks and installations that facilitated urgent social documentary. Under the umbrella of the rise of epistemic techno-spaces, the 1970s witnessed the rapid development of the open-source movement through a sharing of software and emergent collaborative networks that constituted a particularly politicized user public. UNIX started things off when it was first written in 1969 by Ken Thompson and Dennis Ritchie at Bell Labs. One of the key features of UNIX was its bundling with its source code. This led not only to the code's widespread documentation and dissemination, but also to the shared-use platforms, such as the pioneering Multics platform that permitted multiple simultaneous users to collaborate on one computer. These developments spawned an academic revolution of code sharing and tweaking through which software itself became the tool of choice for creative computing (Kelty 2008). Emergent software communities thus shared with the independent video collectives a flexible relation to tools as desiring machines of process.

Fueled by an energetic esprit of open artistic, academic, and even corporate, collaboration, these communities of virtual tinkerers countered the model of exclusivity favored by individual entrepreneurship and proprietary corporate patronage. As noted by Christopher M. Kelty in *Two Bits: The Cultural Significance of Free Software*:

Free Software exemplifies this reorientation; it is not simply a technical pursuit but also the creation of a 'public,' a collective that asserts itself as a check on other constituted forms of power – like states, the church, and corporations – but which remains independent of these domains of power. (Kelty 2008)

Although the free software and open- source movements tended to be libertarian in spirit and were themselves often embedded in corporate enterprises, they also arose in debate with the commodity-centered aims of such enterprises. And while not directly opposed to commodity culture itself, on which the rise of personal computing was dependent, the resultant free software movement invested itself in the creation of what Kelty calls a 'recursive public', one that is:

[...] vitally concerned with the material and practical maintenance and modification of the technical, legal, practical, and conceptual means of its own existence as a public; it is a collective independent of other forms of constituted power and is capable of speaking to existing forms of power through the production of actually existing alternatives. (Kelty 2008)

The fantasy of the open as an emergent public horizon of invention, creation, and collaboration has fueled both the technical lingo of open source and the artistic discourse of emergent media practice. Speaking of the architecturally deconstructive nature of *Piece for 2 Cable TV Channels* (1976), Dan Graham stressed its reference 'to the (then) open possibilities of video' (Graham 1979: 170). Moving from an emphasis on present-time installation to the promises of emergent systems of televisual access in the 1980s, Francesc Torres wrote, in 'The Art of the Possible', that 'the idea of a pluralistic, open, horizontal mass communications system challenges the stability of the dominant political and ideological power in any given society' (Torres 1990: 205). And moving from the 1980s discourse of open access to the 1990s enthusiasm over the transition of video into digitalized new media art, Lev Manovich similarly celebrates the fantasy of the open: 'To use a metaphor from computer culture, new media transforms all culture and cultural theory into an "open source." This opening up of cultural techniques, conventions, forms, and concepts is ultimately the most promising cultural effect of computerization' (Manovich 2002: 333). Of course, the tools associated with such 'opening up' have since migrated from linked video monitors, public access studio, free software, shared computer and satellite transmission to the utopic expansion of the digital network itself. As Manuel Castells phrases it in 'The Net and the Self: Working Notes for a Critical Theory of the Information Society':

[T]he materiality of networks and flows creates a new social structure at all levels of society. It is this social structure that actually constitutes the new informational society, a society that could be more properly named as the society of flows, since flows are made up not only of information but of all materials of human activity (capital, labor, commodities, images, travelers, changing roles in personal interaction, etc.). (Castells 2001: 47)

It should be acknowledged, however, that any celebration of the flow brings with it the cautionary reminder of how the social structure of televisual flow enhanced the movement of capital and the corporate institutionalization of advertising as a structural premise of television programming, which itself motivated the critique of many of the early pioneers of independent video. The tension between capital, labor, and changing roles of human activities, markers of Castells's society of flows, certainly continues today in the carryover from analog to digital media. Indeed, the very power of the flow has resulted in rapacious clawback by the corporations that have successively reasserted their monopoly control over the digital network via claims over intellectual property and copyright



Figure 3. Jill Scott's *Frontiers of Utopia* (1995).

(these efforts have become particularly pronounced whenever the emergent social and cultural power of the network has exceeded the power of its corporate owners to control it). A strategy initially articulated by AT&T in its resistance to the open distribution of the UNIX source code, such corporate blockage of flow was perfected by Microsoft's legal maneuvers in the 1990s to protect the exclusivity of its brand. These maneuvers have since been adapted by the recording, publishing and film industries as a means of restricting the open flow of cultural data across the Internet, all in the name of protecting the economic rights of the individual artist. Behind the guise of copyright protection for the 'individual artist' stands a resurgent investment in commodity fetishism that mystically enshrouds the open promise of collaborate artistic invention in the corporate product of label, copyright, and marketing.⁶

But it may be far too simple to maintain that such efforts are motivated by an antiquated and paranoid notion of possessive individualism that runs contrary to the desiring machines of the networked epistemic spaces of video and new media. For don't the desiring machines of the network itself now constitute the fabric of what Alexander R. Galloway and Eugene Thacker call the new sovereignty of the information society? Based not on 'exceptional events but exceptional topologies' (Galloway and Thacker 2007: 40), the new sovereign system of networks enfolds, as Galloway and Thacker see it, the 'disembodied, immaterial notion of "information"' with the immanently material stuff of cybernetics, information theory, and systems theory that combine into networked configurations of communications media, biological systems and military technology (2007: 57). Armand Mattelart is equally pessimistic about such networking. He understands the hegemonization of the modern mode of communication by the deeply entrenched forces of global capital to have usurped cultural flow at its core.

The capitalization of culture is also the capitalization of the most existential levels of subjectivity in the consciousness of the citizen-consumer, who is increasingly influenced by the specialized activities of the professionals and their techniques and devices. The commoditization of culture is, above all, the production of new kinds of subjectivity. It is precisely because of this qualitative leap in the management of subjectivity that cultural struggles and the stakes involved regain their strategic importance. (Mattelart 2001: 268)

Interestingly, a similar call for cultural struggle was voiced two decades earlier by the German media theorists and activists Oskar Negt and Alexander Kluge. They wrote as early as 1972 of a related procedure of retooled subjectivity that interpellates and encapsulates the cultural worker via an intrusive media web through which 'language, psychic organization, the forms of social intercourse, and the public sphere, all participate in the mystifying context of commodity fetishism' (Negt and Kluge 1988: 70). Negt and Kluge recommend something corollary to the fantasy of the open as the antidote to the commodity fetishism of media culture. They understand the protectionism of commodity fetishism to rely partly on a repression of the workings of fantasy through which proletarian (these days, we could speak just as easily of 'net citizenry') imagination is subsumed by the valorized interests of the media labels that so valiantly link citizens to the lifeline of global culture (think of Time Warner, Verizon, AT&T, etc.). The commodity is now the fantasy of the open network. But rather than spurn fantasy itself as merely the envelope of false consciousness, Negt and Kluge understand the suppression of fantasy to constitute the condition of its potential 'free existence' in contemporary society. Precisely because the workings of fantasy constitute 'the raw material and the medium for the expansion of the consciousness industry', sensuality and fantasy can be reclaimed as creative lifelines for the resurgent recycling of their own 'damaged situations' in the wake of organized conditions of commodity fetishism and the medialized web of alienated corporate reality (Negt and Kluge 1988: 78–80).

Galloway and Thacker propose a similar viral 'exploitation' of the new sovereign condition of the network through which 'the concept of resistance in politics should be superseded by the concept of hypertrophy [...] the desire for pushing beyond' (Galloway and Thacker 2007: 98). Desire here fuels not the destruction of technology and its new sovereign network, but the goal 'to push technology into a hypertrophic state, further than it is meant to go' (2007: 98). The goal is thus, to return to Lyotard, to release the energetics of the differend from its stifling encryption in the repressive vaults of the new world sovereign, techno-science. It is not insignificant in the context of this linkage of fantasy/new technology/social empowerment that Arjun Appadurai has more recently called upon fantasy in the age of the electronic archive as a facilitating engine of the aspiration for those disenfranchised by immigration and class. Appadurai makes a compelling case for the effectiveness of imagination and fantasy for articulation of the public memories by the disenfranchised, particularly for those who have been left isolated by immigration from the orbit of the state and its official networks. Fueled by the empowerment of

fantasy and the playful connectivity of the Internet, rather than remaining entrapped in state-sponsored coda of enlightened rationality, ‘virtual collectivities build memories out of connectivity’ in contrast to how ‘natural social collectivities build [face-to-face] connectivities out of memory’ (Maas, Appadurai, Brouwer and Morris 2003: 23).

Tactical media

It is precisely the remobilization of the fantasy of the open, whether emergent or hypertrophic, that characterizes many of the most successful ventures in new media activism since the 1990s. At issue is not simply rejection of ventures in global media: digital activists are not unaware of their paradoxical reliance on the very technological infrastructure they aim to discomfort. Rather, at stake is a return to critical reflection on the dynamics and performativity of process – from sensuality to fantasy – via the viral tools of the digital interface that lend critical and political energy to emergent networks and desiring machines from open source to open minds. Of particular note is the critical inquiry into technological interventions that bear on the politics of culture, and the concomitant development of artistic tools that enable a forcefully phantasmatic response to the corporate drawbacks of flow and the sovereign subversions of network.

As if calling upon the reserves of 1970s women’s video, two feminist collectives of the nineties turned their attention to the potential of digital culture as an open scene of cultural intervention. In 1991, Francesca da Rimini, Josephine Starrs, Julianne Pierce and Virginia Barratt formed VNS Matrix. Partially in response to the cinematics of robotic futurism, their ‘Cyberfeminist Manifesto for the 21st Century’ proposed ‘the virus of the new world disorder rupturing the symbolic from within [as] saboteurs of big daddy mainframe’. Appropriating the tools of the feminine body for the purpose of heuristic fantasy, they actively promoted their motto: ‘the clitoris is a direct line to the matrix, the VNS Matrix’. Wide global circulation and translation of the VNS manifesto in the early days of the public Internet positioned cyberfeminism as a formidable viral discourse of the new digital world order. Thus began a chain of cyberfeminist actions that reappropriated the masculinist tools of technology for their fantasy value.⁷ While Linda Dement scanned female body parts in the lesbian bars of Sydney to morph them into ‘cyberflesh girlmonsters’, Jill Scott’s interactive installation, *Frontiers of Utopia* (1995), dwelt on the politics of the ideal society in the age of technology. Presenting her visitors with the pleasure of investigating interactive suitcases, Scott permitted the viewers to connect a magnetic key to icons in the suitcases that provided links to fictional video narratives by eight different female characters representing the range of feminist interventions in the twentieth century, from a socialist farmer and ‘Emma’ the anarchist, to a new-age programmer and a capitalist celebrating the marriage between desire and science.⁸ Scott’s design of an interactive dinner table à la Judy Chicago further enabled visitors to eavesdrop on conversations about the socioeconomic challenges confronting

technology's female users. These challenges were transformed to the corporeal zone by the new media collective subRosa, which describes itself as 'a reproducible cyberfeminist cell of cultural researchers committed to combining art, activism, and politics to explore and critique the effects of the intersections of the new information and biotechnologies on women's bodies, lives, and work' (subRosa 1998). Ranging from the collection of essays, *Domain Errors: Cyberfeminist Practices!* (2003) to networked and interactive performance installations, subRosa reflects on the politics of biological and computer engineering as it impacts reproduction, choice, and genetic determinism.

The viral exploration of these same intersections of art, technology, critical theory and radical politics has been the aim since 1992 of the influential collective, Critical Art Ensemble (CAE), which also has collaborated with subRosa. A proponent of tactical media actions, CAE seeks to engage particular sociopolitical contexts, from tools to



Figure 4. Critical Art Ensemble, Paul Vanouse, Faith Wilding, *Cult of the New Eve*. (1999) (photo. Dorian Burr).

media, in order to energize ‘molecular interventions and semiotic shocks’ for the disruption of authoritarian culture. Their projects have ranged from the critique of the lack of access to US health care – *The Therapeutic State* (1992), distributed in hard and virtual form – to a parodic 1994 newspaper insert and website on *Useless Technology* that critiques the sociopolitical distraction of the allure of new tools from the Sony Hi-Fi Stereo VCR with VCR Plus Programming to MK21 Advanced Ballistic Missile Reentry Vehicles. Since 1997, CAE has been collaborating with Faith Wilding of subRosa, Paul Vanouse, Beatriz da Costa and others on critical interventions on biotechnology, from the genomic performance event, ‘Cult of the New Eve’, to the ‘Molecular Invasion’ science-theater workshop whose aim was to reverse-engineer genetically modified crops. Many cultural critics believe that the proof of the cultural threat of CAE’s interventions came when its founder, Steve Kurtz, was arrested by US Homeland Security on charges of bioterrorism following the discovery of his artistic genetic lab after he called emergency services to his home upon the sudden death of his wife. The result was a failed but vicious three-year governmental prosecution of Kurtz, initially for bioterrorism as defined by the Patriot Act, and later, when the first charge didn’t stick, for mail fraud (sending viral microorganisms through the US mail). At no time in recent American artistic politics has the fantasy of the open been perceived by the authorities as being so threatening or so under threat.⁹

That is, until even more recently. It is no secret that CAE’s 1996 manifesto, ‘Electronic Civil Disobedience’, set the stage for a broad international network of activist hackers who have turned to the Internet as an open site for tactical media actions of political



Figure 5. Electronic Disturbance Theater/b.a.n.g. lab, ‘The Transborder Immigrant Tool’.

resistance. The Electronic Disturbance Theater (EDT) openly acknowledges this debt in discussing its benchmark 'Floodnet' actions against the Mexican government's repression of the Zapatistas. Relying on its development of software that more easily floods or attacks governmental sites with repetitive unwanted Internet hits, EDT has organized, since 1998, a series of mass-decentered electronic actions on behalf of the Zapatistas, whose virtual blockades and virtual sit-ins have temporarily choked the sites of Mexican financial institutions, the Mexican Embassy in the UK, and Mexican President Zedillo's personal website. EDT challenges the notion that the Internet should be protected only as a site for state-sponsored corporate communication by insisting that it should be nurtured as an active space for open networks and marginal societies as well. Similarly, the collective *tmark has capitalized on the Web to organize and fund acts of 'creative subversion' that disrupt and critique the growing resurgence of the legal linkage of tool and commodity. An original sponsor of the 'Floodnet' project, *tmark has supported a broad range of projects that resist corporate claims to tools and commodities. Most infamous is its interference with an attempt to close down the Internet art site etoy.com, by the online company e-toy, whose claim of URL competition veiled the fact that this online toy company was created well after the launch of the art site, etoy.com. *tmark also initially sponsored and published Gatt.org. This parodic website posed as the World Trade Organization in order to question the value of untrammelled free trade and financial globalization. It was through this URL that the activist performance collective the Yes Men launched its successful media announcement of the demise of the WTO.¹⁰

The extent of viral activism's threat to the logic of corporate power has again become evident in the current investigation and prosecution of Ricardo Dominguez for projects undertaken between EDT and his creational b.a.n.g. lab in the Department of Art at the University of California, San Diego. Two interrelated actions have made him the subject of a current university and federal investigation for prosecution. On March 4, 2010, the day of a state-wide strike in protest of massive funding cuts and tuition increases at the University of California (UC), a participant in EDT launched a virtual sit-in on the website of the Chancellor of the University. For this action, Dominguez is being investigated for engaging in a felonious DDoS (Distributed Denial of Service) attack in denial of legal precedent that a virtual sit-in constitutes an expression of political speech. Related is the investigation of a member of EDT for launching Markyudof.com, which fictitiously declared the resignation of said Mark Yudof, the Chancellor of the University of California. The severity of these investigations, taking place across university-state-federal jurisdictions could well stem from the b.a.n.g. lab's highly publicized and officially funded 'Transborder Immigrant Tool: Mexico/US Border Disturbance Art Project'. This project capitalizes creatively on the technologies of Spatial Data Systems and GPS (Global Positioning System) that have enabled a new relationship with the landscape via applications for simulation, surveillance, resource allocation, management of cooperative networks and pre-movement pattern modeling (such as the Virtual Hiker Algorithm that maps out a potential or suggested trail for real hikers to follow). Following the logic of Appadurai's appropriation for networked



Figure 6. Mixed Relations (Elle Mehrmand and Micha Cárdenas/Azdel Slade) perform *Technesexual* (2009).

imagination and fantasy for social engagement, ‘The Transborder Immigrant Tool’ adds a new layer of agency to this emerging virtual geography that would allow segments of global society that are usually outside this emerging grid of hyper-geo-mapping-power to gain quick and simple access to a GPS. ‘The Transborder Immigrant Tool’ would not only offer access to potential immigrants traveling across the border to this emerging total map economy, but would add an intelligent agent algorithm that would parse the best routes and trails on that day and hour for immigrants to cross this vertiginous landscape as safely as possible.¹¹ Under suspicion then is Dominguez’s mobilization of imaginative interventions in art for the sake of rearticulating social structures, and resisting oppressive ones that rely on the digital tools of technology for their expressions and operations of authority and power.

In the case of Dominguez’s collaborators, digital desire envelops the tools of activism not only in the algorithmic logics of power, but also in the erotic dynamics of digital desire. This is particularly evident in the projects of Zach Blas, Elle Mehrmand and Micha Cárdenas that bear the imprint of Dominguez’s lab. These projects embrace the erotic energetics of queer performance to test the limits, to exploit the continual clawback of the openness of the digital network by the capitalist-sovereign system. Mixed Relations is a collaborative techno-performance group of two artists, Elle Mehrmand and Micha Cárdenas/Azdel Slade, who work with Dominguez in the b.a.n.g. lab at UC San Diego. Mixed Relations blends the tools of new technologies with the erotics of queer, transgendered and virtual performance. In their piece, *Technesexual*, Cárdenas/Slade, who is an emergent transgendered performer, embraces passionately with Mehrmand on stage while do-it-yourself (DIY) biometric sensors gauge the heart rates and temperatures of their aroused bodies. In a queer recycling of the desire of the open, the noise of the performers’ biodata is computer-processed to produce live audio, including the sound of their heartbeats. All of this audiovisual data is transported live to the online community

Second Life, where the performers' avatars similarly, but not identically, embrace in a performative way that links the performers' physical bodies to that of their virtual avatars. This seeming doubling of liveness/virtuality, which is both mimetic and disjunctively virtual, is enacted in performance by the projection onstage of the simultaneous Second Life performance in an erotic fashion that confuses the source of digi-data. Do desire and its biodata stem from the performers or from their online avatars? Does their performance enhance the discourse of the 'posthuman'¹² by displacing the source of desire from actor to machine? Or, conversely, does *Technesexual* grab the human back from its dependence on digital encoding by performing the reliance of the online community on data generated by live sex? In performing the ambiguities of digital culture, *Technesexual* explores themes of 'affective tension and anticipation, techno-fetishism, and D.I.Y. cyborg bodies', in order 'to look at bodies in relation to each other, as well as in relation to the technologies which extend and multiply them, sonically, visually and physically' (Merhmand and Cárdenas 2009). Precisely what 'bodies' are subject of the look is also in question in this performance so marked by the 'indifferenciations' of queerness, embodied and online. The subliminal pull of the viral condition, the surge of accumulation, the continual surprise of informational texture and the layers of enunciatinal multiplicity across encoded real and virtual platforms are what lend a psycho-political urgency to these delirious distributions of new media performance.

The political urgency of the queering of technology is also what drives Zach Blas to adopt the theorizing of José Esteban Muñoz and others to bring digital practice into the queer arena of 'mutation and mixing: what may be called the new sublime of "destruction" [...] a viral aesthetics' (Blas 2010b). Blas describes his project 'Queer Technologies: Automating Perverse Possibilities' as 'an interstitial organization that produces a product line for queer agencies, interventions and social formations. QT creates, mutates, and establishes flows of resistance within larger spheres of capitalist structurations through viral tactics of branding, mass production, and dissemination' (Blas 2010b). Riding the networked surge of the erotics of distribution, 'Queer Technologies' has offered up for consumption a performative line of sublimely viral products that include the transCoder, a queer programming anti-language; 'Gay Bombs', a technical manifesto that outlines a 'how-to' of queer political action through assemblages of networked activism; and GRID, an etymological reformulation of the initial coda for HIV/AIDS, which is a data visualization application that tracks the dissemination of QT products that have been 'shop dropped' as anti-commodity guerrilla performance activism in various consumer electronic stores such as Best Buy, Radio Shack and Target. The reformulated grid of 'Queer Technologies' is asserted by Blas to work 'toward producing another type of virality that emerges from the strange fusion of map and territory [...] to constantly change and mutate with the dominant GRID to continuously infect capital' (Blas 2010a).

Even the tool of the Internet, not simply its corporate patrons and capitalist tools, has been subjected to the interventions of guerrilla hacktivism that prompt reflection on the sociopolitics of the network through parodic disruption for both political and artistic



Figure 7. Zach Blas, *Disingenuous Bar* from GRID: Queer Technologies.

purposes. These projects have been as varied in material and context as are the early activist installations of video and the more recent queerings of technology. Two particularly artistic interventions might suffice to highlight the aesthetic ramifications and phantasmatic impact of these projects. In 1998, Mark Napier released the web interface *Shredder 1.0* that transforms the web address entered in its location field into an aestheticized mix of text and image. By passing the code of a web page through a 'perl' script written by Napier, *Shredder 1.0* rearranges the code of the site before loading it onto the web browser in a way that translates numerical information into abstract art. The same sites that set out to be accessed as closed systems of commercialization can be transformed into open objects of aesthetic transformation. However these aesthetics of translation pale in comparison to the infamous viral performance *Contagious Paranoia*, launched by 0100101110101101.org from the Slovenian Pavilion at the '49th Venice Biennale'. In the spirit of open source, the artists made public their *Biennale.py* source code so that it could be read and tested on infected computers. The activist dream, not foreseen by the artists, was that the Symantec Corporation detected the virus and then incorporated its response, *Python.Blen*, into its software, thus canonizing the artistic software tool in the viral defense network of corporate computing.¹³

While the inclusion of *Biennale.py* into the corporate archive of networked code simply may have been a mistake of artistic fortune, the activist drawback of the digital archive has been at the forefront of the fantasy of the open. Of particular significance is the digital grabbing back of the archive from restrictive and corporate forces in a way that has been informed by the accessibility of the network and conceptual tenets, contrary to traditionally 'closed' philosophies of access and orientation (the fixed object for the legitimate researcher) to an open structure of materials that reorient both the epistemic

space of the archive and its organizational power. An early example is derived from the discomfort of the video artist Antoni Muntadas, with the incursion of censorship into the open network of the web. His response was the development of an open database of cases involving censorship of the arts, *The File Room* (1994), which was originally sponsored by Chicago's Randolph Street Gallery (a nonprofit artist-run space from 1979–98) and now is maintained by the National Coalition Against Censorship (Muntadas 1994a). Rather than limit his archive to cases prosecuted by governmental and corporate agencies, Muntadas staged the complex internalization of censorship by featuring cases implicated with the gallery/museum/library world as well. To counter what he calls 'the closed circle of power systems,' Muntadas directly aligns *The File Room* with the activist fantasy of the open:

The File Room began as an idea: an abstract construction that became a prototype, a model of an interactive and open system. It prompts our thinking and discussion, and serves as an evolving archive of how the suppression of information has been orchestrated throughout history in different contexts, countries and civilizations. (Muntadas 1994b)

Just such a notion of the evolving archive now frames an evolving series of international projects whose purpose is to transcribe the archive itself into an event for ongoing thought and cultural critique. Indeed, something of a radical transformation in artistic understanding has shifted cultural energy away from the sole media artist and toward the collectivity of thought and performance whose life takes on new, expanded dimensions in the new epistemic space of the medialized archive. 'CTHEORY Multimedia', of which I am a curator, capitalizes on the artistic and critical openness on the web to organize archives of net.art projects whose themed organization addresses critical issues of networked culture. Arthur and Marilouise Kroker joined with me to curate a number of projects whose networked archives of international net.art intersect with one another through conceptual and artistic interfaces: '*NetNoise*', '*Tech Flesh: The Promise and Perils of the Human Genome Project*', and '*Wired Ruins: Digital Terror and Ethnic Paranoia*' bring the openness of net.art into dialogue with the urgency of critical action. 'CTHEORY Multimedia's' current institutional host, the Rose Goldsen Archive of New Media Art at Cornell University, serves as a research repository of new media art and resources that emphasizes digital interfaces and artistic experimentation by international, independent artists. Designed as an experimental center of research and creativity, the Goldsen Archive aims to stage its archived materials by individual artists for critical and artistic conceptual experimentation and for the articulation of open archival strategies. This is a philosophy, having come full circle for the early days of expanded cinema and cable distribution, that is shared in collaboration with a broadening network of activist projects in archival media, from the ongoing projects at the Experimental Television Center, in Owego, NY, to online archival networks based at The Daniel Langlois Foundation in Montreal; the Asia Art Archive in Hong Kong; Database of Virtual Art in Berlin; ICC

Online Archival Zone in Tokyo; Media Art Net at the ZKM in Karlsruhe, Germany; Palazzo della Arte Napoli; Rhizome.org; and V2 Archive in Rotterdam.

It is also a philosophy that has made its way back into studios that are witnessing a resurgence of DIY tool-making for both art and activism. Fueled by the design and conceptual activism of Brooke Singer and others, Preemptive Media carries on the tradition of CAE and 'Queer Technologies' in projects of preemptive design. Its spin-off, The_Undesigning_Org, has launched a series of workshops and blogs on the concept of Undo! or the reverse-engineering of everyday products such as personal care and household products that return to the nineteenth-century tradition of amateur scene. Similarly the gaming lab for social change, TiltFactor, operated at Dartmouth College by Mary Flanagan, is the first academic center to create and research computer games that integrate social causes into their conceptual aims. Similar academic labs for DIY projects that move between and disturb academic and artistic boundaries are proliferating: Renate Ferro's lab, The Tinker Factory at Cornell University, which encourages students and faculty to collaborate around the principles of critical spatiality and tactical media;¹⁴ the Institute for Multimedia Literacy, spearheaded by Anne Balsamo at the University of Southern California; and the Mobile Mapping Project of Kevin Hamilton, M. Simon Levin, Laurie Long and Piotr Adamczyk at the University of Illinois. These labs, which combine archival knowledge with DIY tool making, carry on the legacy of the early video collectives that combined the activism of openness and the mobilization of the productivity of fantasy for the sake of collective engagement in politically progressive encounters with the media.

Of particular significance is the digital grabbing-back of tools and materials from the restrictive and corporate forces of both analog and digital distribution. The viral combination of artistic and theoretical activism has been informed by the accessibility of the network and conceptual tenets contrary to traditionally 'closed' philosophies of art, product and access. Since the early days of video experimentation, an open structure of materials has reoriented both the epistemic space of electronic art and its organizational power. In the prescient words of Woody Vasulka, we have indeed 'moved from a relationship with technology in which we attempt to invoke the creative potential of a specific tool, to one with a technological environment invoking a new creative potential from human discourse [...] new epistemic space' (Vasulka 1990: 465).

References

- Anderson-Spivy, A. (2007), 'Sharpshooter', *artnet Magazine*, <http://www.artnet.com/magazineus/features/spivy/spivy10-3-07.asp>. Accessed March 29, 2013.
- Biggs, Simon (2001), *Immaterial Semiotics*, www.bbss.thing.net. Accessed July 19, 2012.
- Blas, Zach (2010a), 'GRID: Queer Technologies' Topology and Viral Aesthetics', in USC Comparative Literature Symposium 'Longing in the Age of New Media'.
- (2010b), 'QT: Automating Perverse Possibilities', in USC Comparative Literature Symposium 'Longing in the Age of New Media'.

- Boyle, Deirdre (1990), 'A Brief History of American Documentary Video', in D. Hall and S. Fifer (eds), *Illuminating Video: An Essential Guide to Video Art*, New York: Aperture/BAVC.
- Castells, Manuel (2001), 'The Net and the Self: Working Notes for a Critical Theory of the Information Society', in P. Weibel and T. Druckrey (eds), *Net Condition: Art and Global Media*, Graz, Austria: Steirischer Herbst; Karlsruhe, Germany: ZKM; Cambridge, MA & London: MIT Press.
- Chandler, Annmarie (2005), 'Animating the Social: Mobile Image/Kit Galloway and Sherrie Rabinowitz', in A. Chandler and N. Neumark (eds), *At a Distance: Precursors to Art and Activism on the Internet*, Cambridge, MA & London: MIT Press.
- Fernandez, Maria, Wilding, Faith and Wright, Michelle M. (eds) (2003), *Domain Errors!: Cyberfeminist Practices*, New York: Autonomedia.
- Galloway, Alexander R. and Thacker, Eugene (2007), *The Exploit: A Theory of Networks*, Minneapolis & Paris: University of Minnesota Press.
- Graham, Dan (1979), 'Video in Relation to Architecture', in D. Hall and S. Fifer (eds) (1990), *Illuminating Video: An Essential Guide to Video Art*, New York: Aperture/BAVC.
- Guattari, Felix (1993), 'Machine Heterogenesis', in V. A. Conley and the Miami Theory Collective (eds), *Rethinking Technologies*, Minneapolis & London: University of Minnesota Press.
- Halleck, DeeDee. (1990), 'The Wild Things on the Banks of the Free Flow', in D. Hall and S. Fifer (eds), *Illuminating Video: An Essential Guide to Video Art*, New York: Aperture/BAVC, p. 264.
- Kac, Eduardo (1999), *Negotiating Meaning: The Dialogic Imagination in Electronic Art*, <http://www.ekac.org/dialogicimag.html>. Accessed March 29, 2013.
- Kelty, Christopher M. (2008) *Two Bits: The Cultural Significance of Free Software*, Durham, NC: Duke University Press.
- Klein, Yves (2006), *Vers l'immatériel*, Paris: Dilecta.
- Krauss, Rosalind (1986), 'Video: The Aesthetics of Narcissism', in John Hanhardt (ed.), *Video Culture: A Critical Investigation*, Rochester: Visual Studies Workshop, p. 190.
- Lyotard, Jean-François (1985), *Les Immatériaux: A Conversation with Jean-François Lyotard, with Berhard Blistène*, <http://www.kether.com/words/lyotard/LYOTARD-withBlistene-LesImmatériaux-FlashArt-March1985.pdf>. Accessed March 29, 2013.
- (1992), *The Inhuman: Reflections on Time* (trans. G. Bennington and R. Bowlby), Stanford, CA: Stanford University Press.
- Maas, Winy, Appadurai, Arjun, Brouwer, J. and Morris, S.C. (2003), *Information is Alive: Art and Theory on Archiving and Retrieving Data*, Rotterdam: V_2 Publishing & NAI Publishing.
- Manovich, Lev (2002), *The Language of New Media*, Cambridge, MA: MIT Press.
- Marsh, Ken (1970), *Introduction to People's Video Theater*, <http://www.vdb.org/artists/ken-marsh>. Accessed March 29, 2013.
- Mattelart, Armand (2001), 'The New Totality', in P. Weibel and T. Druckrey (eds), *Net Condition: Art and Global Media*, Graz, Austria: Steirischer Herbst; Karlsruhe, Germany: ZKM; Cambridge, MA & London: MIT Press.
- Mehrmand, Elle and Cárdenas, Micha (2009), *Technesexual* [performance], http://bang.calit2.net/wiki/Mixed_Relations. Accessed June 19, 2012.
- Morse, Margaret (1998), *Virtualities: Television, Media Art, and Cyberculture*, Bloomington & Indianapolis: University of Indiana Press, p. 154.
- Muntadas, Antoni (1994) *The File Room*, NCAC, <http://www.thefileroom.org/>. Accessed July 19, 2012.
- (1994b), *Introductory Notes to The File Room*, NCAC, <http://www.thefileroom.org/documents/Intro.html>. Accessed July 19, 2012.
- Negt, Oskar and Kluge, Alexander (1988), 'The Public Sphere and Experience: Selections', *October*, 46.
- Schlote, A. (1998), 'Pioniere der Telekommunikationskunst', MA thesis, Heidelberg: University of Heidelberg.
- Smith, Owen F. (2005), 'Fluxus Praxis: An Exploration of Connections, Creativity, and Community', in A. Chandler and N. Neumark (eds), *At a Distance: Precursors to Art and Activism on the Internet*, Cambridge, MA & London: MIT Press.
- Sturken, M. (1990), 'Paradox in the Evolution of an Art Form: Great Expectation and the Making of a History', in D. Hall and S. Fifer (eds), *Illuminating Video: An Essential Guide to Video Art*, New York: Aperture/BAVC.
- subRosa (1998), 'subRosa Manifesto', <http://www.cyberfeminism.net/>. Accessed June 10, 2012.
- Torres, Francesc (1990), 'The Art of the Possible', in D. Hall and S. Fifer (eds), *Illuminating Video: An Essential Guide to Video Art*, New York: Aperture/BAVC, p. 205.

Vasulka, Woody (1990), 'The New Epistemic Space', in D. Hall and S. Fifer (eds), *Illuminating Video: An Essential Guide to Video Art*, New York: Aperture/BAVC.

Notes

1. Boyle provides a more extensive discussion of the early history of video collaboratives and guerrilla television in Hall and Fifer (1990), pp. 51–69.
2. Maurice Benayoun, *The Tunnel Under the Atlantic*, <http://www.benayoun.com/projet.php?id=14>.
3. Ted Warburton, *Lubricious Transfer*, <http://people.ucsc.edu/~tedw/Lubricious%20Transfer.html>.
4. Very much counter to the premises central to this chapter as well as to my understanding of the interrelated complexities of primary and secondary narcissism, Rosalind Krauss critiques video art for failing to 'account for narcissism as a form of bracketing out the world and its conditions at the same time as it can reassert the facticity of the object against the grain of the narcissistic drive toward projection' (Krauss 1986: 190). Maureen Turim positions the rise of theories of video narcissism in relation to notions of the apparatus as a carrier of overdetermined social conditions in 'The Cultural Logic of Video', in Hall and Fifer (1990: 336–38).
5. I discuss the legacy of 'Les Immatériaux' in French new media circles in 'Immaterial Archives: New Media and the Memory of Representation', *Sites: The Journal of 20th-Century Contemporary French Studies*, 4: 2 (Fall 2000), pp. 277–96. Tilman Baumgärtel similarly reflects on the place of this exhibition as a precursor to new media art, 'Immaterial Material: Physicality, Corporality, and Dematerialization in Telecommunication Artworks', in Chandler and Neumark (2005), pp. 60–70.
6. A wide-ranging discussion of the legal framework of copyright, and how Mark Tribe and I understand its cultural implications for what he calls 'open-source culture', can be found in the published transcript of the Columbia School of Law's 2004 symposium on "Metamorphosis of Artists' Rights in the Digital Age", *The Columbia Journal of Law and the Arts*, 28: 4 (Summer 2005).
7. The range of cyberfeminist theory and artistic action is charted in Fernandez, Wilding and Wright (eds) (2003); Mary Flanagan and Austin Booth (eds) (2002), *Reload: Rethinking Women and Cyberculture*, Cambridge, MA & London: MIT Press; and Jennifer Terry and Melodie Calvert (1997), *Processed Lives: Gender and Technology in Everyday Life*, London & New York: Routledge.
8. Jill Scott, *Frontiers of Utopia*, <http://framework.v2.nl/archive/archive/leaf/other/.xslt/nodenr-141432>. I discuss this work in more detail in *Digital Baroque: New Media Art and Cinematic Folds* (2008), Minneapolis & London: University of Minnesota Press, pp. 249–51.
9. For a perceptive account of CAE and the trial, see Joan Hawkins (2005), 'When Taste Politics Meets Terror: The Critical Art Ensemble on Trial', *THEORY* TD007, www.ctheory.net/articles.aspx?id=482; as well as Rebecca Schneider's (2000) pre-trial account of CAE, 'Nomadmedia: On Critical Art Ensemble', *The Drama Review*, 44: 4 (Winter), pp. 120–31.
10. For an extensive analysis of these and other projects in tactical media, see Rita Raley (2009), *Tactical Media*, Minneapolis: University of Minnesota Press.
11. 'Transborder Immigrant Tool', http://bang.calit2.net/xborderblog/?page_id=2.
12. N. Katherine Hayles (1999) develops the notion of the 'posthuman' in *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*, Chicago: University of Chicago Press.
13. For a fuller account of this project, see http://www.digitalcraft.org/iloveyou/biennale_part_2.htm.
14. For an account of the institutional collaborations between the Rose Goldsen Archive of New Media and The Tinker Factory, see Renate Ferro and Timothy Murray (2009), 'Tinkering with the Archive: Pathways to Conceptual Thought and Digital Practice', *Digital Arts and Culture*, Irvine, CA: eScholarship, <http://escholarship.org/uc/item/2565799j>.