Oppositional and Activist New Media: Remediation, Reconfiguration, Participation

Leah A. Lievrouw
Dept. of Information Studies
University of California, Los Angeles
216 GSE&IS Building, Box 951520
Los Angeles, CA 90095-1520
llievrou@ucla.edu

ABSTRACT

Over the last decade, the major firms and cultural institutions that have dominated media and information industries in the U.S. and globally have been challenged by people adopting new technologies to intervene and participate in mainstream media culture. In this paper key genres and features of oppositional and activist new media are described and cases are presented, and their implications for participatory design are briefly outlined.

Author Keywords

New media, access, indymedia, social networks, hacktivism, alternative media, policy, Internet, activism, intellectual property, digital arts, social movements

ACM Classification Keywords

A.0 General: Conference proceedings; H.5.4 Hypertext/Hypermedia---User issues; J.5 Arts and Humanities: Fine arts, Performing arts; K.4.1 Computers and Society: Public policy issues; K.4.2 Computers and Society: Social issues; K.5.1 Legal Aspects of Computing: Hardware/software protection; K.5.2 Legal Aspects of Computing: Governmental issues; K.5.m Legal Aspects of Computing: Miscellaneous

INTRODUCTION

Historically, a handful of major firms and cultural institutions have dominated media and information industries in the U.S. and globally. Although they still play a major role in mainstream culture and politics, these firms, institutions, and their interests have been challenged over the last decade as people have turned to new media technologies to extend their social networks and interpersonal contacts, to produce and share their own "DIY" information, and to resist, "talk back" to, or otherwise engage with the prevailing culture.

Audiences have become *users* of media, immersed in a complex media ecology of divides, diversities, and literacies. An ongoing cycle of capture, co-optation, subversion and reconfiguration of information resources, media content, and systems characterizes media culture today, pitting the more-concentrated mainstream "center" against diffuse but increasingly interactive and participatory "edges."

There is a growing tension, then, between a traditional view of the media environment, including new media and information technologies, as sites for the production, distribution, and consumption of media products, and an alternative view that sees the environment primarily as a venue for participation, speech, interaction, and creativity. The first perspective understands media technologies and content in terms of property and gatekeeping. The alternative view considers reputation, credibility, reciprocity, trust, and voice to be as valuable as property, and media and information technology as opportunities to create and communicate, as well as consume.

The tension between these two views is explicit in the growth of *oppositional and activist new media*, people's uses of media and information technologies to intervene in and respond to mainstream, mass culture. In this paper, some key genres and features of oppositional and activist new media are described and cases are presented. The implications of these forms of new media for participatory design are discussed, especially the emerging cycle of co-optation and participation between mainstream and margin ideas and expression.

1990S-ERA MEDIA ECOLOGY: TWO VISIONS

When the World Wide Web, browser technologies and relatively inexpensive client-server network architectures were introduced in the early 1990s, technology advocates predicted that the Web would finally deliver on the “information utility” visions of the Internet first articulated in the 1960s and 70s [28]. The decentralized and thus

inherently democratic architecture of the Internet would give communities and groups a new and wider voice. The WELL in Sausalito, California, Berkeley's Community Memory, and the Electronic Frontier Foundation, with roots in the 1960s counterculture and libertarianism [3], espoused ideals of empowerment and participation, "homesteading on the electronic frontier" [61].

In the mid- to late-1990s, new collaborative environments such as MUDs, MOOs, and chatrooms flourished online. Email was (re)discovered as the "killer application" for personal and leisure interaction as well as work tasks. Mainstream media content and information services, repackaged for the Web, as well as new peer-to-peer systems, attracted novices who had never considered using computers before.

Traditional media industries, meanwhile, worried that the "frontier" of the World Wide Web would grow to compete with television, radio, and theatrical movies for audiences' time and attention. The potentially limitless reproduction and circulation of information online threatened their traditional control over content production and gatekeeping. Recasting themselves as "content industries," they sought to re-establish the familiar "pipeline" model of mass media production, distribution, and sales in the new technological environment. They initiated new, aggressive campaigns to enforce and extend intellectual property rights. Mergers were designed to help firms enlarge and lock in market shares. In partnerships with computing firms they bundled their content with other kinds of "software." Alliances with telecommunications operators and Internet service providers (e.g., AOL-Time Warner and AT&T-Comcast) permitted greater control over the new media infrastructure, particularly the "final mile" of cable or telephone wire into the home. Major increases in bandwidth and even more stringent copy protection regimes were planned, to meet the anticipated surge of demand for entertainment products online.

Major media firms also lobbied the Congress, Justice Department, Federal Communications Commission (FCC), and other bodies where they wielded influence, to shape a more advantageous regulatory environment. The Congress obliged, in the form of the 1996 Telecommunications Act, the 1998 Digital Millennium Copyright Act (DMCA), and the 1999 Bono Copyright Term Extension Act, among other legislation. The FCC ushered in a renewed era of media deregulation. Media ownership limits were substantially weakened under the Telecommunications Act of 1996. The FCC's Financial Interest in Syndication (so-called "Fin-Syn") rules, which prohibited networks from owning both production and syndication companies, and must-carry rules that required cable operators to carry local broadcast channels, were abandoned. The U.S. radio frequency spectrum, formerly considered a scarce natural resource and thus a public good, was redefined as on over-abundant commodity. Significant portions of American airwaves were put up for auction, or in some cases, such as HDTV, given away to media corporations.

In the rush toward privatization and cross-ownership, the "property" metaphor, borrowed from the invention and patenting culture of high tech, swept the traditional media industries in an "intellectual property epidemic" [43]. The Data Investment and Intellectual Property Antipiracy Act of 1996 and the Collections of Information Antipiracy Act of 1999 granted rights to entirely new types of information and expressions (e.g., databases, page numbers, and telephone listings). The Sonny Bono Copyright Term Extension Act of 1999 granted copyright protection for longer terms than ever before [42]. Critics charged that the traditional criteria for awarding patents -- novelty and non-obviousness – had been relaxed to the point of absurdity, allowing previously-exempted facts like mathematical algorithms, sequences of genetic code, the click of a computer mouse to order merchandise online, or new animal varieties to be patented [15, 16, 25].

Internet service providers (ISPs), rejecting the past service and regulatory models governing telephony, postal mail, and publishing, claimed that their systems and the content they carried (e.g., subscribers' email) were both the firms' property and subject to company monitoring and control. Despite legal precedents defining information technologies with significant non-infringing uses, such as VCRs, as legal, new "anti-circumvention" provisions of the DMCA prohibited any new technology that might conceivably be used to infringe, whether the technology was actually used that way or not. Entertainment firms targeted university campuses – where high-speed Internet networks were already a routine part of student life – as nests of copyright violation, and firms filed punitive lawsuits against student users, their families, and the universities they attended.

The dot-com collapse at the end of the 1990s weeded out smaller enterprises and start-ups across the media, telecoms, and computing industries. Their assets (including intellectual property) were sold to larger, surviving firms. Though a glut of bandwidth had been built in the U.S. in the previous decade, major media firms were reluctant to distribute their products online without asured copy protections and revenue guarantees. Broadband services to the home were built with greater downstream capacity from the network to subscribers, than upstream from subscribers to the network, reflecting a view of households primarily as consumers of media. By the turn of the century early promises of streaming video to the home had quietly been shelved [77]. The U.S. had one of the slowest "high-speed" consumer broadband networks in the world [4]; it still lags most developed nations in the provision and adoption of broadband [18].

Today, the centralized, industrial-style "pipeline" model of mass media content distribution and consumption seems to have survived intact in the new media environment. Media, telecoms, and computing firms have fought any distribution

scheme or technology that threatens their gatekeeping, rent-extracting role in the creation and movement of information. As Lawrence Lessig has put it, they "declared war against rip, mix, burn culture" [37].

MEDIA ECOLOGY TODAY: CENTERS AND EDGES

Commenting on the two visions outlined above [2, 49, 51], several writers have recently asked what has happened to the early "frontier" vision of people seeking to gain greater political and economic influence and participation in the new media environment.

In fact, community groups, cultural and political activists, artists, and ordinary citizens have adapted almost as quickly as technological, economic, and legal barriers have been erected, using new media and information technologies to "talk back" to mainstream media culture. New genres have evolved, bottom-up, in response to centralized, homogeneous media culture, even though their ideas and expressions are often "recaptured" by the mainstream. They are typically low-budget, quick-response forms of communication that aim to motivate impassioned response and participation. They advance the "alternative" philosophy of early Internet proponents and visionaries, and carry forward a longer tradition of "underground," alternative, and radical media [1, 2, 13].

Long before "the Internet" was part of the media landscape, French sociologist Alain Touraine [73] noted the importance of such alternative spaces, based on people's

"*...desire to erect communities conceived as a refuge within an increasingly thicker social network. Marginality, considered for so long a failure of integration, becomes thus the hallmark of an opposition, a laboratory in which a new culture and a social counterproject are being elaborated.*"

GENRES OF OPPOSITIONAL AND ACTIVIST NEW MEDIA

Although media and information technologies and forms tend to be moving targets, constantly changing in response to dynamic cultural and technological contexts, four main genres of oppositional new media have become common recently: *culture jamming*, *alternative computing*, *mediated mobilization*, and *indymedia*. These categories broadly resemble other typologies [e.g., 2, 51, 74] that focus mainly on online political activism. However, for the purposes of the present discussion the four types are presented as *genres* of economic, cultural, and social, as well as political, expression. All four have roots in media forms and uses that predate the Internet and other newer technologies, but have moved in new directions in the online context.

Culture Jamming

In an influential essay of the same name, media critic Mark Dery defines *culture jamming,* a term originated by the experimental band Negativland, as "media hacking, information warfare, terror-art, and guerrilla semiotics, all in one," that captures and subverts the images and ideas of the mainstream media to make a critical point (http:///www.levity.com/markdery/jam.html). Others call it "a strategy that turns corporate power against itself by co-opting, hacking, mocking and re-contextualizing meanings" [57], an "explicit attempt to monkeywrench the media machine" [52], and a way to "reclaim the streets" [72].

Outdoor public spaces are a frequent venue for culture jamming projects, from reworkings of sexist and racist billboards in the UK [60], to "subvertising" in San Francisco by altering outdoor advertisements for liquor, tobacco, and military recruiting [72]. Print media have also been a longtime culture jamming target, e.g., the advertising and design parodies of the Canadian magazine *Adbusters* [35]. Culture jamming entered a new and more vigorous phase with the advent of digital and online media, which are ideally suited to the "cut and paste" approach to designing messages and making art with a point [5].

For example, the group Detritus supports artists or "detrivores" who take "existing materials, break them down, and use them as building blocks to form something new" (http://detritus.net). Detritus member Illegal Art creates "the 'degenerate art' of a corporate age: art and ideas on the legal fringes of intellectual property" (http://illegal-art.org). The nonprofit arts organization ®™ark (pronounced "art-mark"), a prominent player in the culture-jamming world, solicits and distributes philanthropic funding to artists and projects that critique corporate and government power and consumerism (http://www.rtmark.org; [7, 11, 52]). ®™ark-funded artists have switched voice chips in Barbie and GI Joe dolls and subsequently repackaged and sold them in a major retail toy outlet (the "Barbie Liberation Organization"), and created a parody of George W. Bush's 2000 Presidential campaign website (see [57] for further discussion of ®™ark projects).

Closed-circuit video surveillance cameras are another culture-jamming target. Maps of all the surveillance cameras in certain New York neighborhoods have been posted online (http://www.mediaeater.com/cameras). Inexpensive laser pointers have been used to temporarily disable surveillance cameras in public spaces (http://www.naimark.net/projects/zap/howto.html). Experimental dance troupes perform for cameras inside ATM lobbies [47] or stage dramatic performances in front of surveillance cameras for the benefit of whoever might be monitoring (http://www.notbored.org/the-scp.html). A British television show has sponsored a "competition for the most inventive closed-circuit television performance" [63].

Ultimately, culture jamming is a technique that "mines" mainstream media culture to criticize it. But the mainstream has become increasingly wise to the strategy and engages in "reverse jamming" of its own, for example in the case of designer Jonah Peretti's "Nike Media Adventure" [56, 57]. Scholars have noted the counter-forces of appropriation of

ideas, symbols and identities between "authentic" social and cultural movements and commercial and marketing interests [22, 49]. Some media critics object to commercial interests that co-opt the style and attitude of rebellion, nonconformity and political resistance to sell their products, arguing that such co-optation closes off the possibility of dissent itself [21].

Alternative Computing

A second genre, alternative computing, is the province of computer professionals who object to political or commercial restraints on access to information and information technology, a position that has influenced groups like the Electronic Frontier Foundation and Computer Professionals for Social Responsibility. It includes critical, but constructive, activities, such as the creation and distribution of “free” or “open source” software that competes with proprietary products (e.g., Free Software Foundation, http://www.gnu.org); planting hidden “Easter egg” codes in software programs that acknowledge the contributions of otherwise uncredited programmers ([74]; www.eeggs.com); demonstrating the built-in and usually invisible cultural and political biases of search engines (http://www.mongrel.org.uk), or publicly demonstrating the susceptibility of popular software programs to viruses or security breaches, sometimes over vendors' objections.

To quote Mark Dery, alternative computing also encompasses more disruptive “Outlaw computer hacking *with the intent of exposing institutional or corporate wrongdoing*,” such as the development and distribution of data encryption programs or remailing services that elude state and commercial surveillance [46]; disabling or sabotaging digital copy protection schemes; mapping and posting the locations of wireless “hot spots” where users can piggyback on others’ broadband access; or launching denial-of-service, spam, or "ping-storm" attacks on the systems of organizations that are viewed as exploitative, unjust or corrupt.

Historically, the roots of alternative computing extend to counterculture values that flourished in American society in the 1960s and 70s, especially among self-styled “hackers,” highly skilled programmers and engineers who were especially adept at creating elegant, counterintuitive solutions (“hacks”) for difficult or intractable programming problems [39, 55, 58, 70]. They saw computing as a force for positive social transformation, and advocated a

"...commitment to total and free access to computers and information, belief in the immense powers of computers to improve people’s lives and create art and beauty, mistrust of centralized authority, a disdain for obstacles erected against free access to computing, and an insistence that hackers be evaluated by no other criteria than technical virtuosity and accomplishment (by hacking alone and not ‘bogus’ criteria such as degrees, age, race, or position)" [55].

“Hacker culture” thus combines technological mastery and elitism with libertarian, utopian visions of a more open society [3, 71]. Hacks are typically intended to demonstrate the skill of the programmer rather than to damage or disrupt systems *per se* [58]. Distinctions are drawn between “white-hat” hackers, who might deliberately seek out and expose the vulnerabilities of systems and software programs, for example, and destructive “black-hat” crackers, who might circulate computer viruses or break into computers to destroy or steal data [36].

In recent years, however, the “hacker” label has been adopted by law-enforcement agencies, government and for-profit firms, and widely repeated in mainstream media, as a synonym for vandal, thief, or terrorist, which frames independent technological skill and creativity as deviant or criminal [55, 68, 70]. In popular culture, hacking is often associated with violations of intellectual property laws.

For example, in the widely-publicized case of online journalist "Eric Corley" (a pseudonym) and his publication *2600: The Hacker Quarterly* (http://www.2600.com), Universal Studios and other large entertainment firms sued Corley in Federal court, alleging that his publication of the Decrypt Content Scrambling System (DeCSS), which enabled users to decrypt and view legally-purchased DVDs on computers running open-source operating systems, violated the DMCA [38, 44]. U.S. circuit and appeals courts ruled that not only was Corley prohibited from posting the code itself; neither could he post links to any other site or source for DeCSS, even in jurisdictions where the program was legal. The ruling was widely seen as a blow for the press rights of online journalists.

However, neither the ruling against Corley, nor the subsequent obsolescence and replacement of DeCSS by other decryption programs, has interrupted the posting or linking to executable forms of DeCSS online, mounted as a protest movement against the DMCA within the computing community [19]. Other protesters have converted the code into artworks, arguing that works of art, unlike online journalism, are unambiguously covered by First Amendment speech protections. A DeCSS haiku has been posted online (http://www.loyalty.org/~schoen/haiku.html). Paintings, sculptures, apparel, and other works using DeCSS have been exhibited at Carnegie-Mellon University (see http://www.cs.cmu.edu/~dst/DeCSS/Gallery).

Recently activist programmers, designers, cultural critics and artists have sought to recapture and extend the positive connotation of “hacker” to include all creative and knowledge workers whose efforts are subject to commodification as intellectual property, and to "hacktivism" as a force for social good [68, 70]. As MacKenzie Wark [76] puts it in *A Hacker Manifesto*,

"Hackers create the possibility of new things entering the world. Not always great things, or even good things, but new things. In art, in science, in philosophy and culture, in any production of knowledge where data can be gathered,

where information can be extracted from it, and where in that information new possibilities for the world produced, there are hackers hacking the new out of the old."

Mediated Mobilization

A third genre of oppositional new media uses new media technologies as sites for sociality, participation, and coordinated action. Blogs, chatrooms, and acquaintance-based "social software" sites like Friendster.com, Facebook.com, and MySpace.com support networked interpersonal interaction and the arrangement of informal "live" meetings (for example, participation in smart mobs [62] or meetups for political or cultural events; see www.flashmob.com, www.meetup.com).

Of course, the use of electronic media in social and political movements is not new. Radio, sound motion pictures, and television helped promote and mobilize a "national unity culture" of consumption, popular entertainment, wartime solidarity, and economic production in the U.S. from the 1930s to the 1960s [26]. The uses of radio and motion pictures in the mass political movements of both the right and left before World War II are well documented. Mass media were well-suited to the tasks of presenting consistent, repetitive messages to large, heterogeneous audiences, shaping broad-based popular opinion, fostering mass consumption, and mobilizing political movements.

Today, however, as the "mass" view of society has given way to a more complex, dynamic view of social structure as constantly-reorganizing, interrelated networks of nodes, links and flows (e.g., [8]), new media technologies are better suited for helping people seek, find, and assess information and each other than for the wholesale distribution of messages to mass audiences. In today's media environment people cultivate relationships, seek and give advice, make recommendations, and amass and trade "reputation capital" [48] in complex and extensive social, technical and institutional networks.

The fortunes of peer-to-peer (P2P) computing systems such as Napster richly illustrate the growing interrelationships between social and technological networks and their consequences for sociality and mobilization. There is nothing inherently illicit or "oppositional" about P2P systems. As its name suggests, the software helps people locate and share information and make recommendations within a network of other people with similar interests, rather than from a central repository. Peer-to-peer systems are social and cooperative environments by definition; they are opportunities for "social authorship" among people with similar interests and experiences [2].

Yet Napster became a *cause célèbre* in the late 1990s when record companies sued its college-student creator, Shawn Fanning, on the grounds that P2P architecture was designed to facilitate the illegal copying of copyrighted material and thus violated the DMCA. Eventually Napster was forced to stop operations and its software and patents were sold to media giant Bertelsmann. Napster has since been re-established as a paid-subscription music-download service.

Today, other P2P networks with different and internationally-distributed architectures continue to operate despite the persistent opposition of the entertainment industry [78]. The U.S. Supreme Court recently ruled that companies that distribute peer-to-peer software (in this case, Grokster) are liable for the file sharing activities of their customers [17].

As Atton [2] points out, the original Napster was "socially attenuated," that is, not conceived with the purpose of advancing and defending the digital commons idea. Nonetheless, users of the surviving P2P systems increasingly view file-sharing as a form of economic and cultural resistance against an oligopolistic industry and an outmoded way of doing business.

Indymedia

A fourth genre of oppositional new media both upholds and critiques journalistic and press traditions. *Indymedia* sites, and related forms like news and opinion blogs, and wikis, provide local news reporting, commentary, alternative information resources, and critique of mainstream news, but are established and run mainly by amateur or volunteer contributors rather than professional reporters and editors. Indymedia emphasize connectivity, interactivity, and community, on breaking down distinctions between information providers, reporters and editors, on one hand, and readers/citizens on the other [12]. Indymedia constitute a "communications commons" whose watchword is "Don't hate the media -- become the media" [32].

In 1999, media activists covering the World Trade Organization protests in Seattle established the first Independent Media Center (IMC) to counter mainstream coverage of the protests, and coined the term "Indymedia" (capitalized) [30; http://www.indymedia.org]. IMCs were soon set up in Boston and Washington, using websites as well as print newsletters, radio and video. By mid-2004 over 150 such centers and websites were running in the U.S. and internationally, constituting "the largest all-volunteer media system in the world" [53].

Strictly speaking, "Indymedia," capitalized, applies only to news and opinion sites affiliated with Independent Media Centers. Recently, however, the term "indymedia," lower-case, has been applied to a variety of web-based alternative, radical or critical news sites employing the practices and/or philosophies of public, civic, participatory, or "open-source" journalism, i.e., the "indymedia news model" [59]. Indymedia proponents claim that they provide an alternative to the agendas, politics, economics, reporting practices, and ethics of mainstream news organizations, and are thus the direct descendants of "alternative" or "radical" news media [1, 2, 13].

FEATURES OF OPPOSITIONAL AND ACTIVIST NEW MEDIA

Culture jamming, alternative computing, mediated sociality/mobilization, and indymedia, then, are four distinct genres or "faces" of oppositional new media in the online environment today. Each relates to a particular social/technical domain (popular culture, technology infrastructure, social networks and organizing, and news and opinion, respectively), all four genres share several key features: they are *small-scale*, *interventionist*, *subculturally literate*, *ironic*, *perishable*, *collaborative*, and *heterotopic*.

Small Scale

The first characteristic is the relatively *small scale* of oppositional/activist projects. They are "what happens when the cheap 'do it yourself' media…are exploited by groups and individuals who feel aggrieved by or excluded from the wider culture" [23]. They are run with minimum investment: ®™ark distributes no more than a few thousand dollars of donor money per project. Indymedia sites are sustained by volunteer staff and donated equipment. Blogs are typically run by private individuals or small teams. The small scale of most oppositional sites therefore tends to give visitors and participants a sense of being an insider or initiate.

Interventionist

Oppositional/activist projects are also *interventionist*. Their creators aim to subvert commonsense or taken-for-granted meanings and situations, to "introduce noise into the signal" (Dery), "jam dominant media transmissions" [29], or "create situations in the world at large" [72]. These

"...media projects, interventions and networks...work against, or seek to develop different forms of, the dominant, expected (and broadly accepted) ways of 'doing' media" [2].

Projects can either constitute intervention and action in themselves (e.g., performances by the Surveillance Camera Players; the persistent posting of DeCSS code on U.S. websites), or invite and motivate intervention by others (e.g., ®™ark's "Mutual Funds," which solicit "investors" for prospective artworks; Michael Naimark's posted instructions for disabling surveillance cameras).

Dery argues that those who make counter-intuitive interpretations of the dominant culture are practicing the "guerilla semiotics" advocated by Umberto Eco in 1967 [14]:

"...the battle for the survival of man as a responsible being in the Communications Era is not to be won where the communication originates, but where it arrives."

Subcultural Literacy

Oppositional/activist media projects both manifest, and expect from their audiences, a relatively high level of *subcultural literacy* [31], a "hyper self-reflexivity about the nature of pop culture" [10], an acute awareness of and referentiality to everyday events, styles, and ideas. Popular issues, images, buzzwords, and attitudes are selected, captured, subverted, co-opted, fragmented, recombined and re-presented in unexpected (and ideally felicitous) ways. For example, Deuze [12] emphasizes the role of *bricolage* in indymedia sites, of bringing diverse materials together with a pastiche effect.

Subcultural literacy thus links oppositional new media to a longer legacy of radical, activist and subversive art, such as the photo-montages made by John Heartfield in the 1920s and 30s, conceptual art by Fluxus in the 1950s and 60s, and the *détourned* collages and cartoons related to the French student uprisings, made by the Situationists in the 1960s [65]. Guy Debord called *détournement* a "strategy of diverting elements of affirmative bourgeois culture to revolutionary ends, of distorting received meanings" [50; see also 20, 27, 75]. The same technique is employed today in projects like *Get Your War On* (www.mnftiu.cc/mnftiu.cc/war.html).

Ironic

Oppositional/activist projects also tend to be *ironic*, playful, humorous, campy, or parodic [6]. "[Culture jamming] is immature…[it] celebrates the possibility of ironic, humorous and contradictory political actions" [57]. Projects "…do not take themselves that seriously…they know how to laugh" [45]. Many projects employ humor as a rhetorical tool. The absurd quality of much of mainstream culture, economics and politics is exploited by the Surveillance Camera Players, The Yes Men, ®™mark, and instigators of smart mobs, for example. Even situations that are not intentionally humorous or ironic can be reframed ironically, as the artworks in the Carnegie-Mellon DeCSS Gallery do with the *Hacker Quarterly* case.

Perishable

Many oppositional/activist sites are also *perishable*, ephemeral responses to rapidly-changing cultural contexts and meanings. Like the social and technological networks that support them, projects and the links among them organize, disorganize, and reorganize more or less continuously. Neither the infrastructure nor the content of networked new media have stable form or fixed structure. They are notable for their "mobility, [their] flexible response to events and changing contexts" [52], and "…capable of taking risks, even if this means they might self-destruct in the process" [45]. Smart or flash mobs, for example, are organized online on the spur of the moment, and disperse almost as soon as they form (see www.cheesebikini.com; also [62]). In this respect, these projects resemble works made in earlier movements, like conceptual and performance art, which were deliberately made not to leave material (and thus collectible or commodifiable) traces or remnants.

Collaborative

Oppositional/activist projects are generally *collaborative*. Community, interactivity, and participation are assumed in

their design and organization. The power of a site or project "lies less in the information that it carries than in the communities it creates" [64]. For example, wikis are collaboratively-built, independent, online collections of reference information and advice. Regarding indymedia, Platon and Deuze [59] note, "The potential for immediate interaction between users on the internet surpasses all other media…[Indymedia] also has an increased potential for (re)connecting media formats and forms of journalism with different types of community." The point was made previously regarding the "social authorship" of peer-to-peer systems [2]. Even projects created by individuals, such as personal or opinion blogs, seek response and participation from their readers/viewers.

Heterotopic

The capacity of oppositional/activist media projects to reach and organize groups of people with specific interests also makes them *heterotopic*. That is, oppositional sites often constitute diverse "other spaces" for personal and group expression, affiliation, and creativity, apart from the mainstream or dominant culture [40]. Critics have noted the potential for social fragmentation, or the loss of civic or public culture, in the diversity of online sites (e.g., [54, 67]). However, such "cyber-separatism" or "nanoaudiences" [31] may be balanced by the growing tendency of underrepresented groups to seek greater visibility or legitimacy for their views in the global arena by going online, as in the widely-cited use of websites by the Zapatista movement in Mexico in the 1990s [2, 24, 51, 78].

THE CONTESTED MEDIA LANDSCAPE: IMPLICATIONS FOR PARTICIPATORY DESIGN

As the preceding discussion suggests, the contemporary media environment no longer belongs exclusively, or even primarily, to traditional media industries, content, or forms. Increasingly, traditional media must contend with small, localized, innovative, and counter-cultural "micromedia" that sample, capture, co-opt, criticize, hack and parody the mainstream cultural products the industries produce. What are the implications of this contested landscape for participatory design?

Design and Access

An essential consideration in the design of systems that enable and encourage participation is *access*. Without access, participation is impossible; designers must create affordances and features that make systems readable and usable. A long line of research in social informatics, computer-supported cooperative work, and other areas suggests that basic assumptions about technology itself, about system users, their behaviors and practices, and about their relationships with each other and with the institutions that organize social interaction and meaning, are "inscribed" in the affordances and features built into infrastructures, and can largely determine the nature and quality of access users can expect [33, 41, 66].

As the discussion at the beginning of this paper suggests, perhaps the most powerful assumption or governing principle underlying the traditional media environment has been the notion of *property*. Traditional media firms have tended toward concentrated, centralized ownership in order to exploit industrial-style economies of scale and to maximize return on the mass production and distribution of tangible products such as movies, software, music CDs, and books. Their success and profitability have depended on the efficient control and use of fixed, capital-intensive, hierarchically-organized production and distribution facilities and other assets (e.g., radio and television stations, motion picture studios and theaters, printing plants). Firms have also exerted strict gatekeeping control over the distribution and sale of their products, especially through progressively more restrictive intellectual property regimes that expand property claims beyond tangible assets and products, to intangible cultural practices, relationships, and resources [9].

Under these conditions, "access" to media and information technologies has been more or less synonymous with the availability of various products, systems, or services. It permits participation only in the sense of reception or consumption, whether of tangible (books, television programs) or intangible (rights, licenses) media products. Designers have created systems and uses that suit this "pipeline" model of media production, distribution, and consumption and that have made the rapid, efficient delivery of media and information goods simple and easy.

In contrast, the governing principles underpinning the new media and information technology environment have more to do with *voice* and *affiliation* than with property. The current environment is as much an arena for speech, interaction, and relationships as for the production and consumption of entertainment or information products. Reputation, credibility, visibility, and trust have become the essential "currencies" online [34, 48]. Network externalities, rather than economies of scale, determine the value of new media: the larger and more heterogeneous media systems are, the more valuable they are to each individual user.

Access, accordingly, is not solely a function of how much of the system is owned or by whom, but is also determined by the system's *scope* (the variety of available users and technological and informational resources), *connectivity* (how well and how easily it links users to each other and to informational resources), and *utility* (how well it helps people do what matters to them). To foster participation, designers must deal with all of these factors and create systems that can serve as venues for sociality, relationships, mobilization, identity formation, and speech, as well as reception/consumption.

Reconfiguration, Remediation

The contested media landscape also suggests that two critical mechanisms play a role in participatory systems

design today, particularly in the cycle of co-optation and engagement between the mainstream "center" of the environment and its more diffuse, interactive, and participatory "edges": the *reconfiguration* of technological systems, and the *remediation* of content.

First, participatory design of new media and information systems increasingly is based on reconfiguration, that is, the modification and adaptation of technologies as needed to suit particular purposes. As recent history demonstrates, new media and information technologies tend to resist fixation, stabilization, and centralization. In many ways, the ongoing process of innovation, adaptation and reinvention of new media and information technologies distinguishes them from older mass media systems, which are heavily capitalized, infrastructurally embedded, more likely to have a stake in the existing technological base, and thus less likely to innovate.

For example, no single entity, group or industry controls the majority of the Internet, as has been the case for the motion picture, recorded music, or broadcasting industries. Likewise, many of the most interesting and useful innovations have been created by independent "edge" inventors like Shawn Fanning. The scope, connectivity and utility of his solution to the file-sharing problem (Napster) prompted others to adopt it.

Remediation of content and forms is a second important factor in participatory design in the new media environment. Bolter and Grusin [5] define remediation as “the representation of one medium in another,” including straightforward repackaging (e.g., storing still photographs or tape-recorded music on CD-ROM), augmentation or enhancement (e.g., online newspapers or encyclopedias that combine hyperlinking, audio, and motion images with conventional text), refashioning (e.g., “tiled” windows on a desktop or television screen, perceived by the user as a composite whole), and absorption, where one medium fully captures another (e.g., as video games use many of the cinematic and plot devices of motion pictures). Whether these techniques are used alone or together, existing content and forms are borrowed, adapted, sampled, or remixed to create new expressions, new relationships, and new content. Of course, there is nothing new about this basic process from a creative point of view, but Bolter and Grusin argue that digital media tools have helped make remediation the hallmark of contemporary creative work and media culture.

The lesson of oppositional and activist new media projects for participatory design, then, is that they are indeed “laboratories” where users resist the fixity of traditional systems, and negotiate and shift the boundaries of old and new media, in an ongoing process of co-optation and reinvention. Participatory design in this environment is necessarily recursive, in the sense that participation is both the means of designing usable and meaningful systems and content, and because participation is also the goal or outcome of well-designed technologies. Designing for participation means designing for access, designing for reconfiguration, and designing for remediation.

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