
THE BANFF NEW MEDIA INSTITUTE DIALOGUES
EUPHORIA & DYSTOPIA
EDITED BY SARAH COOK & SARA DIAMOND

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7

Production & Distribution in Models of Collaborative Practice

SARA DIAMOND & SARAH COOK

The first chapter of this book dealt with metadata—the detailed way to find out about the data of the dialogues themselves. Here, in the last chapter of the book, we come to the meta-topic of all of the dialogues of the Banff New Media Institute: How do we produce and distribute new-media work and, moreover, how do we manage the inevitable collaborations that result through working in this field? At times during the editing of this text, it has felt as if this chapter could be the entire book—or, rather, as if everything in this book could fit into this thematic chapter (as such, it has been tremendously difficult to choose the contents of this chapter, and to edit it down to size).

This chapter also represents a more recent concern evidenced in the transcripts predominantly dating from 2000 onward—the writing of histories of new-media production. (This practice is now gaining ground internationally as organizations similar to The Banff Centre publish decade-long anniversary anthologies, and conferences such as *Media Art Histories*, which began at Banff as *Re:fresh!*, *First International Conference on the Histories of Media Art, Science & Technology,* (2005) increase their presence in academic circles.) Examining the "how," "what," and "where" of new media is increasingly in vogue. Writers are embracing materialist approaches to technology and sociological approaches to studies of "the lab." Reflecting on the techniques of how work is made and shared is a crucial part of that history, as Eric Kluitenberg's intelligent essay suggests.

WHO PRODUCES AND WHO DISTRIBUTES

The Banff New Media Institute was always interested in hearing from people who were actively creating platforms for the production and distribution of new-media content. Similarly, the BNMI sought to identify and share the best strategies for working together in networked environments, online and offline. As such, the transcripts in this chapter always have in the background the crucial question of the effects of the shifting spaces of cultural production—including, most critically, museums, galleries, the web, media labs, industry, universities, art and design institutions, and science labs.

It is especially important that this chapter contains the voices of those present at the *Curating and Conserving New Media* workshop held in 1998, as that was the first time that museum professionals, independent festival producers, and curators met to chart this new field of art production. In her "pop-report" on the event, curator Kathy Rae Huffman pointed out the difficulty of un-entangling production from distribution in the new-media field:

> [The workshop] centred on the issues of curating for the online environment. This "hot topic," frequently discussed informally among artists and at family gatherings of the Net.community, has become more important during the last years as more official institutions, museums and state arts agencies are taking up residence on the World Wide Web. The irony is that many artists who have established art websites have, by default, become curators and organizers of Net.galleries, and de facto editors of online journals—to bypass the Contemporary Art system that generally ignores Internet as a serious artspace.[1]

This event, transcripts of which are in this chapter, included a number of artist/curator hybrid types presenting their "platforms" for both the production and distribution of new-media projects. It underscores the important place that the demonstration of work held within the BNMI summits. Many of these types of show-and-tell presentations are difficult to reproduce in transcript form without audiovisual accompaniment and thus don't appear within this book, but are best testified to in the reports on the events available in the BNMI archives. For instance, Martin Schmitz from the Europe-wide, Hamburg-based artist project Van Gogh TV[2] discussed how one might create "the ultimate museum presence online" in his description of a structure for the organization of information: "the content management system (CMS) works between HTML and VRML to allow the creation of a 3D presentation system. Created as an online working environment for curators, the public, and artists, it can be used with high-end office PC workstations."

In contrast to these platforms produced with easily available tools and software, producers were just as likely to present more ambitious, far-fetched projects. Huffman's report states that

> David Plant, the representative of Silicon Valley North, presented another model, the SGI Virtual Museum project. This system, with its 20 Terabyte trashcan, does, as Plant stated, "just about everything that can be done in digital technology." It requires

1 The event took place from May 25 to 30, 1998. The report, available in the BNMI archives, is dated June 28, 1998, and was originally published at http://www.heise.de/bin/tp/issue/dl-print.cgi?artikelnr=4114&rub_ordner=pop&mode=print.

2 Van Gogh TV created numerous interactive and telecommunications-based works (both offline and as broadcast works) that invited audience participation.

> an Onyx Reality Engine to run real-time, but will allow detailed representation of master artworks, even to the level of artistic interpretation. Plant demonstrated the system from video documentation, showing how artworks could become a kind of "setting" for an animation, and examinations of the artist's subject matter. A test project now being created with the British Museum, the SGI Virtual Museum is currently estimated to take approximately 20 years to complete (and 20 million British pounds). It will ultimately connect major museums throughout Europe.[3]

With hindsight, we now know that this system didn't come into being, as the growth of the World Wide Web continued to allow museums and all creative content producers large and small to develop their own presences and individually authored platforms.

PRODUCTION: TOOLS OF THE TRADE

Much of the discussion at the BNMI was held without knowing what tools would be developed and how the landscape of new media might change, but participants often displayed an uncanny ability to describe these technologies—with sentiments that could be described as euphoric. In the audio recordings, we hear people talking about DVDs without knowing what they would be called, while others discuss how users navigate the interface of websites and physical objects without knowing that we would one day be living in "an Internet of things." In the dialogues, there is a constant reflection on the tools of the trade available, and on the possibilities of designing new ones. For instance, dialogues at Banff considered how the collaborative nature of documentary (whether filmmaking or other forms of interactive documentary projects) could be strengthened by digital tools. Michael Moore, whose documentaries are constructed through discursive interaction with his subjects, participated in *The Documentary Deluge: What's Fuelling the Documentary Revival?* (1996). At *Synch or Stream: A Banff Summit—A think-tank or networked audio and visual media* (1999), Peter Wintonick provided a very early vision for the ways that digital technologies would provide avenues for citizen journalism and inclusive documentary.

Prior to the founding of the BNMI in spring of 1994, The Banff Centre held a design symposium on authoring tools.[4] The intention of the event was to challenge the

3 Kathy Rae Huffman, "Curating and Conserving New Media Pop-report" (report, Banff New Media Institute, 1998)

4 The *User Symposium on Authoring Tool Design* took place across four days from March 27 to 30, 1994, as part of the New Media Research Project of The Banff Centre. It was led by Sara Diamond and Kevin Elliott, and was structured around seminars for professionals in film, TV, video, and other "related time-based mediums."

limited set of tools on the market and insist on an artist-driven design process. The report on the event, prepared by Don Romanchuk, retells the story of the three main issues facing new-media project production: 1) the need for an author's workshop/toolkit, 2) the desire for adaptable interfaces—both for creators and for end users, and 3) a consideration of authoring grammars—how to recognize that new-media creative work might require different approaches than work based on narrative, oral tradition, or documentary. This early groundwork on the question of how one might create new tools for use within the new-media landscape was crucial to later discussions at the BNMI. Indeed, looking back, some items on the "wish list" for laboratories and new-media production toolkits still seem very current:

- Feature a visual interface;
- Involve time as a key component;
- Allow for scalability;
- Be user-definable and configurable with multiple grammars;
- Support network communication;
- Allow prototyping with feedback and debugging;
- Be cross-platform compatible with all current media formats and standards through appropriate input and output devices;
- Allow access/connection to existing production tools;
- Be transparent and non-obtrusive;
- Allow for copyright-free run-time versions;
- Be able to make templates and recycle projects;
- Be configurable to run on affordable systems; and
- Be kept up to date with the evolution of technologies.[5]

In this chapter, a number of people report on the emergence of laboratories, providing historical context and contemporary analysis (and often applying science and technology-studies methodologies to understand how laboratories evolved); these speakers also explore how the material conditions of production in the laboratories influences the work made in them. Michael Century, a key figure in the founding of new-media research at Banff, was invited to give the keynote at *Bridges II: A Conference about Cross-Disciplinary Research and Collaboration* (2002), in which he reflected on the history of art and science lab collaborations in "collaboratories."[6] Similarly, at the *Human Generosity Project: Tools That Enable Collaboration* summit (2001), Anne Nigten,

5 From the report on the *User Symposium on Authoring Tool Design*, available in the BNMI Archives.

6 See the *Bridges* II discussion on page 872. See also Michael Century, *Pathways to Innovation in Digital Culture* (New York: Rockefeller Foundation, Arts and Humanities Section, 1999).

Michael Century presenting the history of "collaboratories." *Bridges II: A Conference about Cross-Disciplinary Research and Collaboration*, 2002. Courtesy The Banff Centre.

formerly a lab manager at V2_ in Rotterdam, examined multi-user environments and discussed how to muster collaboration in productive online spaces.

In reading the BNMI dialogues, it quickly becomes apparent that inquiries about tools and the design process (and the labs in which production takes place) are more than just technical questions—they are tied into entire belief systems, methodologies, and ways of working. This is perhaps best demonstrated in presentations from the summit *Skinning our Tools: Designing for Context and Culture* (2003), which picked up the challenge of design-specific versus generic tools and interfaces. Playing on the vocabulary of computer games, organizers asked, "Can we change the skins that our technologies wear? What tools need to be generic, or, more to the point, what components of tools can be generic what elements adaptive and sensitive to the context of use? What does localization really mean or require? What tools should be built from the bottom up, within a specific context? How can that be supported?"[7] This summit was developed with the School of Creative Media, Hong Kong University; the University of California, San Diego; Calit2; and the Aboriginal New Media workshop organizing team at The Banff Centre.

7 From the agenda for *Skinning our Tools: Designing for Context and Culture* (2003).

Skinning Our Tools was rife with case studies from around the world, each of which highlighted artists' efforts to develop participatory approaches to technology innovation. Mervin Jarman,[8] then part of the UK–based artist group Mongrel, along with his collaborators Camille Turner[9] and Sonia Mills,[10] presented *The Container Project* (excerpted in Chapter 5). Aboriginal artist and curator Skawennati Tricia Fragnito described her ongoing collaborative project *Cyber PowWow*, a BNMI co-production. Fatoumata Kandé Senghor and Sylviane Diop discussed labs in Senegal (these talks, along with the question and answer session which followed, are excerpted in this chapter). An artist's talk by Paul Vanouse[11] examined "Genome Technologies: Profiling, Identity and Resistance" in his practice. While artists' works were inspirational and deeply context-specific, engineers also shared their understanding of the challenges of designing tools and platforms for individual or collective participation. For example, in his presentation, excerpted in this chapter, Stephen Marsh[12] questioned the idea of specific tools versus inclusive, mass-produced tools, in which the interface would adapt to individuals in very precise ways—a notion now prevalent in inclusive design.

Participants at *Skinning our Tools* considered whether collaboration is culturally mediated and site-specific, and wondered whether technology and interfaces might need to adapt within and across cultures. This continued a research thread within the BNMI that addressed the impact of bringing generic tools into specific contexts and adapting these—both in terms of cultural impact and in terms of viable business models.

DISTRIBUTION: PERFORMING NEW-MEDIA WORK

Living Architectures: Designing for Immersion and Interaction (2000) was a large part of the Banff New Media Institute's Human Centred Interface Project,[13] which began with the 2000 summit *Emotional Computing: Performing Arts, Fiction and Interactive Experience* (described in part in the introduction to Chapter 5).

Emotional Computing was an early summit that brought together presenters who were international artists from theatre, choreography, music, design, computer science, engineering, and performance theory. A group of artists from the *Big City*

8 Director, *The Container Project*
9 Media and Performance Artist/Cultural Producer
10 Associate, *The Container Project*
11 Assistant Professor of Art, University at Buffalo
12 Research Officer, National Research Council, Institute for IT (Ottawa)
13 The research initiative was made possible through the support of the Alberta Science and Research Authority, Research Development Initiative, Out of the Box, and SSHRC, in association with Telefilm Canada, SGI Canada, Montage, Silicon Valley North, Canada Council for the Arts, and other partners.

Visual Arts residency, whose work looked at emotion, identity, and performance, joined the summit. The premise of the event was to explore the ways in which the canon of performing arts and performance practices provided an invaluable resource from which to build next-generation new media. These practices combine physical discipline with improvisation and narrative—often achieving a sense of presence and provoking emotional experiences for the artist, the participant, and the audience. Performance—with its emphasis on "liveness" and simultaneity—has a long history of combining individual and collaborative modes of production and distribution.

One set of researchers produced experiments in online, real-time improvisational theatre. They considered the ways in which narratives unfolded, as well as the ways in which performers and audiences engaged or failed to engage. The performing arts have a long tradition at The Banff Centre, and were explored at the event by the leaders of these Banff programs, on panels such as "Legacies." For instance, Keith Turnbull (who led the Theatre Arts program) and Richard Armstrong provided their views about the impact of digital culture on live performance. Lizbeth Goodman[14] drew from her history of online Shakespeare and improvisation to discuss the ways that users and audiences can collaborate, perform, and analyze stories, both live and online.

Other panels included choreographer Susan Kozel, who discussed character development through abstract interactions; Bernie Roehl of the University of Waterloo, who had created avatar-based interactive online theatre; and Catherine Ikam, whose uncanny virtual-reality faces, projected into the room, appeared to be following audiences' movements with their eyes, while responding to their facial expressions. During one of the evenings, Adrienne Jenik[15] created an online theatre event entitled *Desktop Theatre*, which was made up of a series of events that connected actors online through virtual performances. Another online theatre presentation consisted of documentation from *Desert Rain*, Blast Theory's lauded immersive-theatre piece. These events were contrasted with live presence as Maurice Yacowar[16] read from his novel *The Bold Testament* and his work-in-progress *The Sopranos on the Couch.*[17]

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14 Director, Researcher, and Senior Lecturer, the Institute for New Media Performance, School of Performing Arts, University of Surrey

15 Visual Arts Department, University of California, San Diego, and Assistant Professor of Computer and Media Arts

16 Dean of Fine Arts, University of Calgary

17 Maurice Yacowar, *The Bold Testament* (Calgary: Bayeux Arts, 1999); *The Sopranos on the Couch: Analyzing TV's Greatest Series* (New York: Continuum, 2002).

The enduring elements of narrative and emotional engagement across media began to emerge through these comparisons of form.

"Oral cultures, storytelling roots, processes, and interactions" were valued in relation to new media and online experiences, with a diverse group of Aboriginal artists—including Elaine Bomberry,[18] The Banff Centre's Marrie Mumford,[19] and Lee Crowchild[20]—presenting their approaches. Visual artists provided a critical perspective on emotionally engaged performances. For example, Eric Maillet responded to the concept of presence with a discussion of "deceptive information and dysfunction." Jason Bowman presented his work in the context of "misrecognition, blind and deaf interactions," suggesting that the Internet provided unexpected, mediated performances when technology intervened to contradict artists' intentions in exciting ways. Patricia McLaughlin focused on the humour of online performance. Web artist Ursula Endlicher challenged the viability of performance on the web. British choreographer Susanne Clausen and artist Pavlo Keresty discussed other kinds of disruptions through their performances, which they undertook in unexpected places, describing them as "a stream of film and performance images [that] crash choreographed into a critical sphere." An *Emotional Computing* panel chaired by Celia Pearce and Sara Diamond explored changes in the practice of narrative, writing, and, directing in relation to online presence, focusing on tools and enabling environments. It included a prescient presentation by Bob Stein[21] (excerpted on page 878), about "talking books" and tools to build deep narrative interaction based on story.[22] At *Telus Presents: Out of the Box: The Future of Interface* (1998), David Martin presented very early intelligent-whiteboard technology.

Both *Living Architectures* and *Emotional Computing* sought to bring together artists, engineers, and designers in order to develop shared approaches to the problems of designing highly responsive spaces, contexts, and their contents. *Living Architectures* considered tools for this from every possible angle: intelligent software and surfaces; network capabilities; microwave and cellular technologies; motion-sensing systems; Internet architectures; satellite communications; projection; and neural networks. Questions included: "Can we develop a shared protocol? How can we create affordable environments that can

18 Aboriginal Radio Producer and Artist
19 Theatre Producer, Artistic Director of Aboriginal Arts
20 Dancer, Games Developer
21 CEO, Nightkitchen
22 Peter Ride, then Artistic Director of DA2, discussed the ways in which curatorial practices were shifting to facilitate the presentation of virtual reality and immersive interactive works. Frank Boyd, Director of Unexpected Media and Future Change for the BBC, provided an overview of new developments in interactive television.

link together and support creative projects and learning? What are the applications for these environments? How can artists, designers, architects, and software creators build a closer alliance? Where do these design projects fit in the world of public and private art? Should spaces create context or be content-laden?"[23]

At *Living Architectures*, University of Calgary computer scientist Saul Greenberg, a regular presenter at BNMI events, provided a suite of networked tools, and University of Alberta computer scientist Mark Green shared his work in building collaborative virtual environments (both talks are excerpted in this chapter). Artists conceived of idiosyncratic collaborative tools. For example, at *Interactive Screen* (1998), Brazilian artist Artur Matuck presented an early whimsical mash-up word project in which individuals contributed words that were then remixed.[24]

REMIXING CULTURE: COLLABORATING ONLINE

The increasing ease of producing and distributing media with accessible online tools was also a constant topic of discussions at Banff. For a brief period at the turn of the century, streamed media provided a burst of exciting alternate culture, mirroring the pirate-radio movement of bygone days. These events occurred well before YouTube and were a precursor to the popularity of online video that dominates the current period. *Synch or Stream* focused on the accelerated phenomena of streamed media—in particular, audio, video, and text on the World Wide Web. It consolidated the burgeoning culture of streamed audio and video on the net, considered technical and policy issues, and assisted in the development of emerging creative forms. It considered streaming as a means to engage with subcultures and saw new forms of audio and video access, bringing "immersion, expression and interaction."

The event was jointly chaired by Susan Kennard, Heath Bunting, and Yvanne Faught, and the key questions asked were: "What do we mean by streamed media? What are the relationships between converging media, new forms of creativity, and new economies? What are the challenges for current media? What are the challenges for the Internet as we know it? Who are the audiences/users/players? What are the forms of literacy and competency needed to succeed? What are the design, equity, and policy challenges? What concepts describe the practice?"[25]

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23 From the agenda for *Living Architectures* (2000).

24 See http://elenes.com/s09m/am/final_paper.html for a recent variation on Matuck's early work.

25 From the agenda for *Synch or Stream* (1999).

Panels mixed and matched artists and community radio activists, providing a sample of international efforts. For example, Susan Kennard, Heath Bunting, and Yvanne Faught had established Radio90, a low-band FM and streamed-radio environment that would house resident artists and provide a platform for music, sound art, and commentary at Banff. Rachel Baker discussed Backspace, an artists' space in London that acted as a gallery, lounge, and resource centre, and had built a streamed radio venue. Artists and technicians had quickly created new tools that allowed programming to be automated and shared. Honor Harger represented r a d i o q u a l i a and spoke about "New Relations with New Events, Participatory Audiences, Interventions." Thomax Kaulmann of Radio Internationale Stadt (Berlin) had created a site to aggregate and stream music from the European alternate music scene and audio programs produced by other cultural institutions; through his presentation, he demonstrated how his work sought to provide these practitioners with a platform. Timothy Childs, a former VRML specialist, had created Oz Media, which was capable of streaming 3D images over the Internet; Jason Lewis of Interval Research demonstrated his text graffiti technologies, which allowed multiplayer real-time interactions with text over the Internet.

In a panel entitled "Theorizing the Future: Understanding Streaming, Impacts, Ideas and the Design of the Net, Economy, Democracy, Synchronous/Asynchronous," Martha Wilson, founder of Franklin Furnace, described her groundbreaking work in wholly transferring a physical performance art centre onto the Internet. Case studies featured streamed events such as: Ken Gregory's *Under the Influence of Ether*; Abbie Phillip's groundbreaking commercial work with film, television, and music on the web; and Mark Morris's *The Raven King,* a live and online children's opera. Melanie Printup Hope also shared her online video work. Other sessions included practical instruction on how to begin a streamed-radio station.

INEVITABLE COLLABORATIONS

Some of the discussions that came up in the previous chapter ("Money & Law") are also hinted at here, in terms of thinking not only about how to produce but also how to promote new-media work to audiences and consumers. This raises questions of how exactly producers think of the audience—as an interactant, an observer, or a participant. The exchange economics, in terms of gifts, comes up often when artists clash with more commercially driven software producers, as we hear in the voices of participants speaking from the floor after the presentation from artist Simon

Pope at *Interactive Screen* (1998). This clashing of methodologies is the impetus for collaboration, and as the BNMI moved through the post dot-com crash of the early 21st century, more and more people came to the summits to seek out collaborators. Eventually, collaboration became a topic of the summits themselves (and also, in part, led to the introduction of a fourth day at the end of each summit, when participants were given workshop time to develop ideas more fully).

Occurring after the dot-com crash and September 11, 2001, *Bridges II* was a broad-ranging academic conference, supported by the Rockefeller Foundation, the National Research Council of Canada, the Alberta Science and Research Authority (ASRA), Telefilm, the Social Sciences and Humanities Research Council (SSHRC), and Bell GlobeMedia, as well as by the federal and Alberta governments. It was intended as an exploration of the implications of new trends in research practices—especially in the domain of interdisciplinary collaboration between artists, humanities and social-science researchers, scientists, and engineers. It interrogated the questions "what is art" and "what is science," understanding these as different communities and cultures of practice with something to say to each other—if they could find a shared language. It included a significant number of scientists and had a truly international outreach.

The organizers argued that convergence manifested less through technology and more through the activities of people enabled by technologies. The cultures that were brought to the table by researchers acted as mediating factors, sometimes inhibiting and sometimes enabling collaboration. *Bridges II* pinpointed collaboration itself as a skill to be identified, studied, and learned. The event provided both plenary lectures and a series of case studies in order to propose practical strategies for including collaboration as a vital component in education, creation, and research. The objective was to identify best practices, amplify existing networks, and stimulate the development of others—all to provide a means of productive communication for those engaged in the reality of collaborative research. *Bridges II* included explorations of language—its understanding and misunderstanding—as a critical factor in the success of collaboration. The emphasis for *Bridges II* was cultural context, as well as ethical and aesthetic dimensions and the practical challenges of research collaboration.

The panels were provocative and allowed researchers to publicly interrogate their past practices. One of a series of panels entitled "The Science of Collaboration—Methods" asked, "What models do we use when we build collaborative environments? Laboratories? Corporations? Networks? Open Source Software? Peer-to-Peer?

Universities? Collectives? Historical Cultural Models?"[26] Co-moderated by Susan Bennett and Sara Diamond, it included cognitive scientist Brian Fisher,[27] who argued for the need to break the boundaries of cognitive science and to find knowledge "from a variety of fields" so as to allow "focus and intellectual rigour to emerge from praxis rather than discipline." Fisher's talk is excerpted in this chapter. He was followed by Simon Pope, who asked the challenging question: "open-source and free-software 'movements'—are these software-development models really models for artistic collaboration? Who do these models exclude?" This presentation is included in Chapter 6 ("Money & Law").

The panel "Aboriginal Collaborations—Within and Between Nations, Within and Between Cultures" was co-moderated by Sara Diamond and Ahasiw Maskegon-Iskwew. It featured Christine Morris,[28] an Indigenous scholar who spoke about "Indigenizing the Effects of Global Culture—Oral Cultures and Technological Hegemonies." Morris explained concepts of copyright and legal responsibility in relation to knowledge generation and transfer within research practices in her community, stating that

> Symbolic forms of communication like [computer games] convey the Indigenous intellectual reality much better than the linear written text. I eagerly anticipate the development of anything that resembles our symbolic forms of knowledge transfer, which foster interactive thought processes. However, the transferring of this knowledge needs to be through osmosis not through Western formalized "teaching" methods in which the Indigenous student is presumed intellectually handicapped the moment he walks in the room.[29]

This panel is excerpted on page 939.

Bridges II included a mini-festival of collaborative works. The first evening was the result of submissions, and the second featured a selection of artists and projects curated by Sarah Cook. This latter evening also featured a dialogue on the ethics of collaboration with UK artists Alison Craighead and Jon Thomson (who practice as Thomson & Craighead) and American artist Jon Winet—artists who all work between the art world, industry, and academia. Both evenings of *Bridges II*

26 Tania Fraga da Silva (Professor, Department of Visual Arts, Universidade de Brasília, Brazil) gave her case study for *Aurora 2001: Fire in the Sky* and *Hekuras*. These were collaborative projects, each trying to gather "Ancient and Scientific Knowledge: New Aesthetics, New Practices Across Cultures."

27 Associate Director, Media and Graphics Interdisciplinary Centre, MAGIC, University of British Columbia

28 Arts Queensland, Queensland University

29 Christine Morris, "Indigenizing the Effects of Global Culture—Oral Cultures and Technological Hegemonies" (lecture, *Bridges II*, 2002.)

included examples of work and analysis, as well as discussions of the curatorial context for collaboration in art and technology. The presence of artworks and their makers—both artists and scientists—grounded *Bridges 11* in the reality of creative practice.

The Beauty of Collaboration: Manners, Methods and Aesthetics (2003) summit was created in collaboration with INCITE (a sociology institute led by Nina Wakeford at the University of Surrey's School of Human Science)[30] and brought together expertise in computer-supported cooperative work, computer-supported communities, collaborative videoconferencing, online discussion, chat and design systems, agent technologies, human-computer interface design, distance learning, online moderation, and performance. While the intention was to discover a new aesthetic that derived from collaboration in new-media contexts, there were a wide variety of key questions, including:

- Can we design "architectures of trust?"
- What is a computer-supported community?
- How do online communities differ from parallel physical communities?
- Can machines and software be designed to facilitate human collaboration with intelligent tools?
- How does cooperation differ with mobile platforms?
- Are new kinds of knowledge generated that have not been accessible before?
- Are there new forms of expression, and new identities that result?
- What can we learn from historical precedents such as chat spaces, role-playing environments, media-production cooperatives, artists' collaborations, and scientists' collaborations?
- What kinds of systems and tools can we design to facilitate collaboration?
- What are the protocols of these collaborative systems and tools?
- Do needs differ across cultures or disciplines?
- Can consensus bring about beauty?
- How do we evaluate cooperative initiatives?
- Is "collaboration" always a positive word or value?
- What about individual achievement?
- Can participatory cultures be built?[31]

30 Throughout the summit, INCITE research fellow Kris Cohen and director Nina Wakeford presented puzzles, projects, and analysis that were meant to challenge assumptions about the meaning or ease of collaboration, which supported cooperative processes. Cohen and his sometime collaborator, artist Ben Coode-Adams, suggested new aesthetic forms that resulted from their work together.

31 From the outline for the *Beauty of Collaboration* summit.

Michael Boyce's report from that summit provides thoughtful evidence of the complex mediations that technologies enact within the creative production process, and also makes reference to the gnarly nature of dialogues that try to understand humans and machines as actors within the network of production:

> And what is, perhaps, interesting, here, is not so much the old chestnut concerning whether or not machines can harbour or allow for human relations (forcing human network relations into restrictive interactive paradigms and reduced pattern variables), because human relations are always and already that which are object and subject, of and to, a mechanics (machinery, technology), the specifics of which are always (yet) to be determined, (those paradigms and pattern variables are always facing relative cementing and deconstruction in relation to those models, strategies, etc., which face-off within human interaction, according to a measure of their own abstraction and practical viability)—but rather, how the mechanics (engineers, workings, design, etc.) of human relations are applicable to, and manageable within, a social production of technology(ical) culture (as the prospect of making the mechanics more human).[32]

Edward A. Shanken[33] provided a thorough overview of the emergence of collaborative practices in new media, making reference to collaborative practices in the production models of previous media. On a panel comparing local dialogues and distributed dialogues, Janet Abrams,[34] a renowned moderator, shared her techniques for eliciting meaningful debate, whether online or face-to-face.

There was a fair amount of repartee between artists and scientists as they explored collaborative approaches and protocols. Lyn Bartram[35] explored her systematic investigation of the relationships between cognitive processes and collaboration interfaces, as well as the challenges of creating systems to evaluate collaboration. In their paper "Artistic Virtual Environments: Analysis and Creation through Collaboration," Gregory Little,[36] Brian Betz,[37] and Dena Eber[38] presented a parallel set of technologies and collaboration methods, as well as criteria for evaluating success. In his keynote address, Ron Baecker,[39] leader of the collaborative engineering consortium Network

32 From Boyce's unpublished report on *The Beauty of Collaboration*.
33 Then Executive Director, Information Science and Information Studies, Duke University
34 Director, Design Institute, University of Minnesota
35 Researcher, CoLab and NECTAR, Faculty of Computer Science, Simon Fraser University
36 Visiting Assistant Professor, Digital Arts, School of Art, Bowling Green State University
37 Associate Professor, Psychology, Stark Campus, Kent State University
38 Chair and Associate Professor, Digital Arts, Bowling Green State University
39 Bell University Laboratories Professor of Human-Computer Interaction and Professor of Computer Science, University of Toronto, and Founder, Knowledge Media Design Institute

for Effective Collaboration Technologies through Advanced Research (NECTAR), presented a large suite of collaborative tools created for blended and distance learning and professional collaboration. The methods that scientists use to collaborate were discussed and then compared to the ways that artists collaborate, with the goal of finding shared approaches.[40]

A panel that followed provided opportunities for artist/scientist collaborators to present their approaches via case studies.[41] Cynthia Pannucci, founder and director of New York–based Art & Science Collaboration Inc. (ASCI), set the stage by explaining the ArtSci INDEX, an online tool that profiles artists and scientists who are interested in collaboration and provides case studies of collaborations; this was an early social media effort to facilitate matchmaking and new projects. ASCI holds regular conferences at which the resulting projects are exhibited and discussed. Following Pannucci's address, two enduring collaborations were presented. Alan Dunning[42] and Paul Woodrow[43] have worked together for over a decade on the *Einstein's Brain* project, in concert with neural scientist Morley Hollenberg.[44] This virtual- and augmented-reality project investigates its medium's potential as a filter, reflecting the "interior process that makes and sustains our body image and its relationship to a world." The second team was represented by computer scientist and statistician Mark H. Hansen,[45] who, together with composer Ben Rubin, has created compelling installations—such as *Listening Post*—that process Internet communication, text messages, and images. The summit also included dialogues with Roel Vertegaal[46] and Saul Greenberg,[47] which explored the underlying technologies that support collaborative production and work processes, from both an engineering and a HCI perspective.

Peter Visentin and Gongbing Shan, both from the University of Lethbridge, set up a motion-capture system in the BNMI dance studios, providing summit participants with the opportunity to understand how the system produces images. Their research makes use of motion capture to help musicians and dancers heal themselves after stress injuries and learn new forms of movement through feedback.

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40 Speakers included Dana Plautz (Manager, Research Communications, Intel Research) and Pierre Boulanger (Professor, Department of Computing Science, University of Alberta).

41 Chaired by Kris Cohen and Sara Diamond

42 Academic Head, Media Arts and Digital Technologies, Alberta College of Art + Design

43 Professor, Faculty of Fine Art, University of Calgary

44 See http://people.ucalgary.ca/~einbrain/new/main.html for details of this project.

45 Professor, Department of Statistics, UCLA

46 Professor, Human-Computer Interaction, and Director, Human Media Lab, Queen's University

47 Professor, Computer Science, University of Calgary

Brainstorming session for the Global Heart Rate Project. *Mobile Digital Commons Network* (*MDCN*) *Design & Engineering Workshop*, 2004. Courtesy of the BNMI.

Isabel Rocamora gave a compelling presentation of her anti-gravity choreography and her collaborative works with Sophy Griffiths, which explore the body in suspension as located in architectural and historical sites. Their works "use the hanging body and its 'subversion' of gravity as a metaphor for changing states of consciousness, paralleling the experience of weightlessness with freedom from the rational." Rocamora's practice, whether in filmed interpretations of her works or in their performance, required trust and thus provoked a discussion on risk-taking.[48]

There were reports from two highly collaborative projects with links to the BNMI. The CANARIE high-speed network had provided funding for educational research projects that tested and extended the capacities of the network. The Rural Advanced Community of Learners (RACOL) project, led by T. C. Montgomerie, was established to research the development and delivery of online curricula to rural and remote communities in northern Canada.[49] The project provided a dynamic

48 Other contributors to *The Beauty of Collaboration* were Michael Bussière (Sonic Design Interactive Inc.), Maja Kuzmanovic (Artistic Coordinator, FOAM), Nik Gaffney (Technology Coordinator, FOAM), Alok Nandi (Media Author and Artist), Ben Coode-Adams (Artefact), Kris Cohen (INCITE), Jeanne Randolph (Psychoanalyst), Hans Samuelson (Société des Arts Technologique), and Magdalena Wesolkowska (Lecturer and Researcher, University of Montréal).

49 Other participants included Cathy King (Regional Manager, RACOL Netera Alliance, University of Alberta) and Bev Hilihorst (Principal, RACOL Project, Lead Fort Vermillion School District Project, University of Alberta).

learning environment, using Sony's VPL multipoint video technology to provide a sense of presence for learners in geographically separated and isolated classrooms who felt alienated from the teacher and from other students they could not see. The Banff New Media Institute and the Aboriginal Arts program developed Aboriginal content and held real-time events with Aboriginal communities in the North. The BNMI created a series of Internet science and mathematics games for use in Internet-based grade 10 and 12 classes. These were delivered over the Internet in rural Alberta. The intention of the Advanced Broadband Enabled Learning (ABEL) project, led by Janet Murphy, was to research online educational collaboration.[50] Secondary-school teachers across Canada developed the curriculum together, using broadband video. The BNMI contributed design expertise and facilitated the fine-arts curriculum, including online gallery critiques.

A large part of this chapter is from the summit *Participate/Collaborate: Reciprocity, Design and Social Networks* (2004), which was a cumulative event that completed the BNMI's creation and maintenance of the New Media Collaboration Studies Network (NMCSN),[51] funded by SSHRC. This project was intended to pull together researchers in the field of collaboration from around the world. The NMCSN served as a platform for discussion, reflection, and exchange about various concepts and methods of interdisciplinary collaboration between art-based and science-based disciplines, and became the platform for the initiation of spin-off collaborative projects. Collaboration itself had become not only a methodology and strategy of interdisciplinary research, but also an object and subject of study. As members of the interdisciplinary group were drawn from various geographic and work milieux (independent, industry, private and public institutions, academia, etc.) and had different practices and knowledge, one main concern emerged as pressing: the use and (re)design of new technologies to address the complex issues of how to enable and enhance collaborative activities, which are altering the way that work and research are conducted and the way that collaborative knowledge is generated. Other than studying collaboration, the network sought to understand how networks, technologies, and the use of various online tools and environments affect collaboration. It also compared face-to-face collaboration with technologically mediated contexts and networks, endeavoured to determine the ways in which collaborative environments could become enabling tools for other disciplines, and designed an online environment for the NMCSN.

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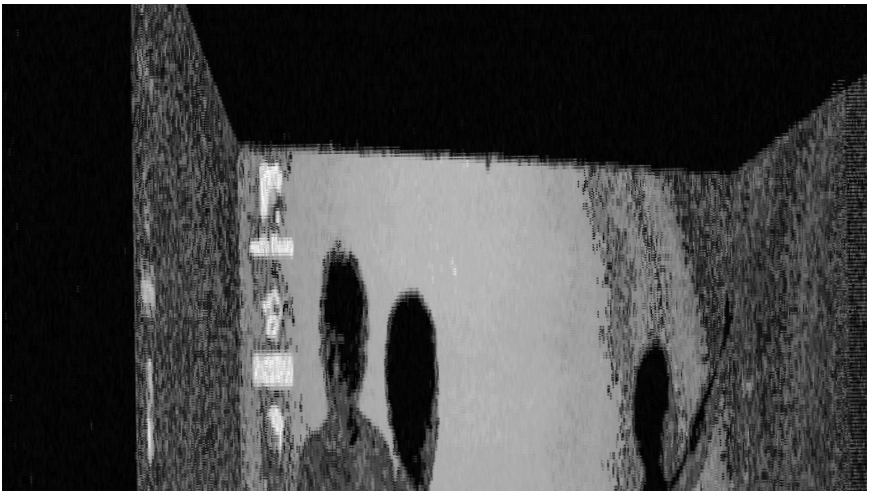
50 Collaborators in ABEL project included Karen Andrews (District Technology Coordinator, Edmonton Public Schools, TeleLearning Centre @ J. Percy Page) and Sharon Friesen (Co-Founder, Galileo Educational Network of Alberta).

51 Sara Diamond was the principle investigator for the NMCSN and was assisted by Magdalena Wesolkowska.



Opening of The Banff Centre's Advanced Technology Research (A.R.T.) Visualization Lab, Virtual Reality CAVE, Graphics Lab, and Collaboration Lab. Banff, 2003. Courtesy of The Banff Centre.

The network used qualitative assessment, reflexive analysis, and action-research case studies. It researched in proximity to NECTAR, the National Science and Engineering Research Council (NSERC)–funded collaborative tool-development network; for this reason, researchers from both networks converged on Banff for the event.[52] The summit was organized according to panels led by its four working groups. These panels were: "Collaboration as Process," "Collaborative Tool Evaluation," "Collaborative Tool Design," and "Collaboration as Cultural Process." Times were also set aside for the working groups to meet face-to-face to undertake research planning. The summit made use of a variety of tools in its delivery—from the AccessGrid multipoint videoconferencing tool to consumer-grade VOIP technologies like iChat. These tools made it possible to connect participants to the conference, such as Nigel Gilbert in the United Kingdom and Sha Xin Wei in the United States.

Prior to arriving at *Participate/Collaborate*, international participants had joined in an online file-sharing and chat tool, where 48-hour time-limited discussions had taken place. At the beginning of the summit, researchers discussed the differences between collaboration and sociality. This discussion considered the

52 Lyn Bartram played a major role in leading the conference and was active in both networks.

epistemic roots of collaboration and the negative connotations of the word in relation to World War II. Useful taxonomies were mooted and analyses of the characteristics of different collaborative tools—from blogs to whiteboards—were discussed, in presentations by Kim Sawchuk, Lyn Bartram, and Sha Xin Wei (excerpts of which are included in this chapter). Metrics for analyzing tools and ways of evaluating collaboration and usability were considered by participants, including Nigel Gilbert, Lyn Bartram, Brian Fisher, and NMCSM coordinator and tool designer Karen Parker. There were assessments of collaborative networks (such as the grid-computing project WestGrid,[53] the Mobile Digital Commons Network, and Netera[54]) as well as assessments of physical infrastructure created for collaboration (such as le Société des Arts Technologiques in Montreal[55]) with commentary by Ron Wakkary.

There was an effort to mix and match experiences, as researchers David Geelan[56] and Diana Domingues[57] compared arts and educational infrastructure for collaboration, with comments from Tom Choi,[58] Nina Czegledy, and Sarah Cook. An extensive discussion of the impact of mobile technologies on casual and formal collaboration included comparisons of the United Kingdom, Finland, Canada, and Japan.[59] Another panel evaluated the role of play and pleasure within the collaborative process.[60] The turn toward both a collaborative culture and open-source approaches provided ample fodder for dialogue. A striking presentation by Brazilian researcher Hernani Dimantas described a large-scale initiative to provide media and text literacy training using open-source software and recycled computers in Brazilian favelas.[61] An analysis of

53 The panel included Brian Corrie (Collaboration and Visualization Coordinator, Department of Physics, West Grid/Simon Fraser University), Pierre Boulanger, Maria Lantin, Lyn Bartram, and Sara Diamond.

54 Cathy King, Director of Member Services, Netera Alliance (Edmonton)

55 René Barsalo, Director, Development and Strategies

56 Assistant Professor, Department of Secondary Education, University of Alberta

57 Professor and Coordinator, Universidade de Caxias do Sul

58 Manager, Digital Initiatives, Science Alberta Foundation

59 This panel included Michael Longford, Sara Diamond on behalf of Minna Tarkka, Drew Hemment (Director, Futuresonic, University of Salford), and Jürgen Scheible (Project Coordinator and Doctoral Student, Media Lab/Mobile Hub, University of Art and Design Helsinki), with comments from Sandra Buckley (Adjunct Professor, McGill University).

60 The panel included Jeff Mann (Artist, the Netherlands), Michelle Teran (Media Artist, the Netherlands), Robert F. Nideffer, Beryl Graham (then Senior Research Fellow, New Media Art, University of Sunderland), and Magdalena Wesolkowska.

61 Dimantas is allied with Pontificia Universidade Catolica. The session facilitator (with presentation) was Susan Kennard. Presenters included Ken Jordan (Editor, *PlaNetwork Journal*) and Jon Husband (Founder, Wirearchy).

Dr. Maria Lantin, Jeroen Keijer, Anita Johnston, and Di Mainstone during the Am-I-Able Project, A.R.T. Lab, 2004. Courtesy BNMI.

participatory design methods[62] as well as the value of sonification and visualization in building tools for collaboration rounded out the considerations of tools. An open-ended session led by Beryl Graham, which is excerpted in this chapter, considered "Time, Scale and Space Factors: Characteristics and Taxonomies Affecting Collaboration."

It is valuable to remember that these summits occurred at Banff in the context of the labs and technology resources available to the BNMI. The Banff New Media Institute was a robust site of production, with the co-production program evolving into BNMI–hosted residencies over time. Research and artistic production occurred alongside co-productions carried out by small and midsized commercial companies. In addition, the BNMI hosted a myriad of programs designed to support business development and commercial, market-oriented production, as well as the *Interactive Project Laboratory* (*IPL*), a national network with the Canadian Film Centre and l'INIS, described in Chapter 6 ("Money & Law"). Much of this is taken up in Susan Kennard's afterword to this book, which describes how context shaped activity at Banff after 2005.

62 The panel consisted of Paul Bason (Development Producer, Culture Online), Vera Roberts, Kathryn Saunders, and Stephen Marsh.

The BNMI initiated and participated in important production-driven networks, which allowed large projects to emerge over time and were able to seek substantive resources. Before the inception of the BNMI, Media Arts created *Nomad Net* in 1993 to support artists' work on the Internet, and Banff was part of a casual national alliance of art and technology centres until 1995. The BNMI engagement with WestGrid, a high-performance research network, provided excellent contacts with computer scientists as well as engagement on the WestGrid Collaboration and Visualization Research Committee, reinforcing on-campus activities. WestGrid provided partial resource for the A.R.T. Labs. The BNMI was part of ENCART, the European Network for CyberART, which was affectionately nicknamed "BENCART" to recognize Banff's contribution. Artists' projects were co-produced between European centres and Banff. The BNMI helped to initiate and lead two significant networks with considerable research outputs: the Mobile Digital Commons Network (MDCN) and Am-I-Able (wearable and portable intelligent technologies).

As will be clear from the transcripts included in this chapter, the BNMI always sought out new possibilities for and models of networked production, as well as new support systems for artists, researchers, and companies. What the dialogues here show is that these models, while not perfect, worked well when they were iterative, adaptive, nomadic, or networked.

Notes on the Nature of Collaboration and Networks

ERIC KLUITENBERG

In many accounts of the nature of networked collaboration, the implicit requirement of free exchange is too easily equated with altruistic behaviour and all its attendant ambiguous connotations. Collaboration is a good thing, yet it cannot be realized without the willingness of all parties involved to share something of value. This is a mode of operation that rational economic activity tends to shy away from, or to enshrine into formal agreements on what is exchanged, in exchange for what. In traditional economies, such processes of exchange are preferably organized through a monetary system of some sort, rather than in one or the other modality of a barter exchange. In the context of the new forms of social organization that emerge around network technologies, things get even more complicated. On one hand, the transnational scale of social linkage makes traditional ways of building trust and responsibility largely inapplicable as a basis for collaboration and free exchange; on the other, the monetary model tends to discourage the most evident benefits of the new networked media: its capacity to engender spontaneous or serendipitous forms of collaboration between people, initiatives, and organizations that did not know each other previously.

The "problem" at hand is (once again) a classic example of Marcel Duchamp's magical formula "there is no solution, because there is no problem."[63] Against the recurrent

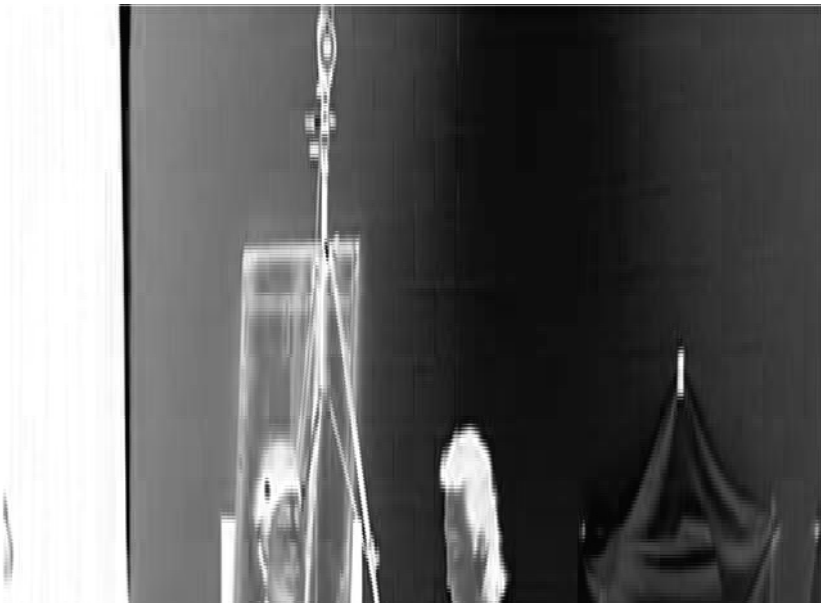
63 Often paraphrased, the comment is from a feature on Duchamp which appeared in *Life* magazine: Winthrop Sargeant, "Dada's Daddy, A new tribute is paid to Duchamp, pioneer of nonsense and nihilism," *Life*, 32, no. 17 (1952): 3.

emphasis on the altruistic impulse behind collaboration and free exchange, I would like to present a series of arguments that position collaboration as a clearly "rational" practice—specifically and especially in economic terms. Rather than locating the incentive for collaboration and exchange in altruistic "do good and feel good" sensations, I would place it in the involved parties' mutual recognition of shared self-interest, and a general self-awareness of their inability to solve certain problems alone. Once such a rational basis for collaboration and (free) exchange is established, most of the complications mentioned above tend to dissolve. This by no means makes the nature of collaboration and networking unproblematic. However, it is important to avoid approaching questions of collaboration, free exchange, and networking—and their tremendous rewards and infuriating difficulties—from the wrong premise.

The Banff New Media Institute has made a number of courageous attempts to delve into the dynamics and characteristics of collaboration and (digital) networking in order to find answers to the question of how to make it work. It has also investigated the even more vexing question of how to stimulate collaboration in a technologically networked social context, between disciplines that traditionally feel they have little to say to each other, let alone share—most notably, art and science. Bridging the "two cultures" (as so named by C. P. Snow)[64] traditionally makes for great PR spin and window-dressing operations. However, if one intends to make the collaboration productive and meaningful while still taking both domains of the production of knowledge and experience seriously, you are in for a heady ride.…

The Banff Centre seems ideally placed to let the fresh, clean mountain air and the impressive mountainous sceneries brighten up the troubled spirits of those professionals who wish to take this question seriously. Literally elevated above the dreary concerns of daily life, such gatherings as *Participate/Collaborate: Reciprocity, Design and Social Network* (2004) and *The Beauty of Collaboration: Methods, Manners and Aesthetics* (2003) investigated the social, legal, economic, and aesthetic dimensions of collaboration in a technologically networked social context. The proceedings and results of these events can still be heard and read via the centre's online archive. Here, I would like to review some of the most crucial conceptual and practical questions and the problems related to the nature of networked collaboration, in order to show how a rational understanding of the underlying principles of sharing and free exchange can aid in evaluating the social dynamics involved in these processes.

64 C. P. Snow, *The Two Cultures* (Cambridge: Cambridge University Press, 1960).



Peter Visentin and University of Lethbridge Associate Professor Gongbing Shan demonstrate motion capture. *The Beauty of Collaboration: Methods, Manners and Aesthetics*, 2003. Courtesy of The Banff Centre.

COLLABORATION AND THE NETWORKED FORM OF SOCIAL ORGANIZATION

Collaboration is a more or less "natural" property of networked forms of social organization. The remarkable development of networked multimedia technologies into what sociologist Manuel Castells has termed an "integrated multimedia system"[65] has, in recent years, provided a strong impetus to develop networked forms of social organization, even though these social forms are essentially "extra-technological." The concept of (social) networks is extremely multifaceted and ambiguous, and in itself currently the topic of heated and fascinating debate. However, a pragmatic way of understanding this social form is to regard networks as partly formal and partly informal arrangements that consist of actors who work, exchange, and fight out conflicts among one other, and are usually organized around a shared interest, issue, or practice. Networks can be localized and can be established within a certain professional elite—but, more often than not, they are trans-local and operate across traditional

65 Manuel Castells, *The Rise of the Network Society (The Information Age: Economy, Society and Culture, Volume 1)* (Malden. MA: Blackwell Publishers, 1996), 397.

professional boundaries. What digital networking technology introduces to the networked form of social organization is (electronic) speed and accessibility within the digital network. As a result, the question of access to digital networks becomes increasingly important, while the geophysical location of actors becomes relatively less important.

All these factors play an important role in shaping the dynamics of electronically networked forms of collaboration, including the formality and informality of relations, issue-based versus disciplinary ties, the social stratification of network access, located versus non-located, and the introduction of electronic speed in a highly diversified social form. Castells characterizes the combination of social networks with electronic digital networking technology as the basis for a fundamental social transformation of technologically advanced societies. In the conclusion of his now-famous 1996 book *The Rise of the Network Society*, he summarizes this transformation as follows:

> As a historical trend, dominant functions and processes in the information age are increasingly organized around networks. Networks constitute the new social morphology of our societies, and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture. While the networking form of social organization has existed in other times and spaces, the new information technology paradigm provides the material basis for its pervasive expansion throughout the entire social structure.[66]

It is the pervasiveness of networking technology "throughout the entire social structure" that legitimates us (for the time being) to restrict our attention to these electronically enabled or supported forms of networked collaboration and exchange, in order to point out their social dynamics and their aesthetic qualities. Indeed, networking—especially electronic networking—is inconceivable without sophisticated forms of collaboration, if only because the network is constituted by the practices of the actors involved in it, and their practices are, necessarily, communication and exchange. Thus collaboration could be considered the emergent property of the networked form of social organization.

COLLABORATION AS A DESIGN PROBLEM

With the rise of the Internet as a public medium, a series of absolutely remarkable forms of networked collaboration have established themselves: newsgroups and mailing lists, online multi-user worlds, the free software movement, and a large variety of community and special-interest networks. Some of those golden

66 Ibid., 469.

questions—especially in the age of dot-com mania (in the digital prehistory of the late '90s) have been: "How are those spaces of collaboration designed?" "What makes them work?" and, of course, "How can we replicate and reproduce them?" Interestingly, most attempts at replicating such collaboratively built structures have been astonishingly unsuccessful. This has certainly not been a technological issue, however. While the nth remake of the 3D online multi-user world—with even more advanced visual and interactive capabilities—went down, SMS messaging, notification networks, dating services, hipster invite-only networks, police-bashing networks,[67] underground artist gatherings, and much more, became immense successes, building on a technologically desperately retrograde medium. Why?

It's difficult to tell. The incorporation of SMS into the corporate mould already looks like a short-lived success. The commercial (re-)appropriation of SMS heralds the demise of SMS as a socially vibrant media space, it seems. The vanguard is already looking for a new niche, unfettered by the mainstream and overpriced transaction costs (let's not forget that SMS was once introduced as a free add-on service for the mobile phone). What's more, virtually all of the examples given above—highly successful collaborative electronically networked social formations—were, by and large, undesigned (save a very basic message-carrying technological infrastructure). Quite often, these collaborative spaces came into being as wholly unintended side products, next to or even in contradiction with the original purposes of the technological structures involved. What this hints at is that the incentives for the creation of such collaborative structures are largely extra-technological, despite the fact that their manifestation takes shape within a decidedly technological landscape. It really begs the question: in what media space will something similar start to happen next? Skype?

CONDITIONS OF COLLABORATION

Successful collaboration is usually grounded in actual need and in an inability to resolve the problems at hand alone. Unless part of some truly perverse scheme, this can hardly be regarded a "design parameter." It is in this most basic condition that the problems start for a utility-driven design. In exceptional circumstances, people might collaborate in creating something that they do not actually need,

67 In Amsterdam, Moroccan youths have successfully used closed SMS networks to organize resistance against police harassment.

but most collaboration emerges out of necessity rather than choice or play. Still, not every attempt at collaboration out of real need is equally successful, and thus it must be possible to distinguish particular conditions that are more conducive to successful collaboration.

Here, some of the more ephemeral qualities of collaboration come to bear. As in many other processes of exchange (including monetary), it is clear that trust plays a crucial role in successful collaboration. Trust can be facilitated by a series of attitudes and patterns of behaviour that are often characterised as "altruistic," such as generosity, hospitality, mutual respect, or even friendship. It is also easy to imagine how these patterns of behaviour can facilitate successful cooperation.

However, progress in resolving complex problems is not always achieved by means of agreement and consensus. In fact, the availability of different kinds of skill sets and different types of knowledge across and between different actors working together may be a crucial factor leading to success in collaboration. In such cases, misunderstanding and disagreement are almost necessarily built into the process from its inception. If people are passionate about the things they are collaborating on, discussions tend to become heated quite easily. Yet differentiation of skills and knowledge and a strong investment in the problem at hand seem necessary to reach a solution that one cannot bring about by oneself. Agreement and trust alone can therefore not be considered sufficient conditions for making collaboration productive. Unless one of the parties involved is prepared to enter into a purely (self-)exploitive relationship, motives that are not purely altruistic must be involved in collaborative exchange.

COLLABORATION AND COOKING-POT MARKETS (GIVING IS NOT ALTRUISTIC!)

One of the main reasons behind the bursting of the dot-com bubble in the late '90s was the absence of a comprehensive monetary exchange mechanism for validating online transactions. Still, the early phase of the public Internet was characterized by explosive value creation by its users. Since much of this value creation happened outside of any monetary system of costs, benefits, and rewards, these systems of value creation and exchange were quickly described as "gift economies." In this early phase of Internet development, revenues were mainly made via facilitatory (infrastructure and access) and secondary derivative services.

The emphasis on "gift" as concept to describe non-monetary value transactions may have given the wrong idea about these processes of exchange. Even if monetary validation mechanisms are absent, the actors engaged in these exchange processes make clear, rational cost-benefit judgements. Economist Rishab Aiyer Ghosh has written one of the most illuminating analyses to date of the rational basis underlying free-exchange processes and gift economies on the Internet. In his essay "Cooking-Pot Markets: An Economic Model for the Trade in Free Goods and Services on the Internet," he uses the analogy of a cooking pot, where different ingredients must be brought together to create a tasty dish.[68] In a cooking pot, however, the value of what comes out is roughly average to what went in (everyone contributes a certain ingredient); on the net, the output is theoretically infinite, since the marginal costs of creating extra copies are near zero. The effort lies in the creation of the first copy. By sharing this first copy, every actor gets access to a much larger number of other originals, practically for free. Ghosh summarizes this principle as follows:

> The Internet cooking-pots … take in whatever is produced, and give out their entire contents to whoever wants to consume. The digital cooking-pot is obviously a vast cloning machine, dishing out not single morsels but clones of the entire pot. But seen one at a time, every potful of clones is valuable to the consumer as the original products that went in. The key here is the value placed on diversity, so that multiple copies of a single product add little value—marginal utility is near zero—but single copies of multiple products are, to a single user, of immense value. If a sufficient number of people put in free goods, the cooking pot clones them for everyone, so that everyone gets far more value than was put in.[69]

In the case of open-source software development (probably the most remarkable social experiment in collaborative digital networking thus far), the actors involved not only get access to a whole series of finished products, they can also access the very building blocks of those products and put them to their own use. This principle has created an extraordinarily productive form of intellectual collaboration and exchange—one that urgently needs to be extended into other fields of knowledge production.

The prerequisite for any cooking-pot market on the Internet to keep on working is that different actors continue to contribute new ingredients and recipes to

68 Rishab Aiyer Ghosh, "Cooking Pot Markets: An Economic Model for the Trade in Free Goods and Services on the Internet," *""First Monday* 3, 3 (1998), http://www.firstmonday.org/issues/issue3_3/ghosh/.

69 Ibid.

the pot. If no one puts in, the pot dries up and will eventually be abandoned. Secondly, at some point, the benefits reaped online and the digital products and tools acquired must be translated into tangible results or monetary rewards. Even the most isolated digital hermits need to eat, drink, and put a roof over their heads. Moreover, they need electricity, a machine to work on, and a reliable network connection! This translation can happen via derivative services offered on the basis of the obtained tools and products. Backup from a cultural or academic institution is another form of translation, and redistribution of open-source products is a third. Regardless, every collaborative network at some point needs to interface with the world around it if it wants to stay alive. Still, networks can be tools of agency in dealing with real-world contexts that are often not primarily benign.

A cheerfully subversive initiative in this regard was the proposal for the Interfund network that was drafted at *XCHANGE UNLIMITED* festival in Riga, Latvia, in 1998.[70] The proposal carried the slogan "Create Your Own Solutions!" Interfund was intended as a self-help initiative that would allow independent digital-art initiatives to share skills, knowledge, and facilities with other members. The condition for joining this collaborative structure was the willingness to share with other participants whatever could be of value to the other network members (except money). The curious circumstance was that the idea for the Interfund emerged after the XCHANGE artists' network for streaming media had received quite a large sum of prize money. The question was: Who is the network? How should it divide this money, or what should it do with it?

The Interfund proposal was to create a self-help micro-funding scheme: Every Interfund member could apply to the fund and be sure to get approval (basic rate: US$1 per application/project). To further enhance the self-help character of the fund, it was decided that the letterhead and a template acceptance letter would be made available for members to download, so that they could draft their own acceptance letters, thus reducing costs and administrative overhead to near zero. With this acceptance letter, the Interfund members were sure to have an answer to the standard question that funders ask non-established cultural initiatives: "Ah, interesting, who else is supporting you?" Upon which, the happy reply would be: "Well, here is the acceptance letter of the Interfund! The other applications are still in process…."

70 See http://asu.sil.at/interfund.html.

INTELLECTUAL COOPERATION (*WIKIPEDIA* VERSUS "THE ACADEMICS")

The desire to extend the free-software/open-source model to other domains of knowledge production and intellectual labour can be summarized as the move from open-source to open content. Much of this is highly problematic. First and foremost, the new regimes of intellectual property create tremendous problems. Beyond copyright, they now also threaten the livelihood of open-source software development by incarcerating innovative code in generic software patents. Even though the author may have long been declared dead by our great luminaries of critical thinking—Roland Barthes and Michel Foucault—everyone knows that intellectual work, intellectual production, and their markets are reputation economies, the art world being by far the worst case in point.

With the increasing dematerialization of artistic and academic practice, information and reputation is about all that is left to trade for in these domains of "immaterial labour." This reality certainly contributes to a reticence to embrace open content and free information exchange. Locking up knowledge, information, and data in fact increasingly becomes the core activity of the information economy, now the dominant sector of all developed and emerging economies around the planet. The problem of this commodified model of intellectual production is that it squanders the most important potentials of digital networking: making valuable knowledge widely and instantaneously available—especially in places where such knowledge can mean the difference between life and death—and accelerating the growth of knowledge through the exchange of information at electronic speed.

Even though the odds seem bitterly against it, initiatives such as *Wikipedia* and Usenet newsgroups and discussion forums—not to mention countless online public-information sources—do manage to realize something of the emancipatory promise of digital networking. Invariably, there has to be a trade-off between expert and layman knowledge and experience in these kinds of open collaborative environments, and they call forth their own highly idiosyncratic management problems.[71]

Impressive though the *Wikipedia* project, in particular, may be, it still begs the question of whether or not the concept of public access to shared resources of information and knowledge is the raison d'être of the academic community. After all, academic activity is 99 percent funded via public means and provides a

71 See *Wikipedia*'s "Village Pump" section: http://en.wikipedia.org/wiki/Wikipedia:Village_pump.

context for researchers in various domains to concentrate on their intellectual work relatively unfettered by basic material concerns. The costs and investments here, as in the Internet cooking-pot markets, involve the creation of original data and knowledge. The costs of the subsequent distribution and proliferation of results are negligible. The public-funding model should therefore not be discarded too easily as a basis for productive intellectual collaboration. The social benefits can be next to immeasurable, and these remain an important consideration in sustaining the effort. In fact, much of the work to be found on *Wikipedia* would be unthinkable had the academic structure not been present in the background in the first place.

OPTING OUT! FROM NETWORKING TO NOTWORKING

The idea of having to work together can be as frightening as the prospect of working alone. In his essay "The Principle of Notworking," media theorist Geert Lovink studies the "theory of free co-operation."[72] Drawing on the insights of the German media critic Christoph Spehr, he maintains that the threat of being locked in or forced to cooperate—or, more precisely, of being unable to withdraw from cooperation—can be as detrimental to finding independence as the coercion of systems of direct control, as in the Fordist factory model. According to Lovink, every form of networked collaboration should have a clear exit strategy for its participants if it is to further the goal of independence and freedom: "The option to bail out is the sovereign act of network users. Notworking is their a-priori, the very foundation all online activities are built upon. If you do not know how to log out, you're locked in."[73]

Lovink is developing this principle of "notworking" to establish a starting point from which to analyze those who refuse to collaborate, who tend to be on the outside. Much of the theory of networked collaboration has erroneously focused on the consensus model—especially the theory of virtual communities—and is thus unable to deal adequately with issues of conflict and subversion. However, as explained earlier, conflict is almost necessarily built into any form of collaboration that intends to bring about novel, innovative results—results that the individual participants could not have brought about by themselves.

Lovink observes that in mailing-list cultures, for instance, there is a high degree of flexibility and variability in the intensity of discussions and exchanges. Typically,

72 Geert Lovink, "The Principle of Notworking," in *Concepts in Critical Internet Culture* (Amsterdam: HvA Publicaties, 2005), http://www.hva.nl/lectoraten/ol09-050224-lovink.pdf.

73 Ibid., 12

lists are characterized by large numbers of non-active or non-contributing members ("lurkers") and long periods of dormancy followed by short bursts of intense activity, in which a substantial percentage of the lurkers can suddenly enter the debate. This flexibility actually plays an important role in ensuring the sustainability of the network, although this is not the only factor.

SABOTAGE! (VANDALISM AND TROLLS)

Practically any networked and reasonably open collaborative initiative will eventually have to deal with the issue of vandalism and sabotage. In the online world, this has become something of a subculture of its own, which started out with conflicts and "riots" in Usenet newsgroups and spread to other forms of online networking and collaboration. The subversive actor has even received its own name: the troll. The question of how to deal with trolls is something that most moderators of mailing lists, discussion forums, chat-boxes, newsgroups, and collaborative blogs have to learn to deal with. Extensive online manuals and FAQ documents on the subject can be found, as trolls pose a considerable challenge to the practice of free and open online collaboration.

The trolls themselves have even formed some communities of their own, in which competitions in sabotaging prominent online gathering sites are staged. Being blacklisted from a forum, newsgroup, or mailing list then becomes a status symbol, contributing to the actor's social status within the troll community. Copies of logs of blacklists are presented as proof of achievement. A blacklisted username is already something, but a blacklisted e-mail address or, better still, a blacklisted IP address in a notoriously open environment are considered among the highest degrees of honour and achievement in these communities. Lifelong fame is acquired by bringing down or completely destroying a forum by means of tactical intrusions.

Wikipedia has an extensive manual that reports on how to recognize, point out, and deal with cases of abuse and subversion of articles, testifying to the virulence of the issue. One of the most exhilarating examples from the media-art domain was probably the recurrent incursion of the integer/Netochka Nezvanova (NN) phenomenon into various media-culture mailing lists. A combination of artists, programmers, and text-bots, NN became a nuisance and a distinctive voice on various mailing lists, flooding these lists with excessive guerilla postings and causing heated debates about whether or not to "hit the moderator button" and put the lists under some form of basic editorial control. Some forums responded by developing their own protocols; others silently removed the "noise" from the list. The

most spectacular case was the *Syndicate* mailing list for media art and culture in Eastern Europe, which collapsed in the summer of 2001 without too much protest from its members, exposing the end of the initiative's lifecycle. *Syndicate* now lives on partly as an anarchistic free space for net.artists on a server in Norway, while the events of that summer spawned the creation of the currently still-active *Spectre* mailing list for media culture in "Deep Europe."

SUSTAINABILITY

These experiences call forth important questions about the sustainability of networked forms of collaboration and free exchange. Without a model of direct monetary exchange, such networks tend to operate in the public domain. Although the public domain is the domain of freedom per se, it is also a dangerous, unstable space, constantly subject to intrusion, appropriation, and the threat of dissolution. Legal protection models such as Creative Commons serve certain practical purposes, but they also contribute to the legal system exerting further control over free resources and activities. Lovink is working on a new theory of "organized networks," which seeks to address the issue of online networks' sustainability. He observes that there is a general unwillingness on the part of institutions to support or adopt networks, partly due to their lack of institutional definition and demarcation.

Yet even the most ephemeral network needs certain infrastructures to operate on, and expert services for keeping the network running are hard to maintain over time if everybody is working on a voluntary basis.

Networks are also hard to use as a mass political instrument. Their relative fluidity precludes a clear definition of identity; this also contributes to their relative invisibility to and within mass-media structures. As a result, networks can operate relatively free from the kind of political pressures that mainstream media sources have to work under, but they also have a much harder time enlisting broader political support. Although Castells's analysis of the emerging network society is now widely accepted in political circles, we still lack the institutional formations that could support and thus ensure long-term sustainability for the kind of networked collaborative structures discussed here. This question urgently needs to be addressed, however, in order to retain the innovative potential of the new electronically networked forms of collaboration and (free) exchange.

—Amsterdam, August 2005

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TRANSCRIPTS

This chapter begins with the holders of the metadata of new-media art—the museologists and media-art historians. The following transcripts are from the 1998 symposium Curating and Conserving New Media*, which comprised a three-day summit followed by a three-day workshop and was one of the first events to explicitly discuss sharing knowledge about how new-media art is produced and presented. We have selected extracts from the presentations—independent curator Nina Czegledy talking about international networks, artist Alexei Shulgin talking about net-art artist-led processes and histories, and museum curator Carl Goodman talking about the institution and collecting—and included them here with an extract from the introduction to the workshop by Su Ditta and some of the discussion from the Q&A period chaired by Sara Diamond.*[74] *These passages are followed by the Q&A that occurred after Michael Century's presentation on the history of collaboration between the National Research Council and the National Film Board, which asks how good collaborations can be sustained.*

SU DITTA

CURATING AND CONSERVING NEW MEDIA, 1998

Su Ditta / *Transcribed:* In full / *Talk:* Not noted / *Panel:* "Developing the Curatorial Proposal for New Media Works with Examples from Installation Exhibitions Individuals and the Web" / *Event: Curating and Conserving New Media* / *Date:* Monday, May 25, 1998, time not noted

Born in Toronto and educated at Trent University, Su Ditta has been working as a media-arts curator, critic, arts administrator, cultural-policy analyst, and arts-management consultant for many years. Previously the executive director of the *Canadian Images Film and Video Festival*, Ditta is probably best known for her work at the National Gallery of Canada, where she curated media-arts exhibitions and managed the media-arts collection, publications, and public programming from 1987 to 1990. She then served for four years as the head of the Media Arts Section of the Canada Council for the Arts in Ottawa, and was responsible for developing and delivering a $5 million program of support for the creation, production, distribution, and exhibition of video, audio, film, and computer-based new-media work by Canadian artists. Since then, Ditta has served on the boards of directors of a number of arts organizations and has acted as an advisor and consultant to a wide variety of arts organizations, cultural agencies, and commissions, including the Ontario Arts Council, the National Film Board of Canada, and The Banff Centre for the Arts. She lectures frequently at colleges and universities across Canada and organizes exhibitions and special projects at museums, artist-run centres, and public art galleries across Canada and in the US.

74 Ditta's report from the event is available on The Banff Centre's website.

Su Ditta: I'm going to start this morning by telling you a little about my own fortunate relationships to new media. I am really not a new-media kind of girl. I only learned to use the computer two years ago, here at Banff. My engagement with new media started as a political one. I was hired as the curator with the National Gallery of Canada and, at that time, the position was of a video curator. I thought that was problematic. I wanted to include new film and I wanted to include new media and, of course, the museum was somewhat resistant to that. Therefore I became a champion of new media. Similarly, at the Canada Council there was a small program I supported for new media, but it was fairly limited. When I went to the Canada Council as the head of the Media Arts division, there was no program of exhibition at all in media—not in film and not in video. That didn't mean exhibitions didn't happen, and it didn't mean that sometimes people couldn't get funding for it, but it was always through other routes. It's really only been in the last eight years, from my personal perspective, that new media has come on the terrain and it has been an area of really active engagement.

I'm nervous, because I know that the directors and most of the staff of half of the video organizations in Canada are here. This morning's panel is concentrating on the idea of curatorial proposals, but from talking to the panellists, what we are going to have is an opportunity to look at the shifts in how curatorial work is taking place and has taken place over the last few years, as new media has become a more critical area. Some of the people will be speaking about the international context, some about the Canadian context.

I'm going to open up by sketching what for me—both as an institutional curator and now as an independent curator—has been some of the basics of putting curatorial proposals together. I know that everybody on the panel is going to challenge that and show how that paradigm either doesn't work or is often completely different for new media. There are different kinds of proposals that I work on. One is putting together the curatorial proposal. That's principally writing grant applications in order to get funding, whether you are applying to a foundation, a corporation, or a public funding agency. The second one is when you are pitching an exhibition, either within an institution or as an independent curator to an institution. The third one is with the inter-/non-institutional environment and placing the artist at the centre, or when you are developing a curatorial proposal that's going to be exercised with a collective of people. In each of those cases, you have different barriers and different things that drive you, and you are imagining different people reviewing the proposal. You will be putting more emphasis on one thing or another. I write very differently when I'm writing for my peers in a jury situation than when I'm writing to the director of a museum.