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THE BANFF NEW MEDIA INSTITUTE DIALOGUES

EUPHORIA & DYSTOPIA

EDITED BY SARAH COOK & SARA DIAMOND

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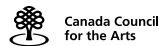
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THE BANFF NEW MEDIA INSTITUTE DIALOGUES

EUPHORIA
& DYSTOPIA

EDITED BY SARAH COOK & SARA DIAMOND

BANFF CENTRE PRESS · RIVERSIDE ARCHITECTURAL PRESS

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Foreword

KELLOGG BOOTH & SIDNEY FELS

The Banff New Media Institute (BNMI) at The Banff Centre was a uniquely Canadian response to the emergence of digital media as a cultural force in the years leading up to the 21st century. It is hard to ignore the irony of a physical location unequalled in its natural beauty serving as the nexus for critical discussions and explorations of a digital revolution that seemed poised to replace physical art with purely synthetic assemblies of information. This seeming incongruity puts in sharp focus the dichotomy between “atoms” and “bits” that Nicholas Negroponte first identified in his book *Being Digital* (1995). The BNMI summits were high points in an international discussion that re-examined the relationship between art and technology. Each summit brought together highly cross-disciplinary teams of like-minded individuals in order to explore different aspects of what it meant to “go digital” by moving from atoms to bits. *Euphoria & Dystopia: The Banff New Media Institute Dialogues* chronicles what took place at these summits, as well as the exploratory activity that laid the groundwork for them and the ongoing programming that complemented them.

As organized by Sara Diamond and the team at the BNMI, the summits provided forums for “design thinking” about the digital world, much in the spirit of Herbert Simon’s *The Sciences of the Artificial* (1969). More importantly, perhaps, they allowed

innovative researchers and practitioners from many different fields—individuals who were at the forefront of experimenting with the new possibilities afforded by digital media—to meet. We were privileged to attend a few of the summits, where we experienced firsthand the energy and the synergy they generated. We came away with a new appreciation for the serendipitous juxtaposition of artists, technologists, and critical thinkers that was characteristic of these gatherings. In no small part, these events and the partnerships they fostered provided a model that the Graphics, Animation and New Media Network of Centres of Excellence (GRAND) have been able to build upon. When the Canadian federal government announced a competition to establish new networks in 2008, it included graphics, animation, and new media in the list of target areas. Lessons learned at the BNMI summits were transformed into a plan of action that was successful in bringing together top researchers from across Canada in science, engineering, social sciences, humanities, art, and design. Indeed, many of the individuals who were key to the formation of GRAND had been involved in the Banff New Media Institute and its many programs. The legacy of the BNMI—and especially its summits—is a strong Canadian presence in digital media; Canada continues to play a defining role on the international stage. This book celebrates the pioneering efforts that got us here.

But what was the experience like? Many of us were invited to a BNMI summit—the dialogues of which are reflected on in this ambitious book—because we were recognized for our activities in dealing with new media within our varied self-identified identities: artist, scientist, musician, doctor, or engineer. Yet, being thrown together high in the mountains, far away from anything familiar, with people we didn't know or understand, we each began our introductions with “I don't know why I'm here.” This book helps to explain why we were there. Each morning at the summits, Sara Diamond brought together key themes that came out of the previous day and night's seemingly chaotic conversations; it is the same for this book, which slices through our conversations during those formative years. The transcripts contained in this volume illuminate the complexities that continue to face our world as a consequence of the emerging social, cultural, and economic pressures that endlessly build up from the impact of accelerating technological advances in media production and dissemination.

The challenge of defining the field remains—whether it still is (or ever was) “new” media, whether it is now “old” media, and whether this distinction is even important. The conversations that we started during BNMI summits have continued to this day, suggesting that the term “new media” is most effective as a metaphor.

As a metaphor, it doesn't belong to anyone, but it binds together the questions covered here: What is data? What is and isn't a machine? What is art and what is identity today?

New media is not like a wave; rather, it is like an organic entity that branches out, as evidenced by the seemingly unpredictable forms of digital technology that are both connecting and isolating large numbers of human beings across the globe. The BNMI's summits forced us, albeit quite willingly, to take home with us ongoing questions about our own work as well as new thoughts about new media.

The wide range of ideas included in this book mirrors the awe-inspiring "third place" of the BNMI—its way of structuring dialogue, and the way in which the summits sought to maximize tension, sometimes to create confusion, but mostly to break down barriers with an exhausting, exhilarating pace, forcing us to brave the altitude and attitudes we found around us.

That is why we were there, and that is why you are here.

Kellogg Booth is the Scientific Director of GRAND, the Graphics, Animation and New Media Network of Centres of Excellence. See also page 227.

Sidney Fels is a Professor of Computer Science at the University of British Columbia. See also page 191.

Preface and Acknowledgments

First of all, we must thank The Banff Centre, for creating the conditions and opportunity to establish the Banff New Media Institute. We thank former president Mary Hofstetter for her commitment to the BNMI, and vice-president Sarah A.J. Iley for her support for the completion of the book project. And of most importance: we thank the contributors whose voices are transcribed and printed here for their contributions to this book and to making the BNMI's history worthy of representation.

This book would not have been possible without the long-term dedication and hard work of a number of people both within and outside of The Banff Centre. The process of developing a structure for a book that considers a decade of practice in new-media research was begun with Sara Diamond's suggestion and an initial application to the Canada Council drafted together with Sarah Cook, who was then working as a postdoctoral research fellow between The Banff Centre and the University of Sunderland in the UK. Our thanks go to the Media Arts Section, to Youssef El Jai, current head of the Canada Council, and to John Hobday, its former director and CEO, for their original and enduring support of the project.

Cindy Schatkoski, the BNMI's program manager, and Susan Kennard, its former executive producer, were key in realizing a number of BNMI 10th-anniversary projects in 2005, such as the creation of an archive and a commemorative *Interactive Screen* summit—as well as the creation of this book. Luke Azevedo (former director, Creative Electronic Environments) provided critical technical support. The BNMI hired and managed dedicated staff—from Geoff Lillemon, who designed images used on BNMI marketing material, to Lorna Marr, the 10th-anniversary work-study archivist, who had the sometimes thankless task of sorting out the BNMI's paper

archive and creating finding aids for very personal filing systems. The archive that Lorna Marr created at The Banff Centre remains accessible to scholars. Funding for these 10th-anniversary projects, including this book, was also secured from Telefilm Canada during Wayne Clarkson's tenure as executive director.

As the book took shape, the BNMI hired Katja Canini as a “special projects work-study” and during her short year at Banff she proved crucial to both this book and the exhibition *The Art Formerly Known As New Media*. She liaised brilliantly with all the other collaborators, sorting the audio for the editors to listen to (and DJ'ing the tapes in the mornings over Radio90), contracting and hiring transcriptionists to complete the many transcriptions, optical character recognition (OCR)-ing reports, negotiating agreements with the contributors, contacting the speakers whose words we've reproduced, finding and digitizing images, arranging for photographic documentation, and rolling her sleeves up to assist in all aspects of the *Art Formerly Known As New Media* exhibition, including chalking up the *irational.org* timeline. It was a pleasure to work with Katja Canini and had it not been for her clear filing systems, we might have fallen at the final hurdles. We are tremendously grateful to her.

Behind the scenes—but just as crucial to the process—Iwona Erskine-Kellie (technology and administrative work-study) worked to digitize the audio along with Danielle French (technology and administrative work-study), who also created the colourful spreadsheets representing the digital records of each event that the editors used in the making of the book; Sarah Lasch (technology and administrative work-study) digitized the audio and shepherded copies between the BNMI and the audio department; Slavica Ceperkovic (co-production coordinator) helped to sort out the co-production history and cheered us on; and Sherry L. Moir and Amy Inkster (manager of the BNMI *Accelerator* program and *Accelerator Work-Study*) compiled the *Accelerator* events list. There were other members of staff at The Banff Centre and the BNMI who assisted in this important first phase, and we thank them.

After Katja's departure to the National Gallery of Canada, Stephanie Toffolo began as a BNMI work-study and continued to transcribe the audio files we needed. The Banff Centre's Marketing and Communications Department—which included Director of Communications Debra Hornsby and Web Specialists Sheri MacFarlane, Stephen Nelson, and Jim Swanson—and Leslie Creery, a web-server administrator with the Information Technologies and Services Department, worked with the BNMI to upload files to the Internet. More recently,

this important archival work has been restored by Kerry Stauffer (first director of Creative Electronic Environment and later executive director of the Film and Media Department) and Jean McPherson (program manager of Film and Media), with the help of Kenny Lozowski.

For those curious about the process, the six key themes that appear in the book were conceived by Sara Diamond. Sarah Cook sat down in Sara Diamond's office at The Banff Centre, and together they went through hard copies of the summits' agendas, prompting Sara's memory and jointly working out how to create a wide-ranging representation of ideas, research, speakers, and styles of presentation, and how to highlight especially challenging presentations. The editors listened to audio, checked archival material in relation to the content, and edited the transcriptions. Sara, Sarah and Susan Kennard decided on guest essayists together, and invited and commissioned these essays in 2004 and 2005, while the task of editing the chapters was divided between Sara and Sarah. Susan contributed her memories and analysis to the back matter through an edited interview. Once the chapters' contents were confirmed, Sarah worked on the front and back matter and the exhibition catalogue, while Sara spent considerable late nights excavating details from The Banff Centre, her personal archives, and her memory, in order to craft the chapter introductions. The editors shared drafts of files using a wiki. What has resulted has been a joint editorial effort, with long weekends and summer days spent working side by side in front and back gardens and dining rooms in Toronto, Newcastle, and Banff (and individually on planes and trains and in cottages, hotel rooms, and bed and breakfasts from Oslo to Seahouses to Buenos Aires and elsewhere besides).

The book contains the catalogue for the 2005 exhibition *The Art Formerly Known as New Media*, which was co-curated by Sarah Cook and Steve Dietz, who was then a curatorial fellow with the Walter Phillips Gallery. Sincere thanks are to Steve for an enjoyable curatorial research process undertaken in Banff, Berlin, Liverpool, Newcastle, and many other locations, with lots of lists and many glasses of whisky. Thanks are also offered to the Walter Phillips Gallery staff, including Anthony Kiendl (then director), Sylvie Gilbert (then curator), Charlene McNichol (then curatorial assistant), Mimmo Maiolo (preparator), and Ed Chan (then program assistant), and to those who provided technical support, including Michael Pelletier (then manager of Interactive Media, Creative Electronic Environments), Dave Kretz (then lead programmer, Creative Electronic Environments), and Marc Bernier (then computer technician). Most importantly, we thank the artists for

participating in the exhibition and waiting so long for this catalogue! The initial design identity for the exhibition—and, initially, for this book—was by Janine VanGool of Uppercase in Calgary. Photography for the exhibition was by Don Lee. Credits for the front cover visualization appear in the book's front pages, as do the credits for the project *HorizonZero*, the DVD of which accompanies this volume. The majority of photographs included in this book derive from The Banff Centre and BNMI, all others are credited with the image.

Our current employers have been very generous in their support, both financially and in kind. Sarah Cook thanks Professor Beryl Graham and CRUMB at the University of Sunderland, who have made time and space in her work commitments to see this project through to completion. Funding from the UK Arts and Humanities Research Council have supported Sarah's research time, as well as allowed for additional support in terms of editing, transcribing, and proofreading by Andrea Toth. Late-arriving and generous funding from the University of Sunderland's research monies will ensure this book is launched into the world, and has an online presence in years to come. Sara Diamond thanks OCAD University and research assistant Lauren Wetmore, who, for the last year of the project, has been our proofreader and consistency checker, in Canada and in the UK, providing invaluable back-up and time commitment to supplement the editors' often interrupted working methods. OCAD University has made a considerable financial contribution to the publication of the book. The editors thank the Canadian National Centre of Excellence GRAND for its support of the book's completion and launch in Canada.

The editors offer their sincere thanks to several members of the Banff Centre Press, including Steven Ross Smith (director of Literary Arts) and Sarah Bernath (former administrative assistant, Writing & Publishing), and, more recently, Naomi Johnston (operations director), Leanne Johnson (coordinator), and Manuela Buechting (work-study). They have liaised with the staff at The Banff Centre to ensure that this book is true to its history and credited to its contributors, working with Naomi Potter (former curator) at the Walter Phillips Gallery, Jane Parkinson in the Banff Centre Archives, and Ben Clayton (work-study) in the new Digital Media Research Department to get all the files in order as the book went to print. The editors also thank the unnamed technicians, who ensured those voices were caught on tape. Both the Banff Centre Press and the editors admit that this book would not have made it out of its cardboard box of files and our individual hard drives had we not had the unwavering financial, design, and publication support

of our co-publishers, Riverside Architectural Press at the University of Waterloo. Philip Beesley leads the press with designer and manager Hayley Isaacs and their contracted staff, including our diligent copy editor Claire Crighton.

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Personal thanks from the editors go to our original co-editor, Susan Kennard, for always being a sounding board and reminding us to tell the whole story of the important work Banff undertook with artists, and to Michelle Hirschhorn and John Hirschhorn Smith, for always cheering the project on, and even giving up their house and sharing their cat's love at key moments in the editing process. Sarah Cook thanks Andrea Toth for her supportive friendship and time, her family for putting up with her cutting precious visits to Canada short in order to be at Banff, and, most importantly, Andy Slater for understanding and accepting how and why The Banff Centre has been such a formative part of her life. Sara Diamond thanks Kellie Marlowe, who has tolerated hours of time spent facing a computer screen, has long supported the BNMI, and has acted as an enthusiast for the importance of this project.

Introduction

SARA DIAMOND WITH SARAH COOK

This book attempts to capture the spirit of dramatically changing times—the heady rise of the digital age, its tumultuous descent, and its reformulation, as translated through the first 10 years (1995–2005) of the Banff New Media Institute (BNMI).¹ The Banff Centre designed the BNMI to link the power of art and design to that of science and technology. As a neutral and trusted institution situated in the awe-inspiring wilderness of the Rocky Mountains, The Banff Centre was able to bring into play opposing viewpoints and practices—utopian and dystopian. The BNMI was created as a space for action-driven dialogue, a “third space.”² As Mark Muller states, a third space that acts as “the border or boundary region between two domains—two spaces—is often a region of overlap or hybridity.”³ The BNMI hoped to bring *innovation*, which it defined as “not an end in itself but the method and process for generating new meaning, as well as human and economic value,” to a new convergent space where art, design, science, and technology could meet. It was to become a productive physical and virtual space—creating research, significant social networks, artworks, designs, technologies, theorizations, economies, and companies.

Early on, the BNMI saw the inevitability of *convergence*, which it defined as “the evolving interconnectedness and multidisciplinary nature of cultural industries, networks, knowledge domains and media formats.”⁴ The BNMI traversed, overlaid, and ultimately influenced three fields of convergence: technology, the adoption of new media, and the economics of digital media. The institute also conceived of, developed, and exposed prototypes that were five to 10 years before their time, mapping out robust networks for the research community (to expose creators and technology companies to the source); the technology sector (to insist

¹ See <http://banffcentre.ca/bnmi/archives/> for an extensive resource that provides a research archive of the history of the Banff New Media Institute, and see the afterword for details on the period following that examined in this book. The Banff Centre also holds physical archives.

² Homi Bhabha, *The Location of Culture* (London: Routledge, 1994).

³ Mark J. Muller, “Participatory Design, the Third Space in HCI,” in *Handbook of HCI* (Mahway, NJ: Erlbaum, 1993), 1–32, 4.

⁴ Foreword, *BNMI Program Brochure*, 1998.

on the inseparability of content and technology in the digital age); all sectors of the emerging commercial content industries (to ground discussions in the needs of the creative economy); distribution agencies such as games publishers, broadcasters, and Internet service providers (to understand how content and technologies were distributed to audiences); independent artists and producers (to locate experimentation and critique within the economic dialogue); academic analysts such as ethnographers, philosophers, and economists (to provide insight on these industries from outside); public and private investors (to build a broad understanding of what was available, what was needed, and what was possible); lawyers (to understand and shape the emerging field of digital rights); and regulators and government (to place emerging industries within contradictory and changing policy). This unusual amalgam allowed for fresh ideas and cultural melding.

Anthropologists and ethnographers use the idea of the *boundary object*;⁵ these objects are transformational concepts and artefacts that join one world of understanding with another. In most instances, boundary objects are material gifts, but in cross-disciplinary dialogue, they can be terms, maps, prototypes, or other semiotic artefacts. These objects symbolize the boundaries or edges where new knowledge is produced. Gerhard Fischer notes that boundary objects are able to adapt to all groups: “They represent the domain concepts and ontologies that both define and reflect shared practice.”⁶ Original objects (for example, the terms *wearable* and *technology*) are reinterpreted through this process, unsettling assumptions about both original terms (*wearable technology* bridges engineering, material science, fashion design, and sculpture). The BNMI could be described as trafficking in the economy of boundary objects.

In the face of terrific change and opportunity, the BNMI became a site of first engagement for dialogues, strategies, and practices that would transform the field of new-media practice. It is these dialogues that are captured in this book.

5 S. L. Star and J. R. Griesemer, “Institutional Ecology, ‘Translations’ and Boundary Objects: Amateurs and Professionals in Berkeley’s Museum of Vertebrate Zoology, 1907–39,” in *Social Studies of Science* 19, ed. M. Lynch (London: Sage, 1989), 388.

6 G. Fischer, “Social Creativity: Turning Barriers into Opportunities for Collaborative Design,” in *Proceedings of the Participatory Design Conference* (Toronto: ACM, 2004), 157.

CONVERGENCE: TECHNICAL, CULTURAL, AND ECONOMIC CONTEXTS

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The period of the early '90s through to 2005 saw intensive technological change: the massive adoption of “new media” and its normalization as “digital media,” and the rise, fall, and re-emergence of an information-, technology-, and communication-boom economy. Moore’s law drove memory capacity, processing speed, and sensor precision up at an exponential rate.⁷ During these 10 years, the BNMI witnessed the dawn of the visual Internet; the emergence of *search* as the dominant Internet paradigm; the invention of streaming, sophisticated artificial-intelligence algorithms that permitted personalization; paradigm shifts from thick clients to thin clients and from peer-to-peer to fast downloads; the emergence of network computation and the cloud; the release of Voice over Internet Protocol and Internet relay chat; the ascension of mobile computing; and the aggregation of location-based, context-aware capacities into mobile devices. Technologies that were computationally expensive—such as virtual reality—became efficient. Powerful graphics engines concomitant with dynamic software programs became synonymous with computer gaming, driving 3D imaging. Virtual reality, simulations, and data visualization moved from the margins and became mainstream industrial and research practices. Technologies became relatively fail-safe and user-friendly.

These massive technological changes had an impact on computational culture, applications, and uptake. The years from 1995 to 2005 witnessed the globalization of digital tools and content, as well as increases in digital engagement in Eastern Europe, Brazil, India, China, and the African continent. Utopian fictions proposed the transformation of individual identities into a new collectivity free from prejudice and material need. Social media emerged through blogging, chat, and instant messaging, bringing millions of people into the digital world. E-learning became standard fare in colleges and universities in many countries worldwide. *Collaboration* became the watchword of research, invaded creative practices, and challenged ideas about authorship. The adoption of mobile telephony transformed family life, public space, political activism, and youth culture, and made 24/7

⁷ According to *Wikipedia*, “Moore’s law describes a long-term trend in the history of computing hardware. The number of transistors that can be placed inexpensively on an integrated circuit has doubled approximately every two years. The trend has continued for more than half a century and is not expected to stop until 2015 or later.” Wikipedia contributors, “Moore’s law,” *Wikipedia, The Free Encyclopedia*, http://www.en.wikipedia.org/w/index.php?title=Moore%27s_law&oldid=429603897. Also see http://www.download.intel.com/museum/Moores_Law/Printed_Materials/Moores_Law_Background.pdf for further information.

availability a reality. Privacy began to erode as a principle as well as a practice. Embedded sensor systems and radio-frequency identification tags gave birth to the “Internet of things,”⁸ allowing objects to speak to one other, opening new practices in architecture and commerce, and changing supply-chain management forever. Haptic and gestural interfaces and soft circuitry fully engaged the body through physical computing. Human-computer interaction and beautiful and efficient design became as critical as the algorithms and engineering that underlay technologies. While artists continued to engage in the adventurist adoption of emerging technologies, artists in traditional media—whether in theatre, music, or visual art—also took up digital tools. The tactical media movement amassed a powerful critique of technology and its dystopian impact on society, and made use of digital technologies in effective and decentralized sociocultural interventions. As in commercial media, curatorial practices in the new-media art world were challenged, as artists strove to represent their own work and remove the mediator. Curatorial practice responded with new models—providing context for and a window on the production process, and aggregating difficult-to-discover content.

During these 10 years, the digital economy hyperventilated, gasped, choked, inhaled deeply, and breathed yet again. E-commerce was adopted wholesale, as security systems and effective interfaces merged. Technology began to boom again while disintermediation intensified in the content industries, with the rise of file-sharing and peer-to-peer systems. The traditional music industry melted down. The “battle for eyeballs”⁹ raged between the online content economy, computer games, and television. Advertisers remained sceptical about the value of investing in Internet advertising—until 2005, when banner ads began to work. Personalization promised effective computer targeting. Online products and services began to generate revenue. Hope was invested in “the long tail”—the idea that the Internet would provide longevity for niche cultural content. The traditional media industry flirted with “convergence” but dismissed it after the 2001 correction, opting instead for “vertical integration.” The term was banished for several years but began to reappear in 2005.¹⁰ In the software, research, and publishing worlds, open-source

8 A term attributed to the Auto-ID Laboratory at the Massachusetts Institute of Technology (MIT), founded by Kevin Ashton, David Brock, and Sanjay Sarma. The term implies that everyday objects are intelligent and networked.

9 This is a common term in the media industries that refers to competition for viewers—between media forms, as well as between discrete programs.

10 During the '90s, the “Three Cs”—*community*, *commerce* and *convergence*—were constantly referred to as the core phenomena of the digital era.

software, free software, open platform, and copyleft faced off against Internet Protocol–ownership-based regimes as strategies to fuel innovation.

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THE RISE OF THE BANFF NEW MEDIA INSTITUTE AT THE BANFF CENTRE

Located in the heart of the Rocky Mountains, The Banff Centre is a haven that allows for reflection and thoughtful action in the face of dramatic and contradictory transformation, and was critical to the success of the Banff New Media Institute. The “Banff Method,” as it came to be known, entailed intensive immersion in both the natural environment and the creative environment of the place and institution. Tables in the dining room served as cultural mixing boards where artists, scientists, mathematicians, and industry participants met. As a fulcrum for new-media practice, research, and theory, the BNMI collaborated at various levels over time with other programs at The Banff Centre: Music & Sound, Theatre Arts, the Walter Phillips Gallery, Creative Electronic Environments, Visual Arts, Aboriginal Arts, the Banff International Research Station/Pacific Institute of Mathematics, and Radio90.

The Banff Centre had developed and led a unique Media Arts program that solicited and supported virtual-reality projects by artists from many disciplines. By 1994, virtual-reality research remained encumbered by the high ratio of computation to creative inputs, and new technologies began to capture artists’ imaginations. The leadership of what was then the Multimedia Institute (later the BNMI) felt that it needed to move beyond the Art and Virtual Environments Project and conduct research into the emerging world of the Internet and the potential for networked virtual environments, visualization, 3D games, installations, and physical interfaces. At the time, it was extremely costly to build and maintain a virtual-reality laboratory, which required a Silicon Graphics base (which cost millions of dollars) and very focused programming expertise. Centres that supported virtual-reality creative works could usually fund only one such project a year. When the price point and development time dropped, the BNMI was able to build a graphics laboratory, a Cave Automated Virtual Environment (CAVE), and graphics-creation capabilities through the establishment of the Advanced Research Technology (A.R.T.) Labs. These undertakings allowed the BNMI to become a multifaceted institution within The Banff Centre.

From its inception, the Banff New Media Institute concerned itself with the developing languages and implications of new technologies as well as with the

creative investigation and application of technology itself. Fundamental to the ethos of the BNMI was the concept that artists and designers should be both advanced users of technologies and inventor+s of technologies. Insisting that “all forms of technology are designed,” the BNMI sought to provide cultural, humanist, and posthumanist perspectives on technology research and development design from the standpoints of human culture and respect for the natural world.¹¹ The Banff Centre hoped to facilitate artists’ and designers’ access to and understanding of not only standard digital tools but also the edges of art and science—virtual-reality research laboratories, sensor technologies, biotechnology, and nanotechnology—where access was far more difficult to attain. The BNMI grew into a cross-disciplinary home for the creative arts and design professions and for humanists, social scientists, computer scientists, engineers, mathematicians, physicists, biologists, chemists, and medical researchers. With this interdisciplinary blend, the BNMI could be prescient about the direction of new media—able to predict and, at times, construct emerging practices.

There were important precursors to the BNMI. The Banff Centre had already undertaken creative explorations of digital media in the late ’80s under the leadership of Michael Century, artistic director of Media Arts. The Banff Centre’s strategy for new-media research was intended to establish an original artist-centred paradigm for research, contribute knowledge to society, and advance a particular sociocultural vision for network-based artistic communication. The Banff Centre created a studio-laboratory, or *collaboratory* (a term Century invented),¹² an environment meant to allow artists to develop and work with emerging technologies. This collaboratory built on several decades of prior attempts at art-and-technology collaboration, such as those of artist Robert Rauschenberg and scientist Billy Klüver at Bell Labs in the ’60s.

A 1989 residency and symposium entitled *The Virtual Seminar on the Bioapparatus*, directed by Nell Tenhaaf and Catherine Richards, included leading researchers in virtual-reality technology as well as artists, humanists, and social scientists. Several years later, the Art and Virtual Environments Project—led by Douglas MacLeod with funding from the Cultural Initiatives program of the Department of Communications—emerged. This initiative provided opportunities for artists,

¹¹ Banff New Media Institute, *BNMI Program Brochure*, 2002.

¹² Michael Century, “Collaboratories,” in *Banff Bridges Conference Two: Proceedings* (Banff: Banff New Media Institute Archives, 2002), <http://www.banffcentre.ca/bnmi/bridges/speakerabstract.html>.

designers, composers, programmers, and virtual-reality researchers to prototype creative virtual-reality projects and to embark on original research in virtual reality. Kevin Elliott led a computer-based new-music audio program that invented a viable computerized mixing board called ToolWorx.¹³ The BNMI partnered with industrial research entities, such as Interval Research Corporation, and technical research partners, such as Alias Research, Intel, and Silicon Graphics Inc. Unlike similar industrial new-media labs like Xerox PARC, Phillips Laboratories, and Intel Labs, Banff primarily funded its new-media research through the Department of Communications (now the Department of Canadian Heritage).

As the Art and Virtual Environments Project wound down, these efforts were merged into the New Media Research Program. An amalgamated Media & Visual Arts department launched in 1994, bringing together residencies, new media and media arts (video, audio, and computer arts), workshops, and think tanks to create greater opportunities for cross-disciplinary collaborations, exhibitions, and dialogues. When the federal government lost its enthusiasm for funding art and technology, expensive virtual-reality research was no longer viable. The Banff New Media Institute, originally called the Banff Multimedia Institute (1995–97), began in 1995 as a means to create a coherent platform for all new-media offerings and to open up research into modes of practice as well as technology platforms.¹⁴

Meticulously facilitated think tanks, summits, and workshops comprised the core of the BNMI. The program included extensive co-production and prototyping activities by artists and independent new-media producers, as well as work-study programs. Over the years, the Multimedia Institute and the New Media Institute (2000–10) sustained core threads of activity, including *Interactive Screen* (1995–2010), *Producing New Media: Money and Law* (1997–2005), *Women in the Director's Chair* (1996–ongoing), and the *Interactive Project Laboratory* (2002–05), an extensive summit and workshop program. Throughout the decade, the BNMI maintained an evolving co-production, prototyping, and research platform in new-media content and technology, while sustaining research in data visualization, collaboration, artists' authoring tools, and virtual-reality and immersive-experience

¹³ The Banff Centre's initiative fell between studio-laboratories such as the MIT Media Lab and the University of Art And Design Helsinki (UJAH) Media Lab (which reside in post-secondary institutions or universities) and those associated with art centres, such as V2_Labs, Ars Electronica, IRCAM, and ZKM.

¹⁴ For the purposes of this book, we will use the term "the Banff New Media Institute" ("the BNMI") throughout.

design. This research was undertaken alongside projects that were more immediate and responsive to short-term trends, such as mobile-experience design, educational online gaming, and wearable technologies. In addition, the BNMI fostered independent creative projects by artists and by western Canadian, Canadian, and international commercial developers. For over a decade, it produced the new-media programming at the *Banff Television Festival*; this programming eventually made up almost a third of the festival's content. The institute also initiated or housed dissemination vehicles (including the online publication *HorizonZero*), exhibitions (both in Canada and abroad), and a company incubation program.

After the first two years, the summits and *Interactive Screen* occurred from May to September, accommodating academics and industry participants as well as artists and designers. Educational multimedia events occurred in the spring and training workshops took place throughout the year, as did co-production and research; this created an annual calendar.

THEMES

Over these 10 years, the BNMI took up consistent themes. According to BNMI brochures, the institute's foci included "visualization, peer-to-peer and collaborative systems, responsive environments, new media aesthetics, emotion and computing, and nanotechnology."¹⁵

The BNMI was early in recognizing the social nature of new media, investigating topics such as social media; participatory culture and design; the shifting nature of digital memory and its impact on archives, cultural record, and identity; and the efforts of the tactical media and open-source movements. The institute researched and promoted collaboration by looking at how the digital world shifted production and distribution, allowing the emergence of new models of collaborative practice. These investigations related to a profound interest in shifts in social and individual identity as expressed in new media, including the rise of alternate cultures on the World Wide Web through streamed audio and video, and the potential of gaming to engage and produce new structures of knowledge as well as play.

From its earliest efforts, new-media research at The Banff Centre and the BNMI examined the impacts of diversity within cyberculture, including debates about

¹⁵ Banff New Media Institute, *Banff New Media Institute Workshops and Summits Brochure*, 2004–5.

whether practices and prejudices carried over into the Internet.¹⁶ The 10 years saw a significant engagement with Aboriginal culture and new media; the BNMI, in collaboration with Aboriginal Arts at The Banff Centre, provided training through the *Aboriginal Interactive Media: Electronic Publishing and Multimedia* workshop, as well as co-production, exhibition, and concept-sharing opportunities for Aboriginal people in Canada and beyond. Aboriginal perspectives on issues as diverse as digital memory, community radio, gaming culture, and translation software were included in many of the summits.

The BNMI's second theme was the digital economy. The institute supported experimentation with and sharing of emerging models of money and law, and played an activist role in pulling together a creative new-media industry and exploring models for economic viability, with interests in both content and technology. The 1997 director's notebook notes the importance of bringing "creative, artistic and critical thinking to commercial space(s), offering the possibilities of a creative economy."¹⁷ The text suggests that putting together an appropriate commercial climate requires one to "support creative commercial companies especially in games and entertainment (Canada, USA, UK, Australia, Mexico); create alliances of knowledge sharing between artists, software and technology companies, research centres; analyze the economies that exist on a local and global level and find new models of creating collaborations; create opportunities for artist (creative) market development; create means to integrate artists/creative sector into research and development."¹⁸ Tasks central to this endeavour included exploring policies regarding intellectual property—from open-source to copyright and patents—and finding ways to leverage access to private and public funding and capital markets, as well as to financing models.

A third field of interest was the relationship between science, digital technology, and the physical world—both body and nature. Banff proved an ideal setting in which to reflect on humanity's changing relationship with nature. The BNMI investigated the material known as data—that is, changes in the nature of data; its organization;

¹⁶ In its early days of new-media exploration, Media Arts organized a small summit entitled *Drum Beats to Drum Bytes* (1993) that explored Aboriginal presence on the Internet. A second gathering, *Drum Beats to Drum Bytes II* (2002), occurred almost a decade later in order to evaluate progress. Led by Ahasiw Maskegon-Iskwew, it drew together original participants and new players. The summit was produced under the auspices of the Canwest Global Communication Award, an annual award for a Canadian participant in Banff New Media Institute programs.

¹⁷ Sara Diamond, notebook, 1997.

¹⁸ Ibid.

and its expression through memory, understandings of intelligence, actual material effects, and objects that traverse the physical and virtual worlds. The BNMI also looked at the ways in which definitions of the *human* and the *machinique* are in continual transformation (becoming machine/staying human), from understanding the body and the changing nature of perception through the lens of technology to the emergence of artificial life, biotechnology, wearable technologies, mobile experiences, and nanotechnology—where carbon and silicon intertwine.

The BNMI conducted ongoing research into and held aligned theoretical dialogues about the nature of physics, perception, and immersion. The *visual* was of key significance as imaging technologies changed, linking the visual to the spatial and making possible the elision of virtual and physical architectures. The Banff Centre maintained an enduring interest in immersive experiences in virtual reality and, later, the 3D web. The same technologies drove the emergence of data visualization and simulation—these became themes of creative activity, research practice, and debate. Location-based and pervasive gaming, as well as augmented reality (which linked physical and virtual realities) developed through co-production and research, as did wearable or portable technologies that allowed interaction on and between garments and spaces. Physics—whether Newtonian or quantum—played in the background, lying beneath the understanding of emerging technological capacities. Considerations of space/time—including those outside of human experience—fuelled research and creative exchange.

THE SUMMITS

The BNMI steeped its activities in discourse that was rigorous, playful, and experiential. The summits' deep discursive space is what separated the BNMI from other new-media studio-laboratories. The philosophy behind these encounters is articulated in the opening remarks to the summit *Quintessence: The Clumpy Matter of Art, Math and Science Visualization* (2002). "Quintessence" was taken as a guiding metaphor because, in cosmological physics, it is a substance or phenomenon with an astounding property: unlike most forms of energy—such as matter or radiation—which cause expansion to slow down due to the attractive force of gravity, quintessence causes the expansion of the universe to accelerate. Sara Diamond remarked that quintessence points to both the blind spots in understandings between disciplines and our tendency to "bang up against each other in often productive ways," and suggested that the division between art and science—now an historical artefact—still impinges on us, resulting in "us seeing the light and

then having it disappear.”¹⁹ Quintessence can permit us to explore in a nonhumanist manner, at times setting aside our anthropocentrism; acknowledging—both as artists and as scientists—the existence of intelligences, systems, and processes that are not necessarily within our perceptual range; and endeavouring to abstract and model these. From this perspective, another “cut” between the sciences and arts falls away, as we acknowledge the aesthetics and politics of representation within the devices of visualization.²⁰ It is thus the discursive evidence of the summits and the *Interactive Screen* workshops that forms the heart of this book.

The summits played another critical role. Despite Banff’s best efforts, access to cutting-edge tools was not always possible on-site. There were no telescopes or electron microscopes, and, for a period of years between the Art and Virtual Environments Project and the opening of the A.R.T. Labs, Banff lacked a sophisticated 3D-graphics presentation environment, though it continued to work energetically with 2D and 3D graphics, VRML, data visualization, and all manner of sensors and immersive performance tools. The summits created a space in which to present and discuss the contemporary work in art, design, and science that was occurring in the fields of simulation, immersive 3D, and nanotechnology, in regions far beyond the boundaries of The Banff Centre. At the same time, the social, cultural, political, and economic implications of these technologies and their applications were constant elements of the dialogue.

As early as 1993, New Media Research began a series of think tanks and conferences; these included a seminar on artists’ authoring tools, a groundbreaking gathering on Natives and the Internet (which featured a live chat with artists at an event at London’s Institute of Contemporary Arts), a think tank on audio technology, the *Fourth International Conference on Cyberspace* (1994) (which explored identity in cyberspace), and the *Art and Virtual Environments Symposium* (1994). In collaboration with Media & Visual Arts, the Multimedia Institute held several symposia: *Death, Desire, the Dream and the Machine* (1996), *Flesh Eating Technologies* (1997), *Animation: An Exploration of Japanese Anime* (1997), and *The Digital Burgess* (1997).

The framing event for future summits occurred in 1997, when The Banff Centre and Real World (the company of musician Peter Gabriel) co-produced *The Summer Summit at the Summit*, which was organized as a think tank and a giant gaming experience. Designed by Sara Diamond and Joshua Portway, it included

¹⁹ Sara Diamond, “Introduction to Quintessence,” in *Quintessence: The Clumpy Matter of Art, Math and Science Visualization: Conference Notes*, prep. David Ribes, 2002.

²⁰ Ibid.



A summit dinner at The Banff Centre, *Simulation and Other Re-enactments: Modeling the Unseen*, 2002. Courtesy of the BNMI.

more than 100 leaders in new media. The summit, supported by funding from Industry Canada and Real World, explored the future of commercial and creative new media, computer games, creative publishing, and emerging technologies. It attempted to define business models that could aid independent production and sustain the growing content industries. Sessions ranged from “Out of the Box,” which explored “everything that’s not on a screen” to “Multi-Player Submersion,” which asked, “How can interactive media act as a social conduit?” The final session was entitled “Meltdowns, Success Stories, Non-Disclosures, Dementia, or Summit Up—How Was It for You Dear?” There, participants argued for the need to think “out of the box” in order to solve development bottlenecks, and for the BNMI to place importance on physical computing technology.

The Summer Summit at the Summit inspired and launched the BNMI summit program that continued for nearly a decade, providing a blueprint for the structure of future summits as well as key thematic directions for future dialogues. In 1998, two events followed on its heels: *Telus Presents: Out of the Box: The Future of*

Interface, which is represented in Chapter 2 (“Physics, Perception, Immersion”) and *Bell Canada and MediaLinx Present Big Game Hunters*, excerpted in Chapters 5 and 6 (“Social & Individual Identity in New Media” and “Money & Law”). *The Summer Summit at the Summit* also set the framework for discussions at *Producing New Media: Money and Law* that considered the structure and business models of the new international digital economy. For example, a session entitled “Delivery Dominatrices” debated whether service providers could be content creators, and considered whose rules and regulations should define the online world.

The BNMI annual program presented three to four summits, including at least one summit that was speculative and another that had immediate relevance. As BNMI research and co-production progressed, summits also underscored these practices. The event programs are rife with language play, puns, and word games, signalling a high-altitude attitude of playful, clever expectation. Summits were rigorous, challenging, and pleasurable.

Some summits complemented Media & Visual Arts residency themes. Specific years had distinct foci while taking up larger BNMI ideas. For example, the *Banff New Media Institute Year 2000 Roster* states, “In the year 2000, our focus is on science, art, culture, emotion and the fictions of the new millennium.”²¹ That year’s four summits maintained the BNMI’s interests in collaboration, immersion, the body, and nature, as well as in money, law, and power in the digital world—but added a millennial twist. *Emotional Computing: Performing Arts, Fiction and Interactive Experience* was a summit that used knowledge from performing arts as inspiration in order to “search for meaningful as well as abstract strategies that bring together our understanding of presence in the year 2000.... It continues Banff’s discussions of intelligent software design.”²² *Growing Things: The Culture of Nano Tech, Bio Tech and Eco Tech Meat Art* stated, “Many artists and researchers are fascinated with the imminent possibilities of designing life forms, but are we damaging or growing things? How can we open up the lines of communication between Human/Nature/Technology? Can we turn devastation into art?”²³ Later in the year, a pragmatic summit explored the economy of access to fast-speed networks; entitled *The Banff Super Conductor: Network Collaborations, Convergent Services, ecommerce, Tactical Media, Filling for Fat Pipes*, this was a summit dedicated to “developing

21 Banff New Media Institute, *Banff New Media Institute Year 2000 Roster*, 2000.

22 Ibid.

23 Ibid.



Sara Diamond, Maurice Jacobsen, Ellie Rubin, and Keith Kocho hiking, *Financing Multimedia Software and Content Projects* and *Interactive Screen*, 1997. Courtesy of the BNMI.

concrete strategies for the creation of rich networked content, with a special focus on learning and creativity.”²⁴ The year ended with *Living Architectures: Designing for Immersion and Interaction*, which developed “approaches to designing highly responsive spaces, contexts and their contents, and the needed intelligent software and tools, including surfaces, network capabilities, cellular technologies, and motion sensing systems, projection and neural networks.”²⁵

Summits followed a certain pattern (later described as “The Banff Method”): “high-energy encounters at the frontier of science, art and technology, fast-prototyping projects to evolve new media beyond the expected and the usual.... People come to the BNMI to share what they know and what they don’t know, to take risks and work together towards the convergence of art, technology and industry.”²⁶ The goal was to “consider and demonstrate current and future directions in new media.”²⁷ Participants were chosen through careful curatorial efforts that matched

²⁴ Ibid.

²⁵ Ibid.

²⁶ Banff New Media Institute, *Banff New Media Institute Program Brochure*, 2002.

²⁷ Banff New Media Institute, *Banff New Media Institute: Workshops and Summit Brochure*, 2004–

5.

perspectives, forms of knowledge, intelligence, and openness.²⁸ Some attendees applied, and were incorporated if they met the event's criteria. Summit programs included presentations by The Banff Centre's resident researchers, artists, designers, co-producers, and theorists. Continuity was established not only by BNMI staff but also by a group of participants who returned to follow themes through the years.²⁹ Summits opened with a context-setting statement by the Banff organizers and, when appropriate, their collaborators, and each day of the summits began with a presentation from the director, who summarized and analyzed the previous day's work and pointed out the direction for the day ahead. Participants provided overviews of their research or practices during rigorously facilitated panels that made time for thorough discussion. There were often immersive elements to the summits, whether it was gaming nights (at *Emotional Computing*, an entire game parlour was set up in Glyde Hall), networked performances, artist-studio visits, experiential problem-solving games, or charrettes. There was always an opportunity to explore nature through hiking, thematic walks, skiing, or picnics. There were intensive social encounters, including theme parties, regular dinners, and evenings at then-director Sara Diamond's house in Canmore; during these soirées, guests enjoyed dinner, dancing, walks along the Bow River, badminton on the front lawn, dips in the hot tub, and pleasant chatter in the gazebo, before being picked up by a big bus and returned to the Banff Centre. The summits would end with a final day of strategic thinking, project building and forward planning.³⁰

28 Examples of participants include Roy Ascott, Oran Catts, Ionatt Zurr, Douglas Cooper, Mark Dery, Steve Dietz, James Gimzewski, R.G. Goebel, Ralph Guggenheim, Laurence Guinness, N. Katherine Hayles, Michiru Ishikawa, Mitsuhsa Ishikawa, Eugene Jarvis, Stewart Kosoy, Steve Kurtz, Brenda Laurel, Barbara London, Peter Lunenfeld, Toshihiko Nishikubo, Gilberto Prado, Przemyslaw Prusinkewicz, Greg Roach, John Ryan, Carolee Schneemann, Joan Shigekawa, Alexei Shulgin, Clay Shirky, Karl Sims, Eddo Stern, Deepak Srivastava, Alexander Tsiaras, Jon Winet, and Anthony Zee.

29 This stable base of participants included Maurice Benayoun, Joanna Berzowska, Justine Bizzochi, Kellogg Booth, Pierre Boulanger, Peter Broadwell, Heath Bunting, Bill Buxton, Sheelagh Carpendale, Andrew Chetty, Sarah Cook, Nina Czegledy, Bruce Damer, Char Davies, Diana Domingues, Tom Donaldson, Jonathan Drori, Sidney Fels, Fred Fuchs, Lizbeth Goodman, Steve Grand, Saul Greenberg, Mark Hansen, Natalie Jeremijenko, Tom Keenan, Ted Krueger, Martha Ladly, William Leler, Matt Locke, Sylvère Lotringer, Tapio Mäkelä, Joy Mountford, Anne Nigten, W. Bradford Paley, Scott Paterson, Celia Pearce, Ken Perlin, Simon Pope, Joshua Portway, Jane Prophet, Peter Ride, Mark Resch, Mark Rioux, David Rokeby, Ellie Rubin, Warren Sack, Andrew Salway, Thecla Schiphorst, Rasa Smite, Raitis Smits, Josephine Starrs, Alluquere Rosanne Stone, Lynn Sutherland, Nell Tenhaaf, Demetri Terzopoulos, Victoria Vesna, Xenophile Media, Sha Xin Wei, Ron Wakkary, David Wishart, Eric Zimmerman, Marina Zurkow, and others.

30 The BNMI summits arguably had a large impact on The Banff Centre as a whole, as the model of these summits was adopted by all departments of the institution; over the decade, summits increased in priority and frequency across The Banff Centre.



Sara Diamond's home in Canmore welcomed guests during all BNMI events. Courtesy of Sara Diamond.

Typically, all summits looked at the kinds of applications that were needed and imagined, provided a critical context for the topic, explored the possibilities and limits of related technologies, and proposed and attempted to construct the alliances needed to move research and creation forward. The BNMI frequently commissioned written reports of a summit, or, later, an issue of *HorizonZero*. Banff

summits were often the first conference activities to develop analyses of new forms or emerging technologies. For example, the *Big Game Hunters* summit (1998) began a process of analyzing computer-game genres and experiences, and of identifying methodologies with which to approach computer-game analysis. The summit set the framework for future games-studies events and publications.³¹

These endeavours created a core base of participants at BNMI events, who provided continuity as well as non-stop rounds of new participants who could address particular themes or related projects. Many of these participants are represented in this volume.

³¹ The full summit and workshop archive can be found at <http://www.banffcentre.ca/bnmi/programs/archives/>.

The BNMI sometimes collaboratively organized more traditionally structured, large-scale academic conferences with the summit program, such as *Flesh Eating Technologies* (1997), which explored millennial-era anxieties; *Bridges II: A Conference about Cross-Disciplinary Research and Collaboration* (2002), which looked at new-media, art, science, and technology collaboration across cultures;³² and *Re:Fresh! First International Conference on the Histories of Media Art, Science and Technology* (2005), which featured peer-reviewed panels, keynotes, and a resulting publication.

WORKSHOPS AND TRAINING OPPORTUNITIES

Interactive Screen, Banff's project and company-development laboratory, was a critical factor in the emergence of the Multimedia Institute. It was born on a bus en route to the *Banff Television Festival* barbecue, when Sara Diamond and Steven DeNure (then the president of Alliance Productions and Alliance Multimedia at Alliance Communications Corporation) agreed that it would be a worthwhile experiment to see what leading television and film directors might do with these emerging media. Support came from Alliance Communications and The Banff Centre's new-media research funds from Heritage Canada. The advent of The Multimedia Institute in 1995 signified The Banff Centre's first efforts to build enduring relationships with commercial digital media such as Real World or Voyageur, expanding from its earlier research collaborations with technology and software companies like Apple, Softimage, Alias (which became Alias/Wavefront), and SGI.

By 1996, the BNMI had linked with Real World, Microsoft, and other companies to present an *Interactive Screen* that combined intensive project brainstorming, charrettes, critical dialogue, and financing plans. *Interactive Screen*, along with its allied producers' workshop, *Money and Law*, became the backbone of the BNMI. A core principle of the program remained the need to place content and technology companies in close proximity with one other, allowing the emergence of new hybrid forms and alliances. The format of *Interactive Screen* evolved over the years, but always included expert presentations, mentorship sessions, case studies, intensive brainstorms on specific projects, experiential learning, and game play, as well as rigorously developed five-minute rapid-fire presentations of individuals' creative works or projects. *Interactive Screen* grew to include the significant Canadian funding agencies, in particular Telefilm Canada and the Bell Broadcast and New Media Fund. It was the birthplace of companies, projects, and industry strategies.

32

See <http://www.banffcentre.ca/bnmi/bridges/> for more information.



Left Sara Diamond's hot tub/melting pot/social-networking site. Courtesy of Sara Diamond.

Right Douglas Cooper, Celia Pearce, Justine Bizzochi, Jim Bizzochi, and other guests at an ice-melting soirée in Canmore. *Interactive Screen*, 2005. Courtesy of the BNMI.

Over the years, *Interactive Screen* included leading lights of commercial new media.³³ Balanced between creative project development and funding strategies, it included new-media artists, designers, and inventors whose work was innovative and deserved investment or pointed to new directions in content and technology that could be adopted by industry.

The *Interactive Screen* participant list has grown to include many successful Canadian new-media companies formed in the '90s and the early 21st century (Bluesponge, Bulldog, ExtendMedia, Xenophile Media, Marblemedia, GlassBOX, Colleidescope, Raincity Studios, etc.) and many companies from the United Kingdom (XTP, Unexpected Media, etc.), the United States (MediaSense Inc., Polar Productions), and around the world, as well as key service providers (Telus, Rogers, Microsoft Network, Bell, etc.), broadcasters (CBC, CTV, CanWest Global, etc.), technology companies (SGI, Microsoft, Apple, Intel, etc.), venture funds (McLean Watson, Acumen Capital, Ventures West Management Inc., Digital Frontiers, Whalen Beliveau & Associates Inc.), banks (Toronto Dominion Bank, Royal Bank of Canada), agencies and government (Telefilm, Industry Canada, Heritage Canada, the Industrial Research Assistance Program/National Research Council (IRAP/NRC), Western Economic

³³ Some examples include Laurie Anderson, John Baker (Broderbund), Matt Adams (Blast Theory), Douglas Cooper, Daniel Canty, Wayne Clarkson (Canadian Film Centre, Telefilm Canada), Keith Kocho, Jason Lewis, John Oswald, Mark Pesce, Robin Mudge (BBC), John Sanborn, Stephen Selznick, Neil Sieling, Anna Serrano, Aleen Stein (Scholastic), Bob Stein (Voyager), Tom Williams, Martin Katz, Geena Davies, and Real World's creative directors: Michael Coulson, Martha Lady, Alex Mayhew, and Joshua Portway.

Diversification (WD), Alberta Science and Research Authority (ASRA), etc.), and funds (Bell Broadcast and New Media Fund, Stentor).

The BNMI paid careful attention to gender representation as well as to cultural and Aboriginal presence at its events, seeking to address the growing digital divide and to provide multiple viewpoints through inclusion. The year 1996 also saw the birth of *Women in the Director's Chair*, a workshop for Canadian women who aspired to direct feature films and television. The workshop continues to this day, presented in partnership with Creative Women Workshops and the Alliance of Canadian Cinema, Television and Radio Artists. Its graduates have built successful careers throughout the feature-film and series-television industries. Thanks to the efforts of Stephanie MacKendrick and Sheridan Scott, the BNMI collaborated with Canadian Women in Communications (CWC) and Corus Entertainment to create the *CWC/Corus New Media Career Accelerator*, an intensive, hands-on management-training workshop for women in convergent content and technology who aspired to leadership positions across the digital industries and were already executives in the television or telecommunication industries.

The early Banff New Media Institute offered a series of technical and design workshops, filling a gap in existing training resources at a time when few colleges or universities taught software programs. Workshops in educational new media, games design, writing for interactive media, visual design for interactive media, and writing for series television were part of the BNMI package. Growing multimedia and digital networks created the possibility for entirely new educational experiences within the classroom, workplace, and home. The BNMI offered training in educational multimedia through events such as *Developing Educational Multimedia* (1996) as well as a summit—*Developing and Designing Educational Multimedia* (1998)—which brought together government leaders, infrastructure providers, educational multimedia experts, and artists in order to analyze significant trends in this emerging new-media field.

The *Accelerator* program provided practical workshops with a regional commercialization focus, and was funded by WD, ASRA, and the NRC beginning in 2002.³⁴ In 2004 and 2005, its HDTV Training Lab brought together industry professionals and mentors from The Banff Centre in order to provide hands-on training in high-definition television production.

34 See http://www.banffcentre.ca/bnmi/accelerator/past_programing.asp.

In 2000, the *Interactive Project Laboratory (IPL)*—an initiative of the Bell Globemedia Content Innovation Network (BGCIN)—came into existence. The *IPL* was a national bilingual incubator for new-media creative or technology projects with commercial potential, and was developed in partnership with the Habitat New Media Lab at the Canadian Film Centre and L'Institut national de l'image et du son (l'INIS) in Montreal. Companies that won the entry competition participated in workshops at Banff, the Canadian Film Centre's Habitat, and l'INIS, and took advantage of residencies at the three locations.

The creation of training opportunities for industry professionals, researchers, and technicians was an important part of the BNMI's mandate. BNMI work-studies assisted on projects and had the opportunity to undertake their own creative activities. As the BNMI attracted research funding, the work-study program included formal opportunities for graduate, doctoral, and postdoctoral students. Participants in the work-study program have gone on to significant careers in corporate, research, educational, and technical fields.

THE BANFF TELEVISION FESTIVAL

The BNMI engaged television directors, producers, broadcasters, and distributors on two fronts: firstly, the institute sought to create awareness about the digital revolution; secondly, it strove to support creative independent television production through workshops, summits, and co-production. The BNMI believed that the onslaught of digital television, the boom in speciality channels, and the inevitable emergence of Internet-based television access provided fertile grounds for quality independent media production that could be placed in relationship with interactive content. The BNMI had particularly strong relationships with the BBC, due to its leadership role in multimedia and arts television (and the fact that its Imagineering research department funded the BNMI and regularly sent participants to Banff), and with Channel 4, due to its powerful engagement with creative independent production and the arts.

Working closely with the *Banff Television Festival*, the BNMI created new-media and television events that bookended the television festival. New-media events included *Interactive Screen Workshop: Beyond Television* (1995), *Surf's Up! The Deep Web Workshop* (1996), *The Selling of Silly and the Future of Funny: Television, Interactive Media and Comedy* (1997), and *Marriage or Divorce? Television and the Web* (1997). Creative television events included *Meet the Brits* (1995) and *The Documentary*

Deluge: What's Fuelling the Documentary Revival? (1996). Throughout the year, the BNMI presented special workshops on television topics, such as *Arts, Entertainment and Variety Programs: The Rhombus Story* (1998), *Managing Controversy: The Channel 4 Success Story* (1998), *The Art and Fiction of Science Media: Television and Interactive Media* (2000), and *Cutting Truths: Convergence, Interactivity, and the Future of Documentary* (2000); this last workshop explored the changing nature of documentary in the digital age.

As early as 1992, The Banff Centre programmed a new-media stream and an arts-television stream within the *Banff Television Festival*; this grew to become a significant, BNMI-branded part of the event, making up almost a third of the festival's programming. Highlights from the summits and from *Interactive Screen* were packaged for the festival in the form of keynotes, panels, master classes, and cyber lunches. A *CyberPitch* program supported by Bell Globemedia provided winners with coaching, a start-up award, and prototyping support. Many of the winning projects, such as *Accidental Lovers* (Finland), went on to completion and critical acclaim. The Banff Centre continues to collaborate with nextMEDIA and the *Banff World Television/nextMEDIA Festival* to develop programming. Digitization has resulted in the recent reappearance of the term "convergence" and the increased integration of all forms of digital-media assets under one virtual roof; as such, digital-media components have again become an integral part of the larger festival, which has been renamed *The Banff World Media Festival: Banff + nextMEDIA*.³⁵

EXPORTING THE BNMI

The BNMI defined its mandate and location as residing both "in a sublime natural setting and through our international collaborative networks." In the late '90s, the BNMI began to develop off-site events and collaborations that continued throughout the period covered by this publication. For example, a roster of 2001 programming includes a new version of the 2000 *Cutting Truths: Convergence, Interactivity and the Future of Documentary* at Toronto's *Hot Docs Canadian International Documentary Festival*. An abiding interest in convergence and interactive documentary led to ongoing collaboration with *Hot Docs* and other festivals, such as the *Adelaide Fringe Festival (Windows on the Real,*

35 Additional discussion of the BNMI and the *Banff Television Festival* occurs in Chapter 6 ("Money & Law"), but material from The Banff Centre and from BNMI presentations at the *Banff Television Festival* is not excerpted in this book. Documentation of the *Banff Television Festival* is held by the Archives of Alberta.

2002).³⁶ These events were often produced as collaborations in partnership with Canadian documentary producer and director Peter Wintonick. BNMI efforts in the realms of archival digital practices and cultural memory led to *Media, Material, and Culture: Communicating Canada's Heritage* (2001),³⁷ a summit held in partnership with the Canadian Artists' Association. A collaboration between the BNMI and Web Labs in New York City resulted in *Crossover* (2001) and *Crossover Studio: In the Wild Place Studio A and B* (2002)³⁸ at White Oak Plantation, Florida—events modelled on *Interactive Screen*.

On top of organizing workshops, BNMI director Sara Diamond and producer Susan Kennard travelled extensively—to Argentina, Brazil, Mexico, Central Europe, the United Kingdom, the United States, China, and Senegal—to present BNMI projects and theories, and to curate exhibitions and events on behalf of the BNMI. The institute had a particularly strong presence in several regions—most notably, Central Europe, the United Kingdom, Finland, the United States, and Latin America. The BNMI co-created a comprehensive mobile content and technology think tank in London in a collaboration with Finland's M-cult Centre for New Media Culture and Arts Council England. In Latin America, for instance, the BNMI conducted activities in several countries, including Cuba, Mexico, Brazil, Argentina, and Costa Rica. In 1999, Sara Diamond participated in *Invencao*, organized by Leonardo and Inter-Society for the Electronic Arts (ISEA) in São Paulo, Brazil,³⁹ presenting very early work on her collaborative *CodeZebra* project and recruiting participants for BNMI events and co-productions.⁴⁰ In 1998, she spoke at *Sigrafi*, the Brazilian version of *SIGGRAPH*, a significant graphics-computation and graphics-art conference that occurs annually and is part of the Association of Computer Mechanics.⁴¹ In 2008, the BNMI co-created a conference in Fortaleza, Brazil, working with Patricia Martin and the Brazilian film industry.⁴² The conference explored emerging new-media forms and featured international and Brazilian new-media and commercial producers. A workshop in Bouzios, Brazil, on the topic of narrative in new media followed on the

36 See <http://www.banffcentre.ca/bnmi/programs/archives/2002/windows/> for a description of the event.

37 See http://www.banffcentre.ca/bnmi/programs/archives/2001/media_and_material/agenda.pdf for a detailed description.

38 See http://www.banffcentre.ca/bnmi/programs/archives/2002/wild_place/ for a program description.

39 A description of this event is available at <http://www.leonardo.info/isast/pastevents.html#invencao>.

40 *CodeZebra* was included in the exhibition *The Art Formerly Known As New Media* (2005), which is described in Chapter 4.

41 See <http://www.siggraph.org/> for information on the *SIGGRAPH* mandate.

42 Martin had collaborated with the BNMI when she was the international liaison at the Film Institute in Havana, and she later led a residency in Visual Arts.

heels of the Fortaleza conference. The BNMI also contributed digital-media works, keynotes, and panel presentations to the *emocao.art.ficial* exhibitions at Itaú Cultural. Throughout the decade, the BNMI forged powerful relationships and collaborations with Brazilian virtual-reality designers and architects, new-media artists, computer scientists and theorists. In addition, the Media & Visual Arts program collaborated with Cuban filmmakers and artists, bringing them to The Banff Centre and providing them with workshops on experimental video and digital media through the BNMI.

A plan to create a shared laboratory at the International School of Film and Television in San Antonio de los Baños, Cuba,⁴³ was scuttled by the Helms-Burton Act embargo, and by the Microsoft acquisition of Softimage, which withdrew its role as an underwriter. In 1995, The Banff Centre created (and continues to maintain) a significant residency program and presentation exchange with Mexico that is funded through the Mexican National Fund for Culture and the Arts (FONCA) and The Banff Centre; this program regularly brings Mexican media artists to Banff for residencies and allows these artists to participate in BNMI events. The BNMI also curated exhibitions of the work these Mexican artists produced through collaborations at Banff (these are discussed further in Chapter 4) and hosted presenters from *Zone Zero* (an online art journal) and from the Multimedia Center at Mexico City's Centro Nacional de las Artes. A similar but smaller program was undertaken with Costa Rica, and an arrangement with the Antorchas Foundation allowed emerging Argentine new-media artists to come to Banff to participate in the BNMI and other residency programs.

CO-PRODUCTIONS AND RESIDENCIES

Thematic residencies in Media Arts and Visual Arts took up elements of emerging digital culture. In 1993, for example, The Banff Centre held a three-term *Nomad Residency*, which Sara Diamond co-created with Lorne Falk (who led Visual Arts' thematic residency program) and Antonio Muntadas (the faculty artist of the Media Arts and New Media Research residency programs). International in its scope, *Nomad Net* (a component of the residency) focused on exploring

the emerging field of Internet art and its globalizing effects, as well as on engaging artists from “nomadic cultures”—including a significant contingent of Australian Aboriginal artists. A series of residencies with names like *Apocalyso* led up to the millennium, examining pre-millennial cultural themes such as technophobia, pandemics, and the rise of spiritualism, carnivale, and

⁴³ See <http://www.eictv.org/eictv/view/index.jsf> for a description of the school, which was founded by Gabriel García Márquez.



Canada/UK/Finland Mobile Workshop, The Finnish Institute in London, London, UK, 2004.
Courtesy of the BNMI.

performance theories.

A comprehensive co-production program began in the mid-'90s, growing from its initial roots in The Banff Centre's Television and Video program. It spanned video art and installation, cultural television (dance, opera, and theatrical shorts), documentary, and all manner of commercial and artistic new-media projects. Once the A.R.T. Labs opened (enabling collaborative technologies, virtual reality, and data visualization, as well as mobile and wearable engineering), the BNMI supported artists' and researchers' residencies in these facilities.⁴⁴ The institute undertook co-productions with Bravo!FACT (CHUM/CTV), the National Film Board of Canada, the BBC, Channel 4, ARTE, Access, Telus, and other commercial partners, as well as with festivals (such as the Dutch Electronic Arts Festival (DEAF) and Ars Electronica), new-media institutions (such as ZKM), galleries, and a galaxy of new-media companies (such as Colleidescope). A collaboration with the Stentor Alliance (a formal alliance of Canada's major telecommunications companies, formed in 1992) and the Canada Council resulted in three artists' projects under the auspices of the Creative Innovation Initiative, and funding from the Millennium Fund Canada supported the commissioning of works for the

⁴⁴ These were certainly one and the same thing on many occasions.

Computer Voices/Speaking Machines exhibition at the Walter Phillips Gallery and for an Aboriginal spoken-word and technology performance series. Although new works were initially commissioned from specific artists or with specific companies, the BNMI eventually began to support projects adjudicated through calls for applications. The A.R.T. Labs also enabled in-house research at the centre.

By 2004, the Banff New Media Institute *Co-Production Catalogue* listed more than 210 co-productions. Examples vary widely: entries include Adrienne Jenik's now-classic CD-ROM *The Mauve Desert* (1996); *Herr* (1998), an early Bravo!FACT short by John Greyson; *Observer/Observed* (1998), a retrospective series by Takahiko Iimura with co-producer Kazuyo Yasuda; *Telebody* (2000) by Steve Gibson; *TGarden* (2000) with Sponge, the European Network for CyberART (ENCART), Ars Electronica, and C3; *CyberPowWow 2K* (2001), co-produced by Skawennati Tricia Fragnito and Archer Pechawis with 10 international Aboriginal artists; *Spectropia* (2001) by Toni Dove; *Smell Bytes* (2001) by Jenny Marketou; *Little Breeze* (2002) by Nina Levitt; and *Six String Nation* (2003–4) with Jowi Taylor.

The BNMI's rich co-production history cannot be reflected in this book. The range is too vast and there are too many divergent types of media and partnerships; a single volume cannot adequately reflect the depth of the co-production program. We encourage a future project that explores the great contribution the BNMI made, though this program, to new-media creation and to research in Canada and beyond.⁴⁵

RESEARCH

When the New Media Research program of the early '90s ended, research continued under the auspices of the BNMI. Artists were engaged and fascinated by many emerging technologies, as well as by the potential for new practices with existing technologies; the research theme thus extended beyond virtual reality and audio. The principle remained the same: placing artists and designers at the forefront of creative and technological discovery—in the third space—with the understanding that the kinds of discoveries that could result would be different from those resulting from engineering or science investigations. At the same time, the BNMI invested more deeply in the theory around research practices. It was imperative to create a descriptive and critical language that could articulate the practice-based methodologies of art and technology research.

⁴⁵ In the meantime, the full list and description of co-productions (up until 2005) is available on the BNMI's website archive at <http://www.banffcentre.ca/bnmi/coproduction/>.

The A.R.T. Labs comprised a CAVE (with related visualization and virtual-reality software), a collaboration laboratory, and a mobile engineering and physical computing laboratory; these technical facilities sustained ongoing research. Technical and major project funding did not only support technology, however: the BNMI also added in-house computer science and engineering knowledge under the leadership of Dr. Maria Lantin. The Banff Centre's role as a unique non-university research environment was recognized by federal funding agencies—specifically, the Social Sciences and Humanities Research Council (SSHRC), the Canada Foundation for Innovation (CFI), ASRA, WD, and CANARIE. The BNMI created a research co-production program that supported ArtSci, Art & Technology, and computer-science researchers in residencies. Thematic foci included data visualization; virtual reality and animation; mobile and locative experiences; wearable technologies; fashion and experience; gaming; and collaborative experiences and systems. The BNMI also collaborated with national and international projects and entities such as the SMARTlab Centre and ENCART.

The Human Centred Interface Project (1997) explored 3D web-based interfaces and physical computing, and began work in data visualization. Banff provided leadership in collaboration and visualization research for WestGrid, a western Canadian high-performance computing network, and the BNMI undertook two CANARIE-financed research projects in collaborative learning: the Rural Advanced Community of Learners (RACOL) and Advanced Broadband Enabled Learning (ABEL). As part of RACOL, which was led by University of Alberta, Banff game developers produced science games for distance learning along with Aboriginal arts content for delivery over the Internet. Banff Centre researchers and faculty were also instrumental in guiding ABEL, a network project led by York University that helped high school teachers in Ontario and Alberta pursue their Masters degrees while developing innovative content and forms of delivery.

Beginning in 2002, Banff co-led two major networks funded by Heritage Canada that engaged university and commercial partners in Canada and abroad. The first, Am-I-Able, brought together research in social networking, architecture, fashion, and wearable- and smart-technology design, and applied these fields of research to learning, health, leisure and sports, and the arts; projects included groundbreaking work in fashion, technology, museum-navigation systems, and design methods. The second network, the Mobile Digital Commons Network (MDCN), occurred over three years and analyzed the scope and potential of mobile networks, content, and technology. MDCN focused on creating location-based, context-aware pervasive

games and learning experiences for wilderness and urban parks, and on testing genres for future mobile entertainment; the network developed participatory-design methods and created annotated and illustrated walking tours, historical ghost stories, animated fantasy games, and sound games. MDCN also produced the Mobile Experience Engine, a technology that assisted in the design of mobile games for cellular phones. Both projects included workshops and focused summits.⁴⁶

DISSEMINATION: EXHIBITIONS, INTERNATIONAL INITIATIVES, AND PUBLICATIONS

Throughout the 1995–2005 period, there was consistent interest in the challenges facing the exhibition of new media. Held in 1998, the *Curating and Conserving New Media* summit and workshop was a groundbreaking event that took up debates about reproducibility, the changing role of the curator in the context of the Internet, and the role of museums in new-media exhibition.⁴⁷ New-media art exhibition, including the commissioning and presentation of new works, occurred through the BNMI and various curators in collaboration with the Walter Phillips Gallery.⁴⁸ Example exhibitions include *Domain Games*; *Streaming: A Laboratory*; *Beauty and the Beast*; *Language Games*; *Cyber Heart*; *Computer Voices/Speaking Machines*; *Sentient Circuitry*; *Database Imaginary*; and many mixed-media shows that featured video and new-media works.

It would be impossible to reflect in a single book all of the exhibitions that took place in tandem with the efforts of the BNMI. Instead, the editors have included in this volume a mini-catalogue for just one exhibition, *The Art Formerly Known As New Media*, curated by Sarah Cook and Steve Dietz. This exhibition, a kind of anti-retrospective, was mounted in 2005 on the occasion of the 10th anniversary of the BNMI. Steve Dietz's essay explains the selection criteria for the works chosen, explores how the field of art making changed over the 10 years covered in this book, and considers the important role the BNMI dialogues played in shaping the field.

The BNMI developed significant international exhibitions, projects, and presentations designed to present its research and co-productions and to facilitate projects in

⁴⁶ Detailed documentation of BNMI research can be found at <http://www.banffcentre.ca/bnmi/research/archives/2005.asp>.

⁴⁷ This event is excerpted in Chapter 7.

⁴⁸ See <http://www.banffcentre.ca/wpg/exhibitions/pre2001>.



Flower Throw (2003–4) was an early *Mobile Digital Commons Network* prototype for the Global Heart Rate Project. Individuals could blow virtual flower seeds indigenous to the Banff National Park to others' mobile phones, receive seeds, and grow a garden. Courtesy of the BNMI.

other places. Sara Diamond curated an exhibition of BNMI co-production artists for *Media City Seoul* in Korea (2002) and for the Canadian portion of the *Beijing New Media Millennium Exhibition* (2004). One significant curatorial initiative was the creation of an opening exhibition of new-media artists, entitled *Cylic*, for the Centre culturel canadien in Paris in 1997; in this exhibition, Diamond showcased Canadian Aboriginal artists—such as Edward Poitras, Mike MacDonald and Ahasiw Maskegon-Iskwew, and the Speaking the Language of Spiders collective—whose work had been produced through the BNMI co-production program or through Media & Visual Arts residencies. Other exhibitions were presented at Dak'Art—Biennial of Contemporary African Art (2004), The Dutch Electronic Arts Festival (DEAF), and the *Rotterdam Film Festival*, and exhibitions and presentations were held in Argentina, Spain, Brazil, Mexico, the United Kingdom, the United States, and Latvia.

When streaming capacity developed, artists, DJs and pirate-radio providers flocked to the Internet. Radio90—a project of Susan Kennard, artist Heath Bunting, and BNMI Coordinator Yvonne Faight—began as a low-power FM and

streamed-media station, bringing together a critique of technology in community-based culture, tactical media, and alternate expressions. As a streamed-media station, later maintained by Cindy Schatkoski, it provided programming and technologies and attracted the alternate-radio culture that was developing a powerful base in the United Kingdom and Central Europe.

From 2002 to 2004, the Banff New Media Institute produced *HorizonZero* (horizonzero.ca)—a comprehensive online publication, commissioning space, and gallery—with funding from Heritage Canada’s Canadian Culture Online (a new issue was also commissioned in 2010 for the Cultural Olympiad of the Vancouver Olympic Winter Games). A multimedia web magazine about digital art and culture in Canada, *HorizonZero* contained reflections on the larger international context and served as a bilingual virtual space devoted to creativity and critical ideas in the new-media canon. The magazine’s 18 issues explored an extensive range of subjects “in the territory where art, science, and technology meet,”⁴⁹ and the publication provided a means by which to disseminate reflections that arose during BNMI summits. The *HorizonZero* website comprises web-based interactive activities, essays, journalistic writings, fiction, poetry, photography, video, animation, games, and other digital artworks. The publication is packaged with this book, and its complete contents list is included in the back matter.⁵⁰

SPONSORSHIP/ECONOMY/PARTNERSHIP

Though the BNMI relied on The Banff Centre to provide facilities and the director’s salary, the institute otherwise functioned as an independent financial entity. Its funding came from a combination of public money for its summits, research, and workshops, and private-sector funds that were direct or in-kind contributions. The sources of public funds indicate the range of programming the BNMI represented. Telefilm Canada was an early and significant supporter of activities such as *Interactive Screen* and *The Banff Centre Presents @ the Banff Television Festival*. Canada Council provided an annual grant, and project money came from Industry Canada, IRAP/NRC, the Alberta Research Council, Canada’s Year of Asia Pacific, and Foreign Affairs and International Trade Canada (DFAIT).⁵¹

49 See the *HorizonZero* description at <http://www.horizonzero.ca>.

50 A DVD of *HorizonZero* is bundled with this book, though this disc does not contain the new issue, which can be found at <http://www.horizonzero.ca>.

51 Research funding is discussed elsewhere in this introduction on page 44.



Left Nina Czegledy speaks at Dak'Art Lab/BNMI collaboration curated by Sara Diamond. Dak'Art—Biennial of Contemporary African Art, 2004. Courtesy of the BNMI.

Right Cheryl L'Hirondelle and Candice Hopkins perform a "giveaway," providing each participant in the Dak'Art Lab with a gift. Dak'Art—Biennial of Contemporary African Art, 2004. Courtesy of the BNMI.

The Canadian Radio-television and Telecommunications Commission (CRTC) requires telecommunications and broadcast industries to provide social benefits when they undertake mergers or acquisitions. Deep Web, a late-'90s project, received social-benefits funding from Stentor. The BNMI received funding from BGCIN and funding from CanWest Global, Corus Entertainment, and Inukshuk through social benefit programs. Relationships with local new-media entities were important. Silicon Valley North funded and publicized the BNMI for many years, and the Edmonton New Media Initiative was another strong partner. Enduring relationships with government agencies like IRAP/NRC and WD eventually led to significant funding for the BNMI. A plethora of Canadian and international institutions were partners or friends of the BNMI, providing support for co-production or for events; examples include Advanced Telecommunications Research Institute International, Australian Network for Art and Technology, the Canadian Film and Television Production Association, ACTRA, MIT Media Lab, the Universidade de São Paulo, the C3 Foundation, the Independent Film Channel, Exploding Cinema, Digital Earth, ISEA, the University of Alberta, the University of California DARNet, the European Cultural Backbone, TRILabs, ENCART, the Canadian Film Centre, the University of Calgary, and many others. Corporate partners and funders were many, including Viacom Canada, MSN, Telus, Phthalo Systems, MediaLinx, Sun Microsystems, SGI, VRML, 3D Studio, Softimage, Alias/Wavefront, Blaney McMurtry, Alliance Atlantis, Colleidescope, Axia, the BBC, and Access.

An impressive group of researchers, artists, and designers such as Ron Wakkary (Simon Fraser University) and Marc Rioux (National Research Council) made up an advisory committee. A great deal of talent from the international and Canadian worlds of digital media, art, design, science, and technology passed through BNMI summits and workshops, with some participants returning as faculty, co-producers, or researchers.

As the BNMI grew, other institutions that linked artists' initiatives in new media with theory and exhibition practices emerged around the world. Some of the most comprehensive include: ZKM in Germany, with its focus on virtual reality and exhibition; V2_, with its artistic labs; DEAF, with its workshops and publications; and Ars Electronica, featuring a festival, awards, and commissioning programs. Think tanks and industry forums—often modelled on the stellar success of *Interactive Screen*—emerged internationally. These include X Media Lab, based out of Singapore,⁵² and Crossover, which originated with the BNMI and was cloned throughout Australia and the UK.⁵³ The Banff Centre and the BNMI should be evaluated within these contexts. At the same time, university media labs have continued to grow, often with extensive research resources to support them. These include Calitz at UC San Diego and UC Irvine, the famous MIT Media Lab, and the Media Lab Helsinki at UIAH, with its Crucible Studio. Discourse on how new-media art is produced and presented has also been sustained over the last 10 years by CRUMB at the University of Sunderland,⁵⁴ co-founded by Sarah Cook. Cook's analytic work is deeply intertwined with her curatorial and research activities at The Banff Centre.

This book, *HorizonZero*, and the comprehensive online web archives allow comparison between the BNMI and other efforts around the world.

LEADERSHIP

The BNMI was initiated and led by Sara Diamond, who was executive producer and artistic director of Media & Visual Arts and director of the BNMI. She worked in close association with Susan Kennard, who was executive producer. When Diamond left The Banff Centre in 2005, Kennard became the BNMI's director. The many staff, associated researchers, and work-studies—and the willingness of The Banff Centre to harbour a creative new-media cauldron—made the BNMI a living reality.

52 See <http://www.crossoverlabs.org/people/15>.

53 See http://crossover.katalyst.com.au/whatisit_introduction.html.

54 See <http://www.crumbweb.org>.

ABOUT THE BOOK

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This book provides a sampling of voices through the excerpts of highly diverse summit and workshop participants, drawing on recurrent programs such as *Interactive Screen* and *Money and Law* and one-off summits such as *Outside/Inside: Boundary Crossings, a Wearable Design Workshop* (2004). Hoping to convey a sense of presence, the editors have excerpted moments from the vast array of audio recordings and resulting transcripts. These are drawn from an even richer selection of talks, presentations, essays, and images that contributors offered at the BNMI summits, workshops, and conferences. Our choices were limited by the existence and quality of audio recordings, and by the challenges involved in capturing an artist's or researcher's demonstration of work.

Starting in 2004, extensive work was undertaken by guest archivists and work-study assistants to compile an archive of the BNMI's activities, collating documentation, audio recordings, and commissioned reports from each of the events chronologically, and then making these documents available to the public online. The editors listened to hours upon hours of material (the recordings that were not yet digitized were sometimes listened to from tape—often remotely, streamed over Radio90) to determine which pieces were both audible enough and suitable for transcription. The editors also drew on the memories of BNMI staffers, who recounted some key talks and presentations. Other material had been transcribed at the time of the event, leaving no remaining audio documentation. Due to the uneven nature of the recordings and transcripts, editing was a speculative process. As some speakers could not be identified we added (M) or (F) to provide occasional insights on gender dynamics. We ask your indulgence.

Following Sara Diamond's and Susan Kennard's respective departures from The Banff Centre, the transcripts were finally re-edited and reorganized into the volume you now hold in your hands. We made our best efforts to contact all those whose words we excerpted, using existing permissions, social media and web sleuthing. Biographical data represents the speaker at the time of their presentation. The original presenters were not asked to update their talks, in an effort to ensure that the dialogues feel true to the times in which they took place—discrete moments in the fast-paced history of technological development and the fads and fashions of art.

The book is divided into six chapters that engage with the core philosophy and themes of the Banff New Media Institute. The transcripts are accompanied by a

series of commissioned essays on the key topic areas, written on the occasion of the BNMI's 10th anniversary in 2005. Each chapter also includes a context-setting introduction written by the editors.

The interested reader can visit banffcentre.ca/bnmi/archives/ to view an excellent online archive that documents the BNMI's activities during this decade and showcases the new-media efforts that took place at Banff before the founding of the institute.

An extensive catalogue of the events that took place at the BNMI—including a list of alumni—forms an appendix to the book, alongside a recent review from Susan Kennard.

The book's title, *Euphoria & Dystopia*, is a reference to the 10 years captured in this volume and to the nature of the BNMI itself. The BNMI rode the roller coaster of the new-media economy, experiencing its euphoric rise, dystopian rupture, and pragmatic re-emergence. Given the BNMI's commitment to providing artists and designers with access to technology, and its choice to engage with all sectors involved in new media—from corporate to scientific, commercial to artistic—the institute inevitably embodied both dystopian critiques of the emerging digital world and optimistic promises for a better digital future. The truth was—and is—somewhere in between.

IN SUMMARY

The pages of this book allow the reader points of entry into the theory, practical debates, and vision of the BNMI. We welcome your feedback.

FURTHER READING

The Banff Centre website includes an extensive archive in which events are listed with full agendas and lists of participants. In some cases, it is possible to listen to the original audio recordings of the sessions. Please visit banffcentre.ca/BNMI/programs/archives.

For programs of the BNMI not represented in this book, such as the Co-Production Program or the exhibitions of the Walter Phillips Gallery, please consult the respective websites banffcentre.ca/BNMI/coproduction/archives/i.asp and banffcentre.ca/wpg.

For each summit, there exist event summaries, minutes, or notes written by Sara Diamond (available on the BNMI Archives website) as well as unpublished commissioned reports and, in some cases, typed transcripts. A number of summits are fully transcribed and are available in the BNMI archives. These include *Developing and Designing Educational Multimedia* (1998), *Bell Canada and MediaLinx Present Big Game Hunters* (1998), *Living Architectures: Designing for Immersion and Interaction* (2001), *Unforgiving Memory* (2001), and *Human Voice/Computer Vox* (2001). The archives include reports to funders such as Telefilm Canada and CANARIE. Some of these are available in digital format via the website, or in hard-copy format for consultation in the BNMI Archives. For the reference of future scholars, a number of these reports are listed below.

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Coulson, Michael, Martha Ladly, and Joshua Portway. "*The Banff Summit Summary*," Report, Banff New Media Institute, 1997. http://www.banffcentre.ca/BNMI/programs/archives/1997/summer_summit/reports/summer_summit_1997_report.pdf.

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BIOGRAPHIES

Due to the large number of contributors to this book, all abbreviated biographies for those whose words are included in the book appear in notes, or are printed as part of transcript introductions. Please consult the index to find the relevant pages.

The biographies are up-to-date to the time at which presenters spoke at the BNMI. If presenters spoke on more than one occasion, their biographies are up-to-date to 2005, but not to the present.

Recently updated biographies of the essayists and editors follow.

SANDRA BUCKLEY holds a BA Honours from Australian National University in Asian Studies, an MA from Yale in East Asian Languages and Literatures, and a PhD from Yale in East Asian Languages and Literatures.

She has held positions as chair of East Asian studies at McGill University, chair of Japanese at Griffith University, and director of the Centre for Arts and Humanities at SUNY University at Albany. She is presently a senior scholar-in-residence at the Canadian Centre for Architecture. Her early research interests developed around questions of gender and urban spaces in contemporary Japan, with a focus on popular culture. Her more recent work is located at the theoretical convergence of urban cultural movements, popular culture, new digital technologies, and alternative practices of community formation. Her recent research project at the Canadian Centre for Architecture was entitled *Mobile Architectures* and is an analysis of new trends in youth culture, community formations, and movement in urban spaces in the context of emerging mobile digital-communication platforms.

Buckley is a co-founding editor of the *Theory Out of Bounds* series with University of Minnesota Press, editor and primary contributor to the *Routledge Encyclopedia of Contemporary Japanese Culture*, and author of *Broken Silence: Voices of Japanese Feminisms* (Berkeley: University of California, 1995). Her most recent articles include: “Extraordinary Appetites: A Japan Not-at-home-with-Itself,” in *The Pragmatist Imagination*, ed. Joan Ockman et al.

SARAH COOK is the co-editor of the Curatorial Resource for Upstart Media Bliss (CRUMB)—an international website and mailing list for curators of media art (crumbweb.org)—and Reader at the University of Sunderland. She is the co-author with Beryl Graham of the book *Rethinking Curating: Art After New Media* (Cambridge, MA: MIT Press, 2010). In 2008, she was Eyebeam’s inaugural curatorial fellow in New York. In 2005, she was a postdoctoral research fellow and curator in collaboration with BALTIC, the Centre for Contemporary Art (Gateshead, UK). She curates, lectures, and publishes internationally about new-media art.

Cook’s PhD (University of Sunderland, 2004) concerns the theory and practice of curating new media art and in 2001 she held a research fellowship in the library at the National Gallery of Canada studying the exhibitions of new media art held there. She holds an MA from Bard College’s Centre for Curatorial Studies in New York. Cook has a long-standing relationship with The Banff Centre and worked as a postdoctoral researcher and co-curator on exhibitions and publications with the Banff New Media Institute and the Walter Phillips Gallery. Cook has organized and curated exhibitions, commissioned new media art, and managed educational projects for BALTIC (Gateshead), *AV Festival* (Newcastle), Cornerhouse (Manchester), the Reg Vardy Gallery (Sunderland), Edith Russ Haus (Oldenburg), Locus+ (Newcastle), the Bellevue Art Museum (Seattle), the Walker Art Center (Minneapolis), and the National Gallery of Canada (Ottawa).

SARA DIAMOND is the president of OCAD University, Canada’s “university of the imagination,” which specializes in art, design, and media. She holds a PhD in Computer Science from SmartLab (University of East London) and degrees in New Media Theory and Practice, Social History, and Communications. While retaining OCAD University’s traditional strengths in art and design, she has led the university to become a leader in digital media and design research and curricula through the Digital Futures Initiative, which aims toward new research in inclusive design and health and design, as well as in sustainable technologies and design; she also initiated the unique Aboriginal Visual Culture program. Diamond currently serves on the Ontario Ministry of Culture’s Minister’s advisory council on Arts & Culture; the boards of directors of the Toronto Arts Council Foundation and ORANO, Ontario’s high-speed network; the board of National Centre of Excellence GRAND, Interactive Ontario; and SACUR, with the Association of Universities and University Colleges. She is a member of the Canadian Council of the Academies’ Expert Panel on the State of Science and Technology. She is founding chair of the Mobile Experience Innovation Centre and current co-chair (with RBC). She has acted as a new-media consultant to Heritage Canada and D’FAIT, as well as to international governments, institutions, and agencies in countries including China, United Kingdom, Argentina, Finland, Australia, Brazil, and the United States.

Diamond is a visualization, wearable-technology, and mobile-media researcher, artist, and designer. She is co-principle investigator of the Centre for Information Visualization/Data Driven Design, a major OCADU/York University initiative. She was the artistic director of Media & Visual Arts and Director of Research at The Banff Centre, where she created the Banff New Media Institute (BNMI) in 1995 and led it until 2005. Diamond created and was editor-in-chief of *HorizonZero*, an online showcase for new media art and design, in collaboration with Heritage Canada and The Banff Centre. She developed *CodeZebra*, a performance and media art, fashion, and software collaboration environment. Diamond continues to write extensively

about digital-media history, data visualization, digital media, and design strategy for peer-reviewed journals and curates for festivals and galleries. Her video art and installation works are held by collections all over the world, such as the National Gallery of Canada and the Museum of Modern Art in New York.

STEVE DIETZ is the founding artistic director of the biennial *OISJ Global Festival of Art on the Edge*, and the founder and executive director of Northern Lights, an interactive media-oriented arts agency, which presents innovative art in the public sphere, focusing on artists creatively using technology to engender new relations between audience and artwork and, more broadly, between citizenry and their built environment. He is the former curator of New Media at the Walker Art Center in Minneapolis, Minnesota, where he founded the New Media Initiatives department in 1996, the online art project Gallery 9, and digital-art study collection. He founded one of the earliest museum-based independent new-media programs at the Smithsonian American Art Museum in 1992. Dietz has curated or co-curated numerous exhibitions, including *Beyond Interface* (1998), *Art Entertainment Network* (2000), *The Art Formerly Known As New Media* (2005), and *Superlight* (2008). With Christiane Paul, he co-curated *FEEDFORWARD: Angel of History* at LABORAL Art and Industrial Creation Centre in Gijón, Spain (October 2009), and the 3rd OISJ Biennial on the theme of “Build Your Own World” in San Jose, California (September 2010). Dietz has written extensively and speaks widely about the art formerly known as new media.

JEAN GAGNON is interim director of Collections at the Cinémathèque Québécoise and an independent curator and art critic based in Montreal. From March 2008 to September 2009, he was director and curator of the SBC Gallery of Contemporary Art in Montreal. Prior to this, Gagnon was executive director of the Daniel Langlois Foundation for Art, Science and Technology, from 1998 to 2008. From 1988 to 1991, he worked as a media arts officer and the interim head of the Media Arts Section at the Canada Council for the Arts. Before that, Gagnon was an independent video producer based in Montreal. He also sits on the boards of many cultural organizations, including the Cinémathèque québécoise (Montreal) and Hexagram, Institute for Research/Creation in Media Arts and Technologies. Since 2004, Gagnon has been an adjunct professor in the Department of Visual Arts at the University of Ottawa. Between 1991 and 1998, he was associate curator of media arts for the National Gallery of Canada in Ottawa. Gagnon initiated the DOCAM research alliance on documentation and conservation of technologically based art works. He recently co-edited a special (bilingual) issue of *Artpress 2* (Spring 2009), entitled “Media Arts: Conservation and Restoration.” He is completing a PhD in the study and practice of art at the Université du Québec à Montréal, researching instrumental playing in audiovisual and new media arts.

N. KATHERINE HAYLES is a professor and the director of Graduate Studies in the Faculty of Literature, Arts and Science at Duke University. Previous to this, she was the Hillis Professor of Literature at the University of California, Los Angeles. She teaches and writes on the relations of literature, science, and technology in the contemporary period. Her book *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* won the Rene Wellek Prize for the Best Book in Literary Theory for 1998–99, and her recent book *Writing Machines* won the Susanne Langer Award for Outstanding Scholarship. Her book *My Mother Was a Computer: Digital Subjects and Literary Texts* was published in September 2006 by the University of Chicago Press. She is currently completing *How We Think: Transforming Power and Digital Technologies* with University of Chicago Press. Among other awards, her work has been recognized by a Guggenheim Fellowship, two fellowships from the National Endowment for the Humanities, a fellowship from the Humanities Center at Stanford University, and a Presidential Research

Fellowship from the University of California.

ERIC KLUITENBERG is a theorist, writer, and organizer on culture and technology. He teaches at the Institute for Interactive Media at the Hogeschool van Amsterdam and worked for many years as head of the media program at De Balie—Centre for Culture and Politics in Amsterdam. Previously, he taught theory of new media at the University of Amsterdam and the postgraduate programs of Academy Minerva, Groningen, the Royal Academy of Visual Arts, The Hague, and worked on the scientific staff of the Academy of Media Arts Cologne. He lectures and publishes extensively on culture, new media, and cultural politics throughout Europe and beyond. Since 1988, Kluitenberg has been involved as an organizer in important media culture events such as the first and second ISEA, *Interstating I, II, and III* (Tallinn), the *P2P New Media Culture in Europe Conference* (1997), the *Next 5 Minutes Festival of Tactical Media* (1999–2003), *Tulipomania DotCom—A Critique of the New Economy, net.congestion—International Festival of Streaming Media* (2000), *Debates & Credits—Media Art in the Public Domain* (2002), *World-Information.Org Amsterdam* (2002), and the mini-festival *An Archaeology of Imaginary Media* (2004). His recent book *Delusive Spaces: Essays on Culture, Media and Technology* (Rotterdam: NAI Publishers, 2011) focuses on not only keeping the utopian potential of public Internet forums alive but also critiquing the “delusions of the new” that absorbed new-media culture in its nascence. Kluitenberg places his argument within the broader histories of culture and technology.

SUSAN KENNARD works for Parks Canada as the Heritage Programs Manager, Banff Field Unit, and also manages the Canadian Rocky Mountain Parks—UNESCO World Heritage portfolio. Prior to working with Parks Canada, Kennard was the director and executive producer of the Banff New Media Institute at The Banff Centre. In the mid-’90s, Kennard worked in television as an associate producer for the *International Hour*, *CBC Newsworld* Calgary, and *Dateline NBC* in New York. In radio, she was a writer and broadcaster for *CBC Radio Calgary*, and worked with campus and community radio across Canada. Susan was a co-founder of *Radiogo*, an early hybrid net/fm-art/pirate/community radio station. In 2005, Kennard concluded an MA in communication for development from the University of Malmö, Sweden. Kennard participates on numerous juries and review committees in Canada and abroad and is on the board of governors with the Banff YWCA.

JEFF LEIPER is manager of Strategic Policy for the Canadian Radio and Television Commission. He is former editor-in-chief and publisher of *Decima Reports*, including *Canadian New Media*, and worked as the director of Canadian Market Strategies, Yankee Group. He is a seasoned observer of the technological, regulatory, and business developments resulting from the IP—everything revolution. Prior to *Decima Reports*, Leiper was a technology journalist who wrote extensively about the telecommunications industry. He has specialized in following legal and regulatory developments in broadcasting, new media, telecommunications, and copyright.

ALLUCQUERE ROSANNE STONE is an American academic, theorist, author, and performance artist. She is currently associate professor and founding director of the Advanced Communication Technologies Laboratory and the New Media Initiative in the Department of Radio-TV-Film at the University of Texas at Austin. Concurrently, Stone is Wolfgang Kohler Professor of Media and Performance at the European Graduate School, and Humanities Research Institute Fellow at the University of California, Irvine. Stone has worked in and written about film, music, experimental neurology, writing, engineering, and computer programming. Stone is transgendered and is considered a founder of the academic discipline of transgender studies. She has been profiled in *ArtForum*, *Wired*, *Mondo 2000*, and other publications. She is the author of numerous publications, including *The Empire Strikes Back: A Posttranssexual Manifesto* (1996) and *The War of Desire and Technology at the Close of the Mechanical Age* (Cambridge, MA: MIT Press, 1996), both of which are available in a wide selection of translated editions.